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

September 30, 2020 SDD-31.13

Mr. Sean Paver
City of San Diego Public Works Department
525 B Street, Suite 750
San Diego, CA 92101

Subject: Restoration Plan for the Tecolote Canyon Trunk Sewer Improvement Project

Dear Mr. Paver:

This letter presents the restoration plan (hereafter referred to as Plan) for temporary impacts associated with the City of San Diego (City) Engineering & Capital Projects Department (ECPD) Tecolote Canyon Trunk Sewer Improvement Project (project) located in Tecolote Canyon Natural Park. The proposed restoration would be located within Tecolote Park on land owned by the City. This Plan intends to provide the framework for restoration of temporary impacts to riparian habitat and sensitive upland habitats, as well as to jurisdictional resources subject to the U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the federal Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA or State Porter-Cologne Water Quality Control Act, California Department of Fish and Wildlife (CDFW) jurisdiction under Section 1602 of the California Fish and Game Code, and wetlands subject to the City's Environmentally Sensitive Lands (ESL) Ordinance Regulations. The proposed restoration of native habitat within Tecolote Canyon implements the goals and objectives of the City's Multiple Species Conservation Program (MSCP) Subarea Plan (City of San Diego [City] 1997) and Tecolote Canyon Natural Resource Management Plan (HELIX Environmental Planning, Inc. [HELIX] 2006) and follows the City's Land Development Code Biology Guidelines (City 2018). Included in this document are an installation plan, maintenance plan, and monitoring program for proposed restoration. Nomenclature used in this report follows Oberbauer (2008) and City's Biology Guidelines (City 2018) for vegetation communities, Jepson Flora Project (eds. 2017) for plants, and American Ornithological Society (2016) for birds.

PROJECT LOCATION

The approximately 6.5-mile Tecolote Canyon Trunk Sewer is located within the Tecolote Canyon Natural Park, south of Genesee Avenue, and northwest of Tecolote Road in the City of San Diego, California (Figure 1, *Regional Location Map*). The project is located within unsectioned lands of the Pueblo land grant in Townships 15 and 16 South, Range 3 West as shown on the U.S. Geological Survey (USGS) 7.5-minute La Jolla quadrangle map (Figure 2, *Project Vicinity Map [USGS Topography]*). The majority of project impacts are within the Multi-Habitat Planning Area (MHPA) of the City's MSCP Subarea Plan (City

1997) boundaries (Figure 3, *Project Vicinity Map [Aerial Photograph]*). The project area is divided into three reaches: north, central, and south. The northern reach is north of Balboa Avenue, the central reach is between Balboa Avenue and Mount Acadia Boulevard, and the southern reach is south of Mount Acadia Boulevard.

PROJECT DESCRIPTION

The Tecolote Canyon Trunk Sewer was built in the 1950s and is composed of vitrified clay that is generally greater than 18 inches in diameter. In 2012, the trunk sewer was assessed, and it was determined that improvements were required. Computer modeling indicated the sewer would reach capacity in 2017-2020 and that improved capacity is required due to rainfall inflow and infiltration during the rainy season. Inflow occurs from rainfall runoff entering the sewer system via manholes, and infiltration occurs from water entering cracks and breaks in the existing sewer pipes. Additionally, a closed-circuit television investigation of the pipe revealed deteriorated conditions and damages in the upper portion of the alignment.

The project will involve the replacement and rehabilitation of approximately 4.7 miles of the 6.5-mile trunk sewer and water main. It will also involve access improvements to minimize damage associated with emergency repairs and will include stream crossings, manhole protection, and new access pathways. The project design will include both open trenching and trenchless construction methods to minimize impacts to City Environmentally Sensitive Lands.

EXISTING CONDITIONS

The City defines sensitive habitat as Environmentally Sensitive Lands in their Biology Guidelines (City 2018). According to these guidelines, all wetlands and associated plant communities, and Tier I through IIIB uplands, are considered sensitive habitat and impacts to these areas require mitigation. The project site supports 11 sensitive vegetation communities (Figures 4-1 through 4-9): oak riparian forest (including disturbed phase), mule fat scrub, southern riparian forest (including disturbed phase and existing restored areas), southern willow scrub (including disturbed phase), maritime succulent scrub, coast live oak woodland, native grassland (comprised entirely of existing restored areas), Diegan coastal sage scrub (including disturbed phase and existing restored areas), southern mixed chaparral (including disturbed phase), poison oak chaparral, and non-native grassland (including disturbed phase and existing restored areas). Non-sensitive vegetation communities within the project site consist of eucalyptus woodland, disturbed land, non-native vegetation/ornamental, and developed land.

The project area is located within the bottom of the canyon, which runs generally from north to south, and is situated along the east side of Tecolote Creek. The surrounding topography rises above the project site to the east and west. The northern end of the project site is approximately 200 feet above mean sea level (amsl) in elevation and the south end of the project site is approximately 45 feet amsl in elevation.

Nine soil types are mapped within the project area (U.S. Department of Agriculture 2014). The two most common soil types are Terrace escarpments and Reiff fine sandy loam, two to five percent slopes. The seven other soil types present include: Salinas clay loam, two to nine percent slopes; Huerhuero loam, 15 to 30 percent slopes, eroded; Huerhuero loam, two to nine percent slopes; Gaviota fine sandy loam,

30 to 50 percent slopes; Chesterton-Urban land complex, two to nine percent slopes; Olivenhain cobbly loam, nine to 30 percent slopes; and Carlsbad-Urban land complex, nine to 30 percent slopes.

Tecolote Creek is within the Tecolote Hydrological Area of the Peñasquitos Hydrologic Unit and is a perennial stream with flows that vary with the season. The project site receives an average of 10.5 inches of rain per year. Urban run-off enters the site year-round through approximately 77 storm drains that direct water into Tecolote Creek (HELIX 2006).

PROJECT IMPACTS AND MITIGATION REQUIREMENTS

Impacts to City ESL Wetlands and Sensitive Vegetation Communities

The Tecolote Canyon Trunk Sewer Improvement Project will result in 5.28 acres of permanent and temporary impacts to sensitive habitats (Table 1, *Impacts to Vegetation and City ESL Wetlands and Required Mitigation*). The restoration of temporarily impacted sensitive habitat addressed by this Plan will provide credit toward total mitigation requirements as specified in the City of San Diego Guidelines (City 2018). Impacts to City ESL wetlands and riparian habitat total 0.95 acre and are comprised of 0.55 acre of oak riparian forest (including disturbed), 0.03 acre of mule fat scrub, 0.18 acre of southern riparian forest (including disturbed), and 0.19 acre of southern willow scrub (including disturbed). Impacts to sensitive upland vegetation communities total 4.33 acres and are comprised of 0.28 acre of maritime succulent scrub, 0.22 acre of coast live oak woodland, 2.28 acres of Diegan coastal sage scrub (including disturbed phase), 0.13 acre of southern mixed chaparral (including disturbed phase), 0.08 acre of poison oak chaparral, and 1.34 acres of non-native grassland (including disturbed phase). Impacts to coast live oak woodland do not result in direct impacts to individual coast live oak (*Quercus agrifolia*) trees.

Impacts to sensitive vegetation communities shall occur in accordance with the ratios provided in Table 3 of the City's Biology Guidelines (City 2018). Impacts to 0.55 acre of oak riparian forest (including disturbed phase) and 0.18 acre of southern riparian forest (including disturbed phase) will be provided at a 3:1 ratio; impacts to 0.19 acre of southern willow scrub (including disturbed phase) and 0.03 acre of mule fat scrub will be provided at a 2:1 ratio, for an anticipated combined mitigation obligation of 2.63 acres (Table 1). Mitigation for impacts to 0.22 acre of coast live oak woodland Tier I habitat, 0.28 acre of maritime succulent scrub Tier I habitat, 2.28 acres of Diegan coastal sage scrub Tier II habitat, 0.21 acre of southern mixed chaparral/poison oak chaparral Tier IIIA habitat, and 1.34 acres of non-native grassland Tier IIIB habitat shall occur in accordance with the ratios provided in Table 3 of the City's Biology Guidelines (City 2018), for an anticipated combined mitigation obligation of 4.83 acres. (Table 1).

Table 1
IMPACTS TO VEGETATION AND CITY ESL WETLANDS AND REQUIRED MITIGATION

Vegetation Community	Tier	Total Impacts (Acres)	Mitigation Ratio[1]	Required Mitigation (Acres)
City ESL wetlands/Riparian Habitat				
Oak riparian forest (includes disturbed)	Wetland	0.55	3:1	1.65
Southern riparian forest, disturbed	Wetland	0.18	3:1	0.54
Southern willow scrub (includes disturbed)	Wetland	0.19	2:1	0.38
Mule fat scrub	Wetland	0.03	2:1	0.06
	Wetlands Subtotal	***0.95***	**--**	***2.63***
Sensitive Uplands				
Tier I Habitat				
Coast live oak woodland (understory)	I	0.22	2:1	0.44
Maritime succulent scrub	I	0.28	2:1	0.56
Native Grassland	I	--	--	--
	Tier I Total	***0.50***	**--**	***1.00***
Tier II Habitat				
Diegan coastal sage scrub (includes disturbed)	II	2.28	1:1	2.28
	Tier II Total	**2.28**	**--**	***2.28***
Tier IIIA Habitat				
Southern mixed chaparral (includes disturbed)	IIIA	0.13	1:1	0.13
Poison oak chaparral	IIIA	0.08	1:1	0.08
	Tier IIIA Total	***0.21***	**--**	***0.21***
Tier IIIB Habitat				
Non-native grassland (includes disturbed)	IIIB	1.34	1:1	1.34
	Tier IIIA Total	***1.34***	**--**	***1.34***
	Sensitive Uplands Subtotal	***4.33***	**--**	***4.83***
Non-Sensitive Uplands				
Eucalyptus woodland	IV	0.03	--	--
Disturbed land[2]	IV	0.83	--	--
Non-native vegetation/ornamental	--	0.38	--	--
Developed	--	2.61	--	--
¤	***Non-Sensitive Uplands Subtotal***	***3.85***	--	--
	TOTAL	**9.13**	**--**	**7.46**

[1] Proposed ratios are in accordance with the City Biology Guidelines (2018) and presume mitigation will occur within MHPA boundaries.

[2] Consisting of dirt paths and trails; disturbed land impacts requiring erosion control will be evaluated post-construction

Impacts to Non-Sensitive Vegetation Communities

Temporary impacts to non-sensitive upland habitat consisting of non-native vegetation/ornamental and eucalyptus woodland (totaling 0.41 acre [Table 1]; excluding impacts to disturbed and developed lands associated with trails, access paths, and the golf course) will be revegetated for erosion control purposes following the Revegetation and Erosion Control Guidelines in the Landscape Standards of the City's Land

Development Code (City 2016). Revegetation requirements will be addressed separately by the plan(s) being prepared by the licensed landscape architect.

Impacts to Jurisdictional Waters and Wetlands

The project will result in permanent and temporary impacts to jurisdictional wetlands and riparian habitat as defined by the USACE, RWQCB, and CDFW. Impacts to jurisdictional waters and wetlands include permanent impacts to 0.02 acre of non-wetland waters of the U.S./State, and temporary impacts to 0.003 acre of wetland waters of the U.S./State and 0.05 acre of non-wetland waters of the U.S/State subject to USACE and RWQCB jurisdiction (Table 2, *Impacts to Jurisdictional Waters and Wetlands and Proposed Mitigation*).

A total of 1.03 acres of CDFW jurisdictional riparian habitat and streambed is comprised of 0.32 acre of permanent impacts and 0.71 acre of temporary impacts (Table 2). Permanent impacts include 0.25 acre of oak riparian forest (including disturbed), 0.03 acre of coast live oak woodland, 0.001 acre of disturbed southern riparian forest, 0.03 acre of southern willow scrub (including disturbed phase), and 0.01 acre of unvegetated streambed. Temporary impacts include 0.30 acre of oak riparian forest (including disturbed phase), 0.02 acre of coast live oak woodland, 0.03 acre of mule fat scrub, 0.18 acre of disturbed southern riparian forest, and 0.16 acre of southern willow scrub (including disturbed phase), and 0.02 acre of unvegetated streambed.

Impacts to jurisdictional waters and wetlands will require permitting through the appropriate regulatory agencies. Anticipated wetland permits include a CWA Section 404 permit from the USACE, CWA Section 401 Water Quality Certification or State Porter-Cologne Water Quality Control Act Waste Discharge requirements from the RWQCB, and CFG Code Section 1602 Streambed Alteration Agreement from CDFW. Mitigation for impacts to jurisdictional wetlands and waters are proposed to occur at ratios consisted with those required by the regulatory agencies. However, final mitigation requirements would be determined through consultation with the USACE, RWQCB, and CDFW; final approved mitigation ratios will supersede those proposed here and will not be in addition to mitigation required by the City.

Impacts to 0.07 acre of non-wetland waters of the U.S./State subject to USACE and RWQCB jurisdiction will be mitigated at a 1:1 ratio (Table 2). Impacts to 0.55 acre of oak riparian forest and 0.18 acre of southern cottonwood-willow riparian forest of CDFW jurisdictional riparian habitat shall be mitigated at a 3:1 ratio. Impacts to 0.05 acre of coast live oak woodland, 0.19 acre of southern willow scrub, and 0.03 acre of mule fast scrub of CDFW jurisdictional riparian habitat shall be mitigation at a 2:1 ratio. Impacts to 0.03 acre of CDFW unvegetated streambed shall be mitigated at a 1:1 ratio. Combined mitigation for CDFW riparian habitat and streambed totals 2.76 acres (Table 2).

Table 2
IMPACTS TO JURISDICTIONAL WATERS AND WETLANDS AND PROPOSED MITIGATION

Vegetation Community	Impacts (acre)	Mitigation Ratio[1,2]	Required Mitigation (acre)
USACE/RWQCB Jurisdiction			
Non-wetland WUS/Waters of the State	0.07	1:1	0.07
Total USACE/RWQCB	**0.07**	**--**	**0.07**
CDFW Jurisdiction			
Coast live oak woodland	0.05	2:1	0.10
Oak riparian forest – including disturbed phase	0.55	3:1	1.65
Southern riparian forest- disturbed	0.18	3:1	0.54
Southern willow scrub – including disturbed phase	0.19	2:1	0.38
Mule fat scrub	0.03	2:1	0.06
Streambed	0.03	1:1	0.03
Total CDFW	**1.03**	**--**	**2.76**

[1] Mitigation ratios for impacts to USACE, RWQCB, and CDFW jurisdictional areas will be negotiated with the agencies and final approved mitigation ratios will supersede those proposed here and will not be in addition to mitigation required by the City. Proposed ratios are in accordance with the City Biology Guidelines (2018) and presume mitigation will occur within MHPA boundaries.

[2] Mitigation required by the USACE/RWQCB includes 1:1 establishment for permanent impacts; the remaining mitigation may be with be establishment, rehabilitation, and/or enhancement. City mitigation requirements for wetland impacts include a 1:1 minimum creation or restoration component.

Mitigation

The project's overall mitigation requirement for impacts to City ESL wetlands, riparian habitat, and sensitive Tier I-IIIB uplands totals 7.46 acres and is comprised of 2.63 acres of City ESL wetlands/riparian habitat and 4.83 acres of sensitive uplands which includes 1.00 acre of Tier I habitat, 2.28 acres of Tier II habitat, 0.21 acre of Tier IIIA habitat, and 1.34 acres of Tier IIIB. Mitigation shall occur through on-site restoration of sensitive vegetation communities temporarily impacted during construction, and allocation of available mitigation credits to existing public utilities department (PUD) mitigation sites. On-site mitigation will consist of restoration of 0.69 acre of temporarily impacted riparian habitat areas and 3.77 acres of temporarily impacted sensitive upland habitat areas for a total of 4.46 acres (Table 3, *Mitigation*). Mitigation for impacts shall occur in-kind or of a higher habitat Tier.

The remaining 3.00 acres of required mitigation will consist of allocation of available mitigation credits at existing PUD mitigation sites as follows: 1.94 acres of wetland credits at the Central Tecolote Mitigation Site; 0.61 acre of Tier I credits at either the Central Tecolote Mitigation Site and Otay Mesa Upland Mitigation Bank; and 0.19 acre of Tier II credits, 0.04 acre of Tier IIIA credits, and 0.22 acre of Tier IIIB credits at either the Central Tecolote Mitigation Site, Otay Mesa Upland Mitigation Bank, and Canyon View Upland Restoration Mitigation Site.

Table 3
MITIGATION (acre)

Vegetation Community	Required Mitigation	On-Site Mitigation[1]	Mitigation Credits[2]
City ESL wetlands/Riparian Habitat			
Oak riparian forest (includes disturbed)	1.65	0.30	1.35
Southern riparian forest, disturbed	0.54	0.21[3]	0.33
Southern willow scrub (includes disturbed)	0.38	0.15	0.23
Mule fat scrub	0.06	0.03	0.3
Wetlands Subtotal	***2.63***	***0.69***	***1.94***
Sensitive Uplands			
Tier I Habitat			
Coast live oak woodland (understory)	0.44	0.12	--
Maritime succulent scrub	0.56	0.24	--
Native Grassland	--	0.03[4]	--
Tier I Total	***1.00***	***0.39***	***0.61***
Tier II Habitat			
Diegan coastal sage scrub (includes disturbed)	2.28	3.21[5,7]	--
Tier II Total	***2.28***	***3.21***	***0.19***
Tier IIIA Habitat			
Southern mixed chaparral (includes disturbed)	0.13	0.17[6]	--
Poison oak chaparral	0.08	--[6]	--
Tier IIIA Total	***0.21***	***0.17***	***0.04***
Tier IIIB Habitat			
Non-native grassland (includes disturbed)	1.34	--[7]	0.22
Tier IIIA Total	***1.34***	***0***	***0.22***
Sensitive Uplands Subtotal	***4.83***	***3.77***	***1.06***
TOTAL	**7.46**	**4.46**	**3.00**

1 On-site mitigation shall be provided through on-site revegetation of temporary disturbed areas.
2 The remaining mitigation not met through on-site restoration shall be provided through the allocation of available mitigation credits as follows: Central Tecolote Mitigation Site for wetland impacts; Central Tecolote Mitigation Site and Otay Mesa Upland Mitigation Bank for Tier I habitats; and Central Tecolote Mitigation Site, Otay Mesa Upland Mitigation Bank, and Canyon View Upland Restoration Mitigation Site for Tier II, IIIA, and IIIB habitats.
3 Southern riparian forest restoration includes a 0.3-acre portion of the Central Tecolote Canyon Mitigation site that was impacted by the project.
4 Native grassland will be restored within a 0.03-acre portion of the Central Tecolote Canyon Mitigation site that was impacted by the project.
5 Diegan coastal sage scrub restoration includes 1.09 acres of temporarily disturbed non-native grassland that will be restored as Diegan coastal sage scrub and a 0.15-acre portion of the Central Tecolote Canyon Mitigation site that was impacted by the project.
6 Temporarily impacted poison oak chaparral areas will be restored as chaparral.
7 1.09 acres of temporarily impacted non-native grassland areas will be restored as Diegan coastal sage scrub and 0.03 acre will be restored as native grassland.

The project's overall anticipated mitigation requirement for impacts to USACE and RWQCB jurisdictional areas totals 0.07 acre of non-wetland waters of the U.S./State (Table 4, *Proposed Mitigation for Impacts to Jurisdictional Waters and Wetlands*). The overall anticipated mitigation obligation for impacts CDFW jurisdictional riparian habitat and streambed total 2.76 acres (Table 4). Mitigation shall occur through on-site restoration of jurisdictional areas temporarily impacted during construction, and allocation of available mitigation credits to existing PUD mitigation sites. On-site mitigation will consist of restoration of 0.79 acre of CDFW jurisdictional riparian habitat (Table 4).

The remaining 0.07 acre of required mitigation for impacts to USACE and RWQCB jurisdictional habitat shall occur through the allocation of 0.07 acre of available creation credit at the Central Tecolote Mitigation site. The Central Tecolote Mitigation Site mitigates for past and future impacts to upland and wetland habitat within Tecolote Canyon Natural Park and Los Peñasquitos watershed associated with the maintenance of water and sewer pipelines and related access paths. The remaining 1.97 acres of required mitigation for impacts to CDFW jurisdictional riparian habitat and streambed will be completed through the allocation of 1.97 acres of available mitigation credits at the Central Tecolote Canyon Mitigation Site. The required 1:1 wetland creation/restoration component will be satisfied through on-site restoration of temporary impact areas and the allocation of creation credit at the Central Tecolote Canyon Mitigation site.

As stated previously, final mitigation requirements to offset impacts on federal and state jurisdictional waters will be determined as part of the permitting process with the USACE, RWQCB, and CDFW and will depend on mitigation type (creation, restoration, etc.), mitigation location, quality of mitigation proposed, and will supersede those proposed here and will not be in addition to mitigation required by the City.

Table 4
PROPOSED MITIGATION FOR IMPACTS TO JURISDICTIONAL WATERS AND WETLANDS

Vegetation Community	Required Mitigation[1]	On-Site Mitigation[2] (acre)	Mitigation Credits[3] (acre)
USACE/RWQCB Jurisdiction			
Non-wetland WUS/Waters of the State	0.07	--	0.07
Total USACE/RWQCB	**0.07**	**0**	**0.07**
CDFW Jurisdiction			
Coast live oak woodland	0.10	0.10	--
Oak riparian forest – including disturbed phase	1.65	0.30	1.35
Southern riparian forest- disturbed	0.54	0.21[4]	0.33
Southern willow scrub – including disturbed phase	0.38	0.15	0.23
Mule fat scrub	0.06	0.03	0.03
Streambed	0.03	--	0.03
Total CDFW	**2.76**	**0.79**	**1.97**

[1] Final mitigation obligations shall be negotiated with the USACE, RWQCB, and CDFW during the permitting process
[2] On-site mitigation shall be provided through on-site revegetation of temporary disturbed areas.

This Plan addresses the on-site restoration of the 4.46 acres of temporarily impacted City ESL wetlands, sensitive habitat, and CDFW jurisdictional riparian habitat which is comprised of 20 restoration areas (Figures 4-1 through 4-9, *Restoration/Revegetation Plan Maps*).

RESTORATION GOALS AND OBJECTIVES

To partially meet the project's mitigation requirements, the City proposes the on-site restoration of 4.46 acres of temporary impacts to sensitive habitats (City ESL Wetlands and Tier I – IIIB upland habitats). The final goal will be to restore areas temporarily impacted to same or better functions and services provided prior to impacts.

TARGET FUNCTIONS AND SERVICES

The functions and services of the restored habitats are expected to approach those present in existing habitats prior to project impacts. The existing wetland and upland habitats are used by a variety of wildlife as a corridor between important habitat areas and for foraging, nesting, and roosting. The restoration areas will provide suitable nesting and foraging habitat for invertebrates, reptiles, birds, and mammals. Areas revegetated for erosion control are expected to stabilize soils with native vegetation so that impacts to adjacent, native habitat can be minimized.

MULTIPLE SPECIES CONSERVATION PROGRAM LAND USE CONSISTENCY ANALYSIS

The MSCP establishes specific guidelines that limit activities that occur within the MHPA. In general, activities occurring within the MHPA must conform to these guidelines and, wherever feasible, should be located in the least sensitive areas. Utility lines (e.g., sewer, water, etc.), limited water facilities, and other essential public facilities in compliance with the General Planning Policies and Design Guidelines found in Section 1.4.2 of the City's MSCP Subarea Plan (City 1997) are considered conditionally compatible with the biological objectives of the MSCP and are thus allowed within the City's MHPA. The City's MSCP also includes Land Use Adjacency Guidelines (LUAGs), contained in Section 1.4.3 of the MSCP, that are designed to minimize indirect impacts to sensitive resources contained adjacent to the MHPA and thus maintain the value of the preserved open space. These adjacency guidelines govern impacts within and adjacent to the MHPA.

The project has been designed to adhere to the applicable general planning policies, guidelines, and LUAGS to minimize impacts and to maintain the function of the MHPA. Compatible land use guidelines consist of roads and utilities, fencing and lighting, materials storage, mining, extraction, processing facilities, and flood control. Land use adjacency guidelines pertain to drainage, toxins, lighting, noise, barriers to incursion, invasive species, brush management, and grading/land development. Activities in this restoration plan that align with MSCP-compatible land use requirements include: storing materials within designated areas, using appropriate containment and approved erosion and sediment controls during and after maintenance, and restoring unavoidable temporary impacts to native habitat. The proposed restoration effort is consistent with the MSCP General Planning Policies and Design Guidelines and with the Land Use Adjacency Guidelines, as described below.

The proposed restoration effort is consistent with the roads and utilities guidelines because temporary construction areas, roads, and staging areas will not disturb adjacent sensitive habitat unless it is unavoidable. All vehicular site access will occur along the existing dirt access road or other disturbed areas; foot trails will be designated by the Restoration Specialist and will occur through disturbed or non-sensitive habitat wherever possible. If temporary habitat disturbance beyond minor trimming of above-ground vegetation is unavoidable, then restoration of, and/or other mitigation for, the disturbed area will occur. Only temporary staking will be used to demarcate the work area and only as needed. No lighting is included as part of the restoration effort. Long-term materials storage (e.g., hazardous or toxic, chemicals, equipment, etc.) will not occur within the MHPA. Storage may occur, if necessary, temporarily during construction, per applicable regulations and only within designated staging areas. Best Management Practices (BMPs) will be used, as needed, to protect habitat within the MHPA. Mining will not occur as part of the restoration effort. The need for flood control is not expected.

Proposed restoration will not affect current drainage patterns or create any new, impermeable surfaces within the restoration areas. No toxins will be introduced as only appropriate herbicides will be used for weed control. No night lighting will be used as part of the restoration effort. Since the restoration areas will not be graded and weed whipping will be completed within a few days, no noise impacts or constraints are expected. No permanent barriers will be constructed as part of the restoration effort, temporary signage will direct public access away from the restoration site. Temporary barriers may be installed if public access becomes detrimental to the restoration effort. Invasive plants will be removed from the restoration boundaries and will not be included in the installed plant palettes. Brush management does not apply, as all proposed restoration is located outside of any Brush Management Zone and no new structures are being installed as part of the restoration effort. The proposed restoration is consistent with the land use adjacency guideline concerning grading/land development as no separate grading is proposed (all grading will be part of the project).

The proposed restoration specifically conforms to the MSCP because existing, sensitive habitats (City ESL wetlands and Tier I – Tier IIIB upland habitats) will be restored in-kind, or a higher habitat Tier, thereby re-creating existing functions and services. All the proposed restoration and subsequent maintenance and monitoring will be consistent with the City's MSCP Subarea Plan (City 1997).

RESPONSIBLE PARTIES

Financial Responsibility

The City ECPD will be responsible for financing the installation, five-year maintenance program, and biological monitoring of the restoration proposed in this plan. Damage to facilities occurring as a result of unusual weather or 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 the contractor's inadequate maintenance or operation of facilities, as determined by the Restoration Specialist.

Restoration Team

The City ECPD will be responsible for retaining a qualified Restoration Specialist with over five years of experience monitoring habitat restoration to oversee the entire installation and monitoring in coordination with City DSD staff. The City ECPD will also be responsible for retaining qualified installation

and maintenance contractors with documented success in restoration of native upland habitat. Contact information for the City ECPD is:

City of San Diego
Engineering & Capital Projects Department
Contact: Mr. Sean Paver
525 B Street, MS908A
San Diego, CA 92101
Office: 619-533-3629

Landscape Architect

A licensed landscape architect will prepare the necessary construction documents, including planting plans, and will provide the draft landscape plans to the City for review and approval prior to initiating construction.

Restoration Specialist

Overall supervision of the installation and maintenance of this restoration effort will be the responsibility of a Restoration Specialist with at least five years of experience in native habitat restoration. The Restoration Specialist will oversee the efforts of the installation/maintenance contractor(s) for the life of the restoration. Specifically, the Restoration Specialist will educate all participants about restoration goals and requirements; inspect plant material; directly oversee planting, seeding, weeding, installation of erosion control materials, and other maintenance activities; and conduct regular monitoring as well as annual assessments of the restoration effort. The Restoration Specialist will help ensure that the contractor does not inadvertently impact adjacent sensitive habitat during installation or maintenance activities. When necessary, the Restoration Specialist will provide the City ECPD and contractor with a written monitoring memo, including a list of items in need of attention. The Restoration Specialist will prepare and submit required reports annually. A Biologist may perform some of the duties outlined under the supervision of the qualified Restoration Specialist.

Installation/Maintenance Contractor(s)

The installation and maintenance contractor(s), hired by the City ECPD, will have experience in native habitat restoration, be knowledgeable as to the maintenance of native upland habitat, and be familiar with native and non-native plants. The maintenance contractor and the installation contractor may be the same entity. The installation and maintenance contractor(s) will be a firm (or firms) holding a valid C-27 Landscape Contracting License from the State of California, a valid Maintenance Gardener Pest Control Business License or Pest Control Business License, and a Qualified Applicator Certificate or Qualified Applicator License, with Category B, that will allow them to perform the required work for this restoration effort. The project proponent may change contractors at its discretion.

The installation contractor will be responsible for plant salvage, initial weed control, irrigation installation, planting, and seeding, as well as maintenance of the restoration sites during the 120-day plant establishment period (PEP). Following installation, this contractor will submit marked up as-built irrigation plans to the project proponent and lists of all plant/seed material installed to the Restoration Specialist for inclusion in the as-built report. The installation contractor will remain responsible for the

restoration effort until these areas have met the success criteria specified for the PEP and official sign off has been obtained from the Restoration Specialist, City ECPD, and City DSD staff.

The maintenance contractor will implement maintenance of the restoration areas for five years. The maintenance contractor will service the entire site according to the maintenance schedule (Table 14, below). Service will include, but not be limited to, weed control, irrigation maintenance, trash removal, watering, dead plant replacement, re-seeding, and pest and disease management. Following restoration sign off, the maintenance contractor also will remove any erosion control, fencing/staking, and the aboveground portion of the irrigation system, as directed by the Restoration Specialist and City ECPD. All activities conducted will be seasonally appropriate and approved by the Restoration Specialist and City ECPD. The maintenance contractor will meet the Restoration Specialist and City ECPD at the site when requested and will perform all checklist items in a timely manner as directed.

Nursery (Seed/Plant Procurement)

Plants and seed may be purchased from a nursery or supplier specializing in native plants or contract grown. Plant and seed material should be locally propagated and collected from coastal San Diego County, within 25 miles of the coast. If necessary, salvaged plants may be stored at a qualified nursery under the supervision of the Restoration Specialist. All plants will be inspected for Argentinian ants and will not be accepted if ants are present.

Long-term Responsibility

Due to the location of the restoration areas on City-owned Park lands, the City's Parks and Recreation Department will be responsible for Long-Term Management following successful completion of the five-year maintenance and monitoring program. The primary avenue for the City's participation is through the permitting process; reviewing and commenting on this plan, the construction documents, and subsequent annual reports; and inspecting and commenting on significant milestones involved in the implementation of this plan.

City of San Diego
Parks and Recreation Department
Contact: Mr. Paul Kilburg
Office: 619-685-1327
pkilburg@sandiego.gov

RESTORATION IMPLEMENTATION AND SITE PREPARATION

On-site restoration of 4.46 acres of impacted City ESL wetlands and sensitive upland habitat will be conducted in place and in-kind, with the exception of the following: poison oak chaparral (Tier IIIA) will be restored as chaparral (Tier IIIA) and non-native grassland habitat (Tier IIIB will be restored as coastal sage scrub (Tier II). Restoration of riparian forest communities is composed of oak riparian forest and southern riparian forest, and restoration of riparian scrub communities is composed of mule fat scrub and southern willow scrub. Total restoration will consist of 0.51 acre of riparian forest, 0.18 acre of riparian scrub, 0.12 acre of coast live oak woodland understory, 0.24 acre of maritime succulent scrub, 0.03 acre of native grassland, 3.21 acres of coastal sage scrub, and 0.17 acre of chaparral vegetation communities (Table 5, *On-Site Habitat Restoration*).

Revegetation for proposed temporary impacts to 0.41 acre of non-native vegetation/ornamental and eucalyptus woodland will be revegetated with an erosion control seed mix. Existing disturbed lands consist of dirt trails and paths that will be returned to their former condition as bare ground; the trails being abandoned due to trail improvements consisting of trail relocation are not addressed by this plan.

Table 5
ON-SITE HABITAT RESTORATION

Restored Habitats	Tier	Total Acres
Wetlands		
Riparian forest	Wetland	0.51
Riparian scrub	Wetland	0.18
Wetlands Subtotal		***0.69***
Sensitive Uplands		
Coast live oak woodland understory	I	0.12
Native grassland	I	0.03
Maritime succulent scrub	I	0.24
Diegan coastal sage scrub	II	3.21
Chaparral	IIIA	0.17
Sensitive Uplands Subtotal		***3.77***
TOTAL		**4.46**

Pre-construction Meeting

Prior to starting restoration, a meeting will be held on-site with the installation contractor, Restoration Specialist, City ECPD Project Manager, City Parks and Recreation Department, and City Development Services Department (DSD) staff to identify sensitive areas, devise a strategy for avoidance, and discuss project details and schedules.

Site Access

A right-of-entry permit will be obtained from the Parks and Recreation Department by the installation and maintenance contractor(s). Vehicles may access the canyon for restoration-related activities along existing access paths. Some equipment (e.g., irrigation materials or container plantings) may be temporarily stored inside of delineated restoration areas.

Access to restoration areas in the north reach can be obtained from Genesee Avenue and Balboa Avenue; access to restoration areas in the central reach can be obtained from Mount Ashmun Drive, Mount Ariane Drive, and Mount Acadia Boulevard; access to restoration areas in the south reach can be obtained from Mount Acadia Boulevard, Snead Avenue, and Tecolote Road. Additional access to restoration areas in the south reach may be obtained through agreements with the Tecolote Canyon Golf Course and San Diego Gas & Electric (SDG&E) for use of access roads through their property and easements; SDG&E has an access road from San Buenaventura Way near the University of San Diego campus.

Fencing/Erosion Control

Temporary fencing consisting of metal T-posts and high-visibility rope will be installed where restoration boundaries abut access paths and trails. To help control erosion until vegetation has established, biodegradable straw wattles and a hydroseed slurry (in accordance with Section 4.4 of the City's Landscape Standards; City 2016) will be installed in all temporarily impacted habitat. Native seed mixes for inclusion with the hydroseed slurry are provided in the Planting section of this Plan (Tables 3 to 8) for each vegetation community being restored. Additional erosion control will be installed and damaged erosion control will be replaced only as needed to reduce the potential for sediment movement. Fencing and wattles will be removed after sufficient vegetation has established to control erosion, as determined by the restoration specialist and City ECPD Project Manager.

Signage

Temporary signs will provide an explanation of the project and a contact number for any public inquiries. At minimum, one sign will be installed for each of the 20 restoration areas, with multiple signs placed within long, linear restoration areas. A total of 26 signs will be installed along the work area corridor. Final sign language and locations will be approved by the Parks and Recreation Department.

Documenting Pre-restoration Conditions

To document pre-restoration conditions, photos will be taken from 26 photo documentation locations representing the restoration areas and will correspond to the photo locations of the pre-impact assessment completed prior to project construction. These photo locations will be mapped using a Global Positioning System (GPS) with sub-meter accuracy.

Non-native Plant and Debris Removal

Prior to installation of irrigation and plantings, all non-native vegetation must be removed from within the restoration areas and a 10-foot buffer zone. Appropriate herbicide (e.g., only wetland approved herbicides should be used, if necessary, in the riparian restoration areas) may be used during non-native plant control, if necessary. Perennial species that resprout from the below-ground portion of the plant (e.g., fennel [*Foeniculum vulgare*]) should be cut and herbicide applied immediately to the cut stump. All large woody exotics will be cut to ground level with all above-ground portions removed from the site, and stumps will be treated with an appropriate herbicide. Any annual non-native vegetation that is flowering or fruiting will be removed by hand, immediately bagged, and removed from the site the same day. All plant material, as well as any trash and other debris removed from the project area, will be disposed of in a licensed landfill.

Irrigation Installation

Restoration areas will be temporarily irrigated such that runoff into adjacent existing and restored habitat is minimized. A few of the small restoration patches may not require irrigation, but this will need to be confirmed in the field with the restoration specialist. The irrigation method will be at the discretion of the installation contractor. Options include installation of a buried main line and temporary above-ground low-flow overhead irrigation, installation of above-ground overhead irrigation that would

be charged from a water truck, installation of buried drip irrigation, or manual watering using hoses and a water truck. The water source will be determined by the installation contractor.

Planting

Once an area has been weeded and irrigation installation is complete (as appropriate), container plantings and seed will be installed. All seed and plant material for this project will be collected or propagated from local plant populations occurring in San Diego County within 25 miles of the coast. Substitutions, other donor sites, or use of commercial material may be allowed if materials are unavailable, at the discretion of the Parks and Recreation Department and restoration specialist. Final plant and seed orders must be authorized by the restoration specialist, and all container plantings and seed must be inspected and approved by the restoration specialist prior to installation.

Seed Mixes

Restoration seed mixes are provided in Tables 6, *Riparian Seed Mix*, Table 7, *Coastal Sage Scrub Seed Mix*, Table 8, *Native Grassland Seed Mix*, Table 9, *Coast Live Oak Woodland Seed Mix*, and Table 10, *Chaparral Seed Mix,* and Table 11, *Erosion Control Seed Mix*. These seed mixes were based on the seed mixes that were installed for previous restoration efforts located in Tecolote Canyon, as well as native species that were documented in the areas proposed for temporary impacts. The erosion control seed mix will be applied to areas mapped as eucalyptus woodland and non-native vegetation/ornamental habitat. As noted in the Fencing/Erosion Control section above, seed will be mixed and applied in a hydroseed slurry in accordance with Section 4.4 of the City's Landscape Standards (City 2016).

Table 6
RIPARIAN SEED MIX (0.69 acre)
(for impacts to oak riparian forest, southern riparian forest, southern willow scrub, and mule fat scrub)

Scientific Name	Common Name	% Purity/ Germination	% Live Seed	Lbs./Acre	Total Lbs.
Ambrosia psilostachya	western ragweed	45/45	20	4	2.8
Artemisia douglasiana	Douglas' mugwort	15/40	6	6	4.1
Artemisia palmeri	San Diego sagewort	20/50	10	4	2.8
Baccharis pilularis	coyote brush	10/50	5	1	0.7
Baccharis salicifolia	mule fat	10/20	2	4	2.8
Elymus triticoides	creeping wild rye	90/80	72	4	2.8
Epilobium ciliatum	willow herb	25/50	13	1	0.7
Euthamia occidentalis	western goldenrod	24/45	11	1	0.7
Isocoma menziesii	goldenbush	18/40	7	1	0.7
Juncus acutus spp. *leopoldii*	southwestern spiny rush	95/80	76	1	0.7
Stipa lepida	foothill needlegrass	90/71	64	4	2.8
				TOTAL	**21.6**

Table 7
COASTAL SAGE SCRUB SEED MIX (3.45 acres)
(for impacts to maritime succulent scrub, Diegan coastal sage scrub, and non-native grassland)

Scientific Name	Common Name	% Purity/ Germination	% Live Seed	Lbs./Acre	Total Lbs.
Acmispon glaber	deerweed	95/80	76	0.5	1.7
Artemisia californica	California sagebrush	30/60	18	4	13.8
Bahiopsis laciniata	San Diego sunflower	31/45	14	4	13.8
Bloomeria clevelandii	San Diego golden star	NA	NA	0.5	1.7
Castilleja exserta	owl's clover	50/50	25	1	3.5
Cryptantha muricata	popcorn flower	30/60	18	1	3.5
Deinandra fasciculata	fascicled tarplant	25/65	16	3	10.4
Eriogonum fasciculatum	California buckwheat	55/20	11	6	20.7
Eriophyllum confertiflorum	golden yarrow	36/62	22	1	3.5
Mimulus aurantiacus	monkeyflower	2/75	2	2	6.9
Plantago erecta	plantain	97/89	86	4	13.8
Salvia mellifera	black sage	85/50	43	4	13.8
Sisyrinchium bellum	blue-eyed grass	98/80	78	1	3.5
Stipa lepida	foothill needlegrass	90/71	64	3	10.4
Stipa pulchra	purple needlegrass	90/75	68	3	10.4
				TOTAL	**131.4**

Table 8
NATIVE GRASSLAND SEED MIX (0.03 acre)

Scientific Name	Common Name	% Purity/ Germination	% Live Seed	Lbs./Acre	Total Lbs.
Cryptantha muricata	popcorn flower	30/60	18	3	0.1
Deinandra fasciculata	fascicled tarplant	25/65	16	3	0.1
Eriophyllum confertiflorum	golden yarrow	36/62	22	3	0.1
Eschscholzia californica	California poppy	98/80	78	3	0.1
Lasthenia californica	California goldfields	55/70	39	3	0.1
Lupinus succulentus	arroyo lupine	98/85	83	3	0.1
Plantago erecta	plantain	97/89	86	3	0.1
Sisyrinchium bellum	blue-eyed grass	98/80	76	3	0.1
Stipa lepida	foothill needlegrass	90/71	64	10	0.3
Stipa pulchra	purple needlegrass	90/75	68	10	0.3
				TOTAL	**1.4**

Table 9
COAST LIVE OAK WOODLAND UNDERSTORY SEED MIX (0.12 acre)

Scientific Name	Common Name	% Purity/ Germination	% Live Seed	Lbs./Acre	Total Lbs.
Ambrosia psilostachya	western ragweed	45/45	20	5	0.6
Artemisia palmeri	San Diego sagewort	20/50	10	5	0.6
Claytonia perfoliata ssp. perfoliata	miner's lettuce	25/55	14	2	0.2
Marah macrocarpa	wild cucumber	98/80	78	3	0.4
Rhamnus crocea	spiny redberry	83/47	40	4	0.5
Rhus integrifolia	lemonadeberry	90/77	69	4	0.5
				TOTAL	**2.8**

Table 10
CHAPARRAL SEED MIX (0.17 acre)
(for impacts to southern mixed chaparral and poison oak chaparral)

Scientific Name	Common Name	% Purity/ Germination	% Live Seed	Lbs./Acre	Total Lbs.
Adenostoma fasciculatum	chamise	85/20	17	6	1.0
Artemisia californica	California sage brush	30/60	18	5	0.9
Helianthemum scoparium	rush rose	98/80	78	4	0.7
Salvia mellifera	black sage	85/50	43	6	1.0
Stipa lepida	foothill needlegrass	90/71	64	8	1.4
				TOTAL	**5.0**

Table 11
EROSION CONTROL SEED MIX (0.41 acre)
(for impacts to eucalyptus woodland and non-native/ornamental vegetation)

Scientific Name	Common Name	% Purity/ Germination	% Live Seed	Lbs./Acre	Total Lbs.
Acmispon glaber	deerweed	95/80	76	2	0.8
Artemisia californica	California sage brush	30/60	18	3	1.2
Encelia californica	California encelia	30/45	14	3	1.2
Eriogonum fasciculatum	flat-top buckwheat	50/20	11	5	2.1
Eschscholzia californica	California poppy	98/80	78	3	1.2
Lasthenia californica	goldfields	55/70	39	3	1.2
Lupinus bicolor	miniature lupine	98/85	83	2	0.8
Lupinus succulentus	Arroyo lupine	98/85	83	3	1.2
Plantago erecta	plantain	97/89	86	3	1.2
Stipa pulchra	purple needlegrass	90/75	68	5	2.1
				TOTAL	**13.0**

Container Plantings

Plant palettes for restoration are provided in Tables 12, *Riparian Forest Plant Palette*, Table 13, *Riparian Scrub Plant Palette*, Table 14, *Coast Live Oak Woodland Plant Palette*, Table 15, *Maritime Succulent Scrub Plant Palette*, Table 16, *Diegan Coastal Sage Scrub Plant Palette*, Table 17, *Chaparral Plant Palette*, and Table 18, *Native Grassland Plant Palette*. These plant palettes were based on those installed for previous restoration and restoration efforts located in Tecolote Canyon, as well as native species that were documented in the areas proposed for temporary impacts. In addition, while these plant palettes include all species proposed for restoration of a specific vegetation community, restoration areas that overlap with the new 20-foot sewer easement will require modifications to the plant palette to include only height restricted plants, consisting of plants that will grow no higher than five feet. Height restricted plants are noted in the plant palette tables. The location of the new 20-foot sewer easement will be determined when construction plans for the replacement of the trunk sewer pipe have been finalized.

Container stock will be installed in holes that are three times the width and 1.5 times the depth of the planting container. Holes will be dug with mechanical augers where possible and by hand elsewhere. Holes must be filled with water and allowed to drain prior to installation, and, after installation, each container plant must be watered with at least one gallon of water. To aid plant establishment, plants should be inoculated with mycorrhizae by the nursery or at installation. If overhead or manual irrigation will be used, a shallow berm, approximately 12 inches in diameter should surround each planting. To protect young plants from herbivory, plant protectors may be used, as needed, at the restoration specialist's direction. Additionally, all container stock will be inspected for Argentinian ants (*Linepithema humile*).

Table 12
RIPARIAN FOREST PLANT PALETTE
(0.51 acre)

Scientific Name	Common Name	Number Per Acre	Container Size	Spacing on Center (feet)	Total Number
Artemisia palmeri[1]	San Diego sagewort	100	1-gallon	5	51
Distichlis spicata[1]	saltgrass	300	plugs	3	153
Elymus triticoides[1]	creeping wild rye	300	plugs	3	153
Isocoma menziesii[1]	goldenbush	100	1-gallon	5	51
Mimulus aurantiacus	sticky monkeyflower	100	1-gallon	5	51
Salix exigua	sand bar willow	200	1-gallon[2]	6	102
Salix gooddingii	Gooding's black willow	100	1-gallon[2]	6	51
Salix lasiolepis	arroyo willow	200	1-gallon[2]	6	102
Sambucus nigra	blue elderberry	60	1-gallon	15	31
Quercus agrifolia	coast live oak	300	1-gallon	15	153
				TOTAL	**898**

[1] Height restricted plant species allowed within 20-foot sewer easement.
[2] Live cuttings may be substituted.

Table 13
RIPARIAN SCRUB PLANT PALETTE
(0.18 acre)

Scientific Name	Common Name	Number Per Acre	Container Size	Spacing on Center (feet)	Total Number
Artemisia palmeri[1]	San Diego sagewort	100	1-gallon	5	18
Baccharis pilularis[1]	coyote brush	150	1-gallon	5	27
Baccharis salicifolia	mule fat	400	1-gallon[2]	6	72
Salix exigua	narrow-leaved willow	100	1-gallon[2]	6	18
Salix lasiolepis	arroyo willow	200	1-gallon[2]	6	36
				TOTAL	**171**

[1] Height restricted plant species allowed within 20-foot sewer easement.
[2] Live cuttings may be substituted.

Table 14
COAST LIVE OAK WOODLAND UNDERSTORY PLANT PALETTE
(0.12 acre)

Scientific Name	Common Name	Number Per Acre	Container Size	Spacing on Center (feet)	Total Number
Artemisia palmeri[1]	San Diego sagewort	200	1-gallon	5	24
Elymus triticoides[1]	creeping wild rye	300	plugs	3	36
Mimulus aurantiacus[1]	monkeyflower	200	1-gallon	5	24
Quercus dumosa	Nuttall's scrub oak	100	1-gallon	5	12
				TOTAL	**96**

[1] Height restricted plant species allowed within 20-foot sewer easement.

Table 15
MARITIME SUCCULENT SCRUB PLANT PALETTE
(0.24 acre)

Scientific Name	Common Name	Number Per Acre	Container Size	Spacing on Center (feet)	Total Number
Artemisia californica[1]	California sagebrush	150	1-gallon	5	36
Bahiopsis laciniata[1]	San Diego sunflower	100	1-gallon	5	24
Cylindropuntia prolifera[1]	coast cholla	400	1-gallon[2]	5	96
Eriogonum fasciculatum[1]	California buckwheat	150	1-gallon	5	36
Ferocactus viridescens[1]	San Diego barrel cactus	200	1-gallon	5	48
Opuntia littoralis[1]	coastal prickly pear	400	1-gallon[2]	5	96
Rhus integrifolia	lemonadeberry	100	1-gallon	10	24
				TOTAL	**360**

[1] Height restricted plant species allowed within 20-foot sewer easement.
[2] Live cuttings may be substituted.

Table 16
DIEGAN COASTAL SAGE SCRUB PLANT PALETTE
(3.21 acres)

Scientific Name	Common Name	Number Per Acre	Container Size	Spacing on Center (feet)	Total Number
Artemisia californica[1]	California sagebrush	200	1-gallon	5	642
Bahiopsis laciniata[1]	San Diego sunflower	200	1-gallon	5	642
Cylindropuntia prolifera[1]	coast cholla	60	1-gallon[2]	5	193
Eriogonum fasciculatum[1]	California buckwheat	200	1-gallon	5	642
Hesperoyucca whipplei[1]	our Lord's candle	60	1-gallon	5	193
Malosma laurina	laurel sumac	60	1-gallon	10	193
Mimulus aurantiacus[1]	monkeyflower	100	1-gallon	3	321
Opuntia littoralis[1]	coastal prickly pear	60	1-gallon[2]	5	193
Rhus integrifolia	lemonadeberry	60	1-gallon	10	193
Salvia mellifera[1]	black sage	200	1-gallon	5	642
				TOTAL	**3,854**

[1] Height restricted plant species allowed within 20-foot sewer easement.
[2] Live cuttings may be substituted.

Table 17
CHAPARRAL PLANT PALETTE
(0.17 acre)

Scientific Name	Common Name	Number Per Acre	Container Size	Spacing on Center (feet)	Total Number
Adenostoma fasciculatum	chamise	400	1-gallon	6	68
Heteromeles arbutifolia	toyon	100	1-gallon	6	17
Malosma laurina	laurel sumac	100	1-gallon	6	17
Rhus integrifolia	lemonadeberry	300	1-gallon	6	51
Salvia mellifera[1]	black sage	200	1-gallon	6	34
				TOTAL	**187**

1 Height restricted plant species allowed within 20-foot sewer easement.

Table 18
NATIVE GRASSLAND PLANT PALETTE
(0.03 acre)

Scientific Name	Common Name	Number Per Acre	Container Size	Spacing on Center (feet)	Total Number
Mimulus aurantiacus[1]	monkeyflower	68	1-gallon	3	2
Rhus trilobata[1]	basket bush	68	1-gallon	5	2
Solanum xanti[1]	purple nightshade	68	1-gallon	3	2
Stipa pulchra	purple needlegrass	300	plugs	3	9
Viguiera laciniata[1]	San Diego sunflower	68	1-gallon	5	2
Yucca whipplei[1]	our Lord's candle	68	1-gallon	5	2
				TOTAL	**19**

[1] Height restricted plant species allowed within 20-foot sewer easement.

Live Cuttings

Live cuttings may be substituted for mule fat and willow container stock. The amount of cuttings substituted for container stock shall be 50 percent more than the total specified in the plant palette (e.g., 100 container stock of arroyo willow can be substituted with 150 cuttings of arroyo willow). Cuttings can be sourced from existing mature shrubs and trees found within Tecolote Canyon. Prior to taking cuttings, all equipment being used, including buckets of water and wood cutters, will be sterilized so no pathogen cross contamination occurs. Specific cutting procedures include taking cuttings that are straight or nearly so and at least 20 inches long (or sufficiently long enough to reach the water table) and 0.5 to 1 inch in diameter. To help ensure genetic diversity within the restoration areas and limit damage to existing vegetation, no more than 10 cuttings shall be collected per individual tree or shrub. The stems shall be cut so that the bottom end is at an angle, to help identify which end to put in the ground. All cuttings shall be stripped of leaves to allow roots to develop prior to above-ground vegetation and keep the cutting from drying out, while tops shall be cut flat to distinguish the top from the bottom end. Cuttings shall be installed so that 50 to 60 percent of their total length is below grade. The ground shall be saturated prior to installation, and cuttings shall be installed immediately to avoid desiccation.

Live cuttings also may be substituted for cactus (coast cholla and coastal prickly pear). Cactus cuttings should be obtained from existing cacti populations within Tecolote Canyon and cut ends shall be allowed to dry prior to installation to reduce risk of infection or rot. The coastal prickly pear cuttings shall be installed using the following method: (1) cut off the top two paddles from a cactus branch (one cutting consists of two paddles); (2) scarify the soil where planting will occur, removing any weeds and large cobbles; (3) lay the cactus cutting flat against the soil, making sure the areoles on the underside of the paddle have contact with the soil (remove some thorns, if necessary); and (4) soak the newly installed cuttings the same day they are planted. Coast cholla cuttings can be installed using similar methods.

As-built Conditions

The Restoration Specialist shall submit a brief letter report to the appropriate regulatory agencies (USACE, RWQCB, CDFW, Parks and Recreation, and DSD), including an as-built graphic, within six weeks of completion of restoration installation. This letter will describe site preparation, installation methods, and the as-built status of the overall restoration project. Pre- and post-installation photographs taken from identified photo stations shall be included as part of the as-built report.

MAINTENANCE PROGRAM

The maintenance guidelines are tailored for native plant establishment. Maintenance personnel will be informed of the goals of the restoration effort and the maintenance requirements. A professional with experience and knowledge in native habitat restoration maintenance will supervise all maintenance. It is the maintenance contractor's responsibility to keep all seeded and planted areas free of debris, to monitor irrigation function and scheduling as well as the condition and health of all plant material, to remove non-native plant species, and to inspect and maintain any required erosion control. Maintenance of the restoration areas will be conducted by the maintenance contractor as needed to ensure restoration areas meet success criteria. At a minimum, maintenance will be conducted monthly during the 120-day PEP, at least six times per year during Year 1 through 3, and at least four times per

year in Years 4 and 5 (Table 19, *Maintenance Schedule*). The maintenance contractor will complete maintenance requests from the restoration specialist within 14 days of any written request or monitoring report.

Table 19
MAINTENANCE SCHEDULE[1,2]

Time Frame	Schedule
Installation Contractor	
120-day Plant Establishment Period	Monthly
Maintenance Contractor	
Year 1 through Year 3	Six times per year
Year 4 and Year 5	Four times per year

[1] This schedule is only a guideline; maintenance will be performed as necessary as directed by the Restoration Specialist. The entire restoration area will be serviced during each maintenance "event", which may span multiple days depending on crew size.
[2] This maintenance schedule pertains to the areas of temporary impacts that are being restored for mitigation credit. Areas of temporary impacts to non-sensitive habitats being restored for erosion control will adhere to a 25-month maintenance period.

Maintenance Activities

A five-year maintenance program will help to ensure the successful establishment and persistence of the restored habitats. The maintenance period begins on the first day following acceptance on installation and may be extended at the determination of the City ECPD. The maintenance program will involve removal of non-native species and trash, irrigation maintenance, and any remedial measures deemed necessary for successful restoration (e.g., re-seeding and re-planting). Maintenance activities will be directed by the Restoration Specialist and implemented by the maintenance contractor.

Herbicides

Any herbicides used to control non-native plants as part of the overall native habitat restoration effort must be on a Parks and Recreation Department list of approved herbicides. In addition, only those herbicides that are approved for aquatic use can be sprayed within wetland habitats (e.g., riparian restoration areas). Lastly, herbicides must be applied by an individual with a valid applicator's license, and only those individuals with an F Category on their license can use herbicides in aquatic habitats.

Non-native Plant Control

For the duration of the maintenance period, there will be a very low tolerance for non-native plant species, and removal will be conducted as necessary to minimize competition that could prevent the establishment of native species. 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, if necessary, in the riparian restoration areas). All non-native plant species shall be treated/removed prior to flowering and/or prior to attaining a height of six inches. The Restoration Specialist will oversee non-native plant removal by the maintenance contractor; however, maintenance personnel must be knowledgeable in distinguishing non-native species from desirable native vegetation.

Horticultural Treatments

No post-installation pruning is necessary unless otherwise directed by the Restoration Specialist and Project Manager. If weed control continues to be an issue, mulch application around plants may be specified by the Restoration Specialist and Project Manager. Fertilizer will not be applied except in extraordinary circumstances and only at the written direction of the Restoration Specialist and Project Manager. Shrubs and trees will be monitored for signs of disease and pests; infected and infested plants will be treated as necessary and as directed by the Restoration Specialist and Project Manager. Treatment measures may include pruning to prevent the spread of the disease or pestilence. Severely diseased or pest damaged plants will be removed and replaced if directed by the Restoration Specialist and Project Manager. Plant substitutions may be recommended if the disease is likely to affect its replacement (i.e., soil borne pathogens). Active pest control measures will be implemented if a pest species poses a competitive threat to native species establishment.

Erosion Control

During the 120-day PEP and five-year maintenance period, the installation and maintenance contractors will replace or add erosion control measures, as needed or as identified by the Restoration Specialist and City ECPD. Any installed erosion control materials will be removed from the site by the maintenance contractor once the Restoration Specialist and City ECPD determines sufficient native plant cover has established.

Trash/Debris Removal

All trash and debris will be removed from the restoration areas by the installation/maintenance contractor during each visit. Trash removal activities will minimize or avoid impacts to plants. All trash and debris will be removed and disposed of at an off-site, licensed, waste-disposal facility.

Replacement Planting and Seeding

Plantings will be replaced as needed based on biological monitoring assessments. Visual inspections conducted by the Restoration Specialist will be used to determine plant survivorship. Any losses of container stock within 120 days of installation will be replaced in-kind by the installation contractor. After 120 days, any losses for the first year will be replaced in-kind by the maintenance contractor unless it has been determined by the Restoration Specialist that use of another species and/or stock size would better achieve the restoration goals. Thereafter, plant materials will be checked as part of the monitoring program. Thereafter, if success criteria are not being met, additional measures, such as installation of replacement container plantings or additional seed, may be implemented as directed by the Restoration Specialist and City ECPD.

Site Protection and Signage; Vandalism

Perimeter fencing or staking will be maintained, as needed, until removal is authorized by the Restoration Specialist. It is likely that markers or fencing delineating the restoration areas will be needed until final sign off has been authorized.

Pedestrian access is a potential maintenance issue in some of the restoration areas. Much of the restoration areas occur along existing trails and access paths used by Park staff and the public. Fencing and/or signage is recommended in these areas.

Issues such as illegal access, off-road vehicle activity, or destruction of plant material or irrigation system, would be handled by the maintenance contractor in coordination with the City ECPD and the Restoration Specialist. Corrective and preventative actions could include irrigation repairs, additional fencing, placement of other barriers, and posting of signs that designate the site as a habitat restoration area. The cost of such repairs/work 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 and City ECPD.

Pest Management

All plantings will be inspected for evidence of pests during each maintenance event. Any pest-infested plants shall be immediately treated or replaced as needed by the installation/maintenance contractor. If herbivores are found to be a significant problem for installed plant material, the Restoration Specialist may request that container plants in the affected area be caged or similarly protected. Generally, there will be a high threshold of tolerance before other control measures are considered. As required by law, specific recommendations (e.g., for pesticide use) will be made only by a licensed pest control adviser. All applicable federal and state laws and regulations will be closely followed. The Restoration Specialist and City ECPD will be consulted on any pest control matters.

Irrigation

Temporary irrigation will be utilized within the restoration areas. The contractor will be responsible for determining the water source and maintaining the temporary irrigation system in good working order throughout the duration of the project. The goal is to obtain germination and growth with the least amount of irrigation. Frequent irrigation encourages weed invasion and leaches nutrients from the soil; therefore, water will be applied infrequently and only as needed to obtain seed germination and prevent plant and seedling mortality. Native plantings that are infrequently irrigated may grow slower initially but will ultimately be better able to withstand natural variations in rainfall and, therefore, be more successful in the long term.

Assuming cool, dry weather conditions, it is anticipated that the restoration areas would initially be irrigated daily for approximately 15 minutes. After seedlings are established, the irrigation schedule should be modified to develop deep root growth with evenly spaced, infrequent, deep applications of water (e.g., to a depth of 12 inches or more). To obtain deep penetration of water, the irrigation system may be activated several times in one 24-hour period. Irrigation will be minimized following natural rainfall events. Once the plant material is established and no longer requires supplemental irrigation, the system will be deactivated. If necessary, irrigation can be used throughout the first three years of the five-year maintenance period to help establish native vegetation. Irrigation will be discontinued at the end of Year 3, or sooner if recommended by the Restoration Specialist. The above-ground portions of the system will be removed at project sign-off.

BIOLOGICAL MONITORING PROGRAM

Monitoring visits and annual assessments will be carried out under direction of the Restoration Specialist. Biological monitoring of the restoration effort is divided into four phases: (1) pre-installation; (2) installation and establishment; (3) maintenance monitoring; and (4) annual monitoring (Table 20, *Monitoring Schedule*).

Table 20
MONITORING SCHEDULE [1]

Time Frame	Schedule
Pre-Installation/Site Preparation	
Pre-construction meeting	Once
Plant/topsoil salvage	As needed
Pre-installation photos	Once
Installation and 120-Day Plant Establishment Period	
Site preparation and installation	As needed
120-day Plant Establishment Period	Monthly
Maintenance Monitoring	
Year 1	Eight times per year
Years 2 and 3	Six times per year
Years 4 and 5	Four times per year
Annual Monitoring	
Years 1 through 5	April (1 visit per year)

[1] This schedule is only a guideline; monitoring will be performed as necessary. Restoration areas will be monitored for the full five years; revegetation areas will be monitored for 25 months.

Installation Monitoring

A restoration specialist will complete daily monitoring of all phases of the installation process (Table 17), including initial non-native plant removal, irrigation installation, quality of container plantings, and installation of container plants and hydroseed. Post-installation photos will be taken from the designated photo stations and will be used in each annual report for comparison with the respective year's annual assessment photos. The 120-day PEP will begin after the restoration specialist and City ECPD Project Manager have field verified that any irrigation and all plantings and hydroseed have been installed.

120-Day Plant Establishment Period Monitoring

Following installation, a Restoration Specialist will monitor maintenance activities conducted by the installation contractor monthly during the 120-day PEP. The Restoration Specialist will evaluate the establishment of container plantings and seed and note the presence of non-native and target invasive species that need to be removed. Sign off of the 120-day PEP by the City Parks and Recreation Department, City ECPD and DSD staff, and the Restoration Specialist will be based on a final site inspection and whether the site meets the success criteria outlined above.

Maintenance Monitoring

Following installation and the 120-day PEP, a Restoration Specialist will monitor maintenance activities conducted by the maintenance contractor during the five-year restoration period (in accordance with the schedule outlined in Table 17). Maintenance monitoring will consist of walking the entire area, making observations of native and non-native vegetation, and recording all wildlife incidentally observed or detected. This monitoring schedule is the minimum; more frequent inspections may be necessary if there are problems with contractor performance or habitat development. Monitoring memos noting any issues with plant establishment, irrigation, sediment control, etc., will be provided as necessary to the maintenance contractor, City ECPD, and City Parks and Recreation Department.

Annual Monitoring

The Restoration Specialist will conduct an annual assessment of the restoration effort in April of each year. The visits are scheduled for April to coincide with the peak of the growing season for most native herbs and shrubs. The exact timing of the visits will depend on site and weather conditions. Annual monitoring will consist of both qualitative and quantitative assessments in each of the 20 restoration areas. The qualitative assessment will include photo documentation (from the 26 established photo locations), dominant species observed, any observations of native plant recruitment, and a list of all plant and animal species observed. The quantitative assessment will include a visual estimate of native and non-native cover (annual, perennial, and invasive) rather than collection of data from transects due to the small size of each restoration area located throughout the approximately 4.7-mile long project site. Cover will be visually estimated by evaluating the proportion of the ground in each restoration area that is obscured by a species' aboveground biomass. Visual cover estimates will be completed separately for upland areas and riparian restoration areas. Cover estimates will be completed in each of the 20 general restoration areas noted in Figures 4-1 through 4-9. Photos will be included in the respective year's annual report and include comparison with the corresponding pre-impact photos.

Wildlife use of the corridor will be noted incidentally during each annual assessment by hearing species-specific vocalizations or by observing the species, or their tracks, scat, or dens. This information will be combined with observations from maintenance monitoring events and a list of all species observed during the year will be included in the annual report. No focused wildlife surveys will be conducted.

An annual report will be prepared each year during the five-year monitoring period following installation. The City ECPD will be responsible for submitting each report to agencies, including the CDFW and City (Parks and Recreation Department and DSD).

SUCCESS CRITERIA

This section provides standards to determine the successful completion of the restoration effort.

Installation

For sign off of the installation effort, the following parameters must be met: (1) temporary irrigation (where installed) must provide 100 percent coverage of the restoration and revegetation areas without any overspray or runoff into adjacent habitat; and (2) all plantings/seed must be installed. The installation contractor must provide the Restoration Specialist and City ECPD copies of the irrigation

mark-ups for approval and submittal with the as-built report. The Restoration Specialist and City ECPD must approve the irrigation system installation and oversee a coverage test for the restoration area for approval of installation.

120-Day Plant Establishment Period

Success at the end of the 120-day PEP will be met if: (1) there is 100 percent survivorship of container stock; (2) there is some evidence of establishment from seed; (3) no target invasive plant species are present; (4) any installed irrigation continues to provide adequate cover and appropriate application rates; and (5) there are no erosion-related issues or trash. Any replacement plantings added to attain the survivorship criterion must be installed for at least 30 days prior to sign off. The 120-day PEP will end when the Restoration Specialist recommends and City ECPD approves sign off of the 120-day PEP in writing. The five-year maintenance/monitoring period for the restoration area will begin following formal sign off of the PEP by the City ECPD.

Maintenance and Monitoring Period

At the end of the five-year monitoring period, restoration must attain at least 60 to 75 percent native cover, depending on habitat type, or 80 percent of the native cover documented prior to impacts (Table 21, *Success Criteria for Restoration*). The pre-impact assessment of areas that will be temporarily impacted will serve as reference data for native cover criteria. If the annual goals for native cover are not met, additional measures (e.g., re-seeding, re-planting, etc.) will be taken as necessary to ensure final success.

Table 21
SUCCESS CRITERIA FOR RESTORATION
(percent)

CRITERIA	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Native Cover Targets					
Riparian Forest/Scrub	25	35	40	50	60[2]
Coast Live Oak Woodland Understory	25	40	50	60	70[2]
Maritime Succulent Scrub	30	40	55	65	75[2]
Diegan Coastal sage scrub	30	35	55	65	75[2]
Chaparral	25	35	55	65	75[2]
Native Grassland (total/native grass)	25/10	35/12	40/15	50/20	60/20[2]
Non-native Cover Limits					
Non-native Grasses	<10	<10	<10	<10	<10
Non-native Forbs	<5	<5	<5	<5	<5
Invasive and Perennial Non-native Forbs[1]	0	0	0	0	0

[1] This does not preclude the presence of new seedlings of invasive species, which are expected to volunteer from adjacent habitat, but does require documentation of complete removal within restoration boundaries prior to dropping seed.
[2] Minimum success criteria for native cover, or 80 percent of the native cover assessed prior to impacts.

At the end of the five-year monitoring period, cover by annual non-native species such as grasses, but excluding other highly invasive species, shall account for no more than 10 percent within all restoration areas. Non-native vegetation, excluding grasses, shall account for no more than five percent within all restoration areas, and perennial non-native species shall not be allowed to persist within the restoration

areas. Plants ranked as high or moderate for invasiveness by the California Invasive Plant Council (2017) shall be eradicated from within restoration boundaries and any new volunteers shall be removed prior to seed set.

SCHEDULE OF ACTIVITIES

Table 22, *Restoration Schedule of Activities*, provides a summary of the proposed schedule of activities for the restoration areas.

Table 22
RESTORATION SCHEDULE OF ACTIVITIES

Milestone	Action
Prior to Project Construction	– Delineate limits of work – Order container plantings and seed – Salvage plants and topsoil
Within 90 Days of Project Construction Completion	– Install salvaged topsoil – Install temporary, above-grade irrigation system – Install erosion control measures – Install container plantings and salvaged plantings – Install hydroseed
Monthly During 120-Day Plant Establishment Period	– Conduct biological monitoring – Inspect plantings and adjust irrigation levels as needed based on weather conditions – Inspect area for invasive plants and control as necessary – Inspect plants for pests or disease; treat/replace as needed – Monitor irrigation system and erosion control measures; replace/repair as needed – Monitor site for trash and vandalism; remove/repair as needed – Re-seed/re-plant, as needed, to achieve milestones
120 Days after Plant Installation	– Conduct site inspection with City ECPD, P&R, and DSD – Submit biological monitoring report within 30 days of monitoring
1-3 Years after Plant Installation	– Conduct biological monitoring during the year, including qualitative and/or quantitative annual monitoring – Inspect plantings and adjust irrigation levels as needed based on weather conditions – Seed/re-plant as needed to achieve milestone – Inspect area for invasive plants and control as necessary – Inspect plants for pests or disease; treat/replace as needed – Monitor irrigation system and erosion control measures; replace/repair as needed – Cease irrigation if deemed appropriate by the restoration biologist – Monitor site for trash and vandalism; remove/repair as needed – Submit biological monitoring report within 30 days of monitoring

Table 22 (cont.)
RESTORATION SCHEDULE OF ACTIVITIES

Milestone	Action
4-5 Years after Plant Installation	– Conduct biological monitoring during the year, including quantitative annual monitoring – Inspect plantings and adjust irrigation levels as needed based on weather conditions – Inspect area for invasive plants and control as necessary – Inspect plants for pests or disease; treat/replace as needed – Monitor erosion control measures; replace/repair as needed – Monitor site for trash and vandalism; remove/repair as needed – Submit biological monitoring report within 30 days of monitoring
Prior to City and USACE/RWQCB/CDFW Approval of Restoration Area	– Submit final report – Conduct final site inspection of restoration areas with ECPD, P&R, DSD, USACE/RWQCB/CDFW, and Project Manager – Remove temporary irrigation system and any remaining fencing/BMPs

REMEDIATION MEASURES

If the restoration effort is not meeting success standards for the project, the City ECPD shall notify and propose corrective measures to the CDFW and City Parks and Recreation Department and DSD. Sufficient contingency mitigation areas are present on-site. If the success criteria are not being met on-site, the CDFW and City Parks and Recreation Department and DSD will work together with the City ECPD to reach an alternative mutually acceptable solution.

Should the restoration effort fail due to a natural disaster such as fire or flood, the City ECPD will be held responsible for replanting. The City ECPD will confer with DSD, the regulatory agencies, and City Parks and Recreation Department to determine a mutually agreeable course of action, which would be based on the goals and objectives outlined in this plan.

CONFIRMATION AND NOTIFICATION OF COMPLETION

If the restoration effort meets all success criteria at the end of the five-year maintenance and monitoring period (or sooner) and all irrigation has been discontinued for at least two years, then the restoration effort will be considered a success. If not, the City ECPD will submit a revised or supplemental restoration program to compensate for those restoration areas that were not successful. The maintenance and monitoring program will be extended one year at a time until the standards are met. Specific remedial measures (approved by the USACE, RWQCB, CDFW, and City DSD) will be used during any such extension. Monitoring extensions will be done only for areas that fail to meet final success criteria. This process will continue until all Year 5 standards are attained or until the USACE, RWQCB, CDFW, and City DSD determine that other mitigation measures are appropriate.

The City ECPD will notify and coordinate with the USACE, RWQCB, CDFW, and City DSD 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, stakes, irrigation, BMPs, and similar temporary items must be removed from the site prior to filing the notification of completion. The site may qualify for early approval if final success criteria have been met prior to Year 5 and the site is accepted as complete by the USACE, RWQCB, CDFW, and City DSD; however, the site must be off supplemental irrigation for at least two growing seasons prior to final approval.

CLOSING

Please contact me at (619) 462-1515 if you have any questions regarding this report.

Sincerely,

Laura Moreton
Biologist

Attachments:

Figure 1	Regional Location Map
Figure 2	Project Vicinity Map (USGS Topography)
Figure 3	Project Vicinity Map (Aerial Photograph)
Figures 4-1 through 4-9	Restoration/Revegetation Plan Maps

REFERENCES

American Ornithological Society. 2016. AOU Checklist of North and Middle American Birds (online checklist). Retrieved from: http://checklist.aou.org/taxa/

California Invasive Plant Council. 2017. California Invasive Plant Inventory Database. Retrieved from: http://cal-ipc.org/paf/. Accessed on July 24, 2017.

HELIX Environmental Planning, Inc. 2017. Year 5 Monitoring Report for the Central Tecolote Canyon Mitigation Project. January 6.

2006. Tecolote Canyon Natural Park Natural Resource Management Plan. Prepared for City of San Diego Park and Recreation Department, Open Space Division. March.

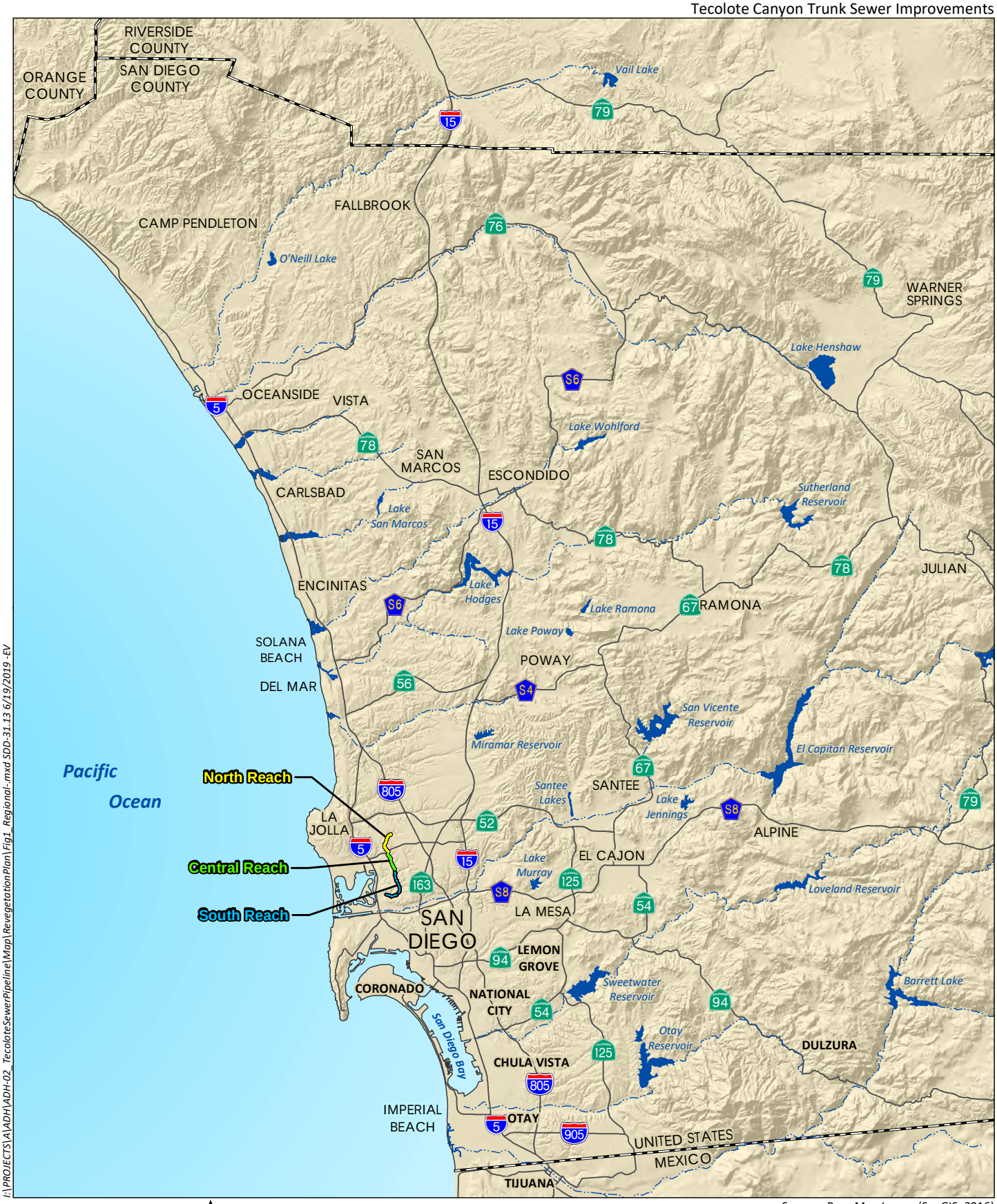
Jepson Flora Project (eds.). 2017. Jepson eFlora. Retrieved from: http://cal-ipc.org/paf/ Accessed on July 7, 2017.

Oberbauer, T., Kelly, M., and Buegge, J. 2008. Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", R.F. Holland, 1986. 73 pp.

San Diego, City of. 2016. Land Development Code Landscape Standards. Amended April 5.

2018. Land Development Code Biology Guidelines (as amended by Resolution No. R-311507). February 1.

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



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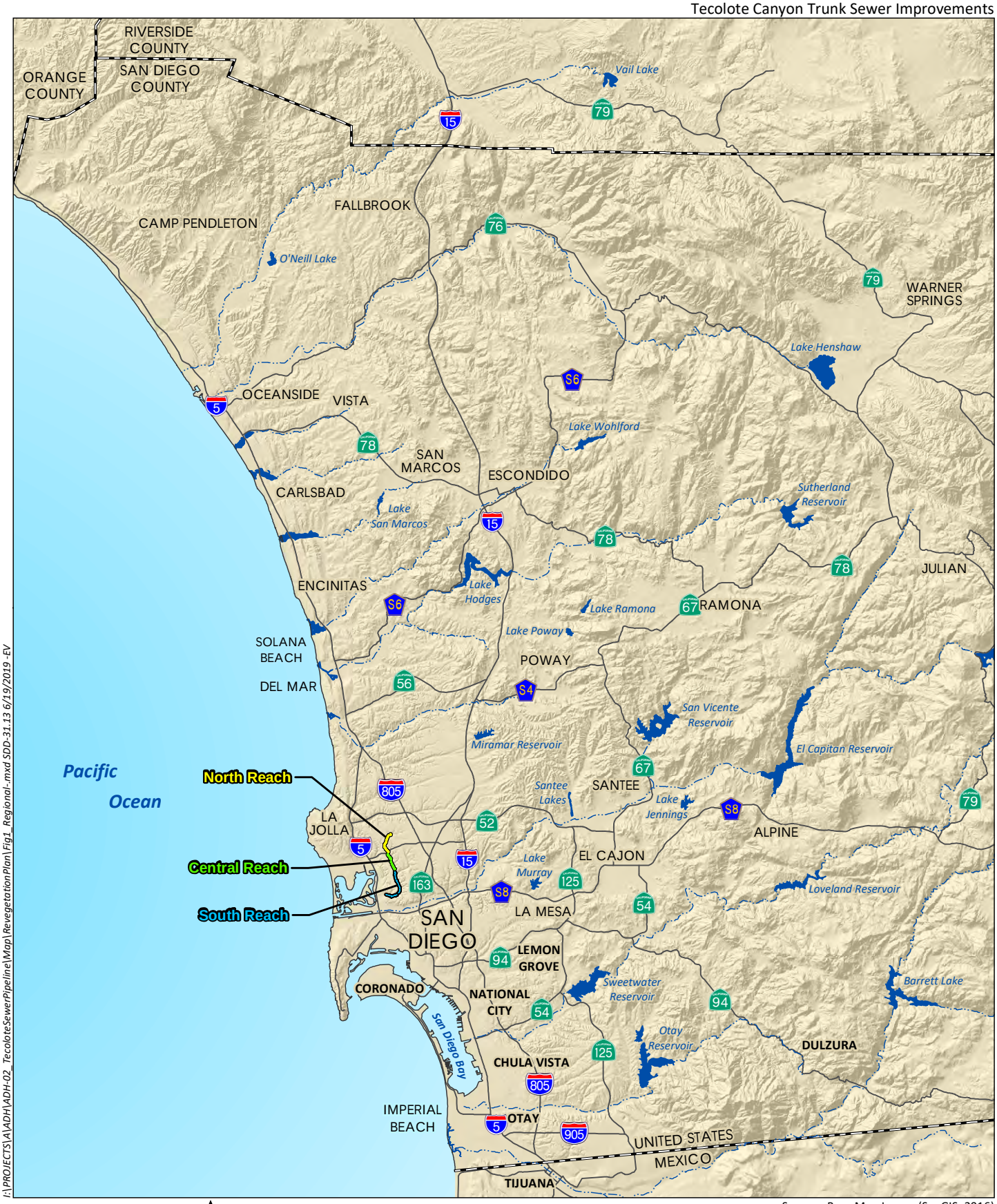
Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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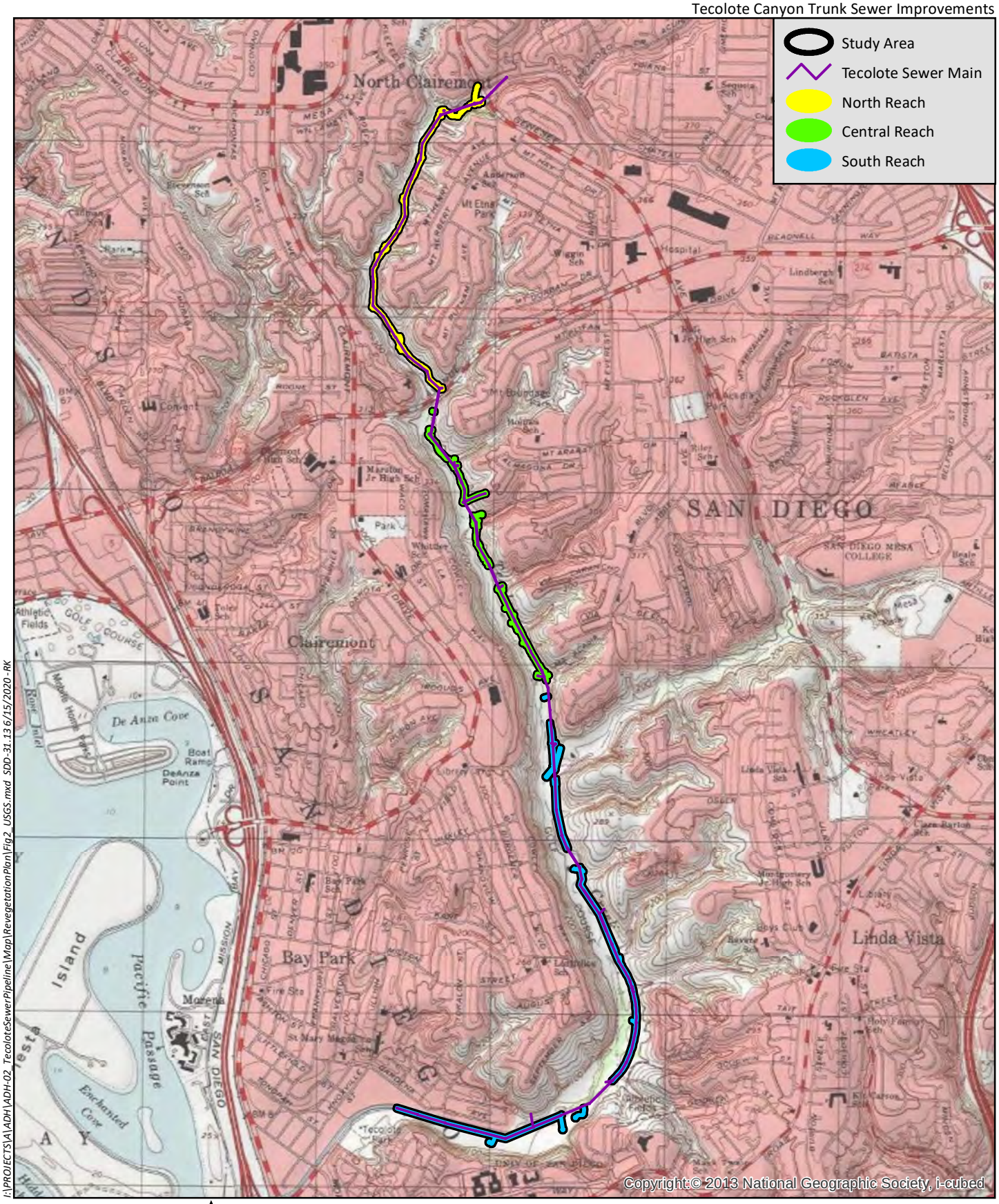
Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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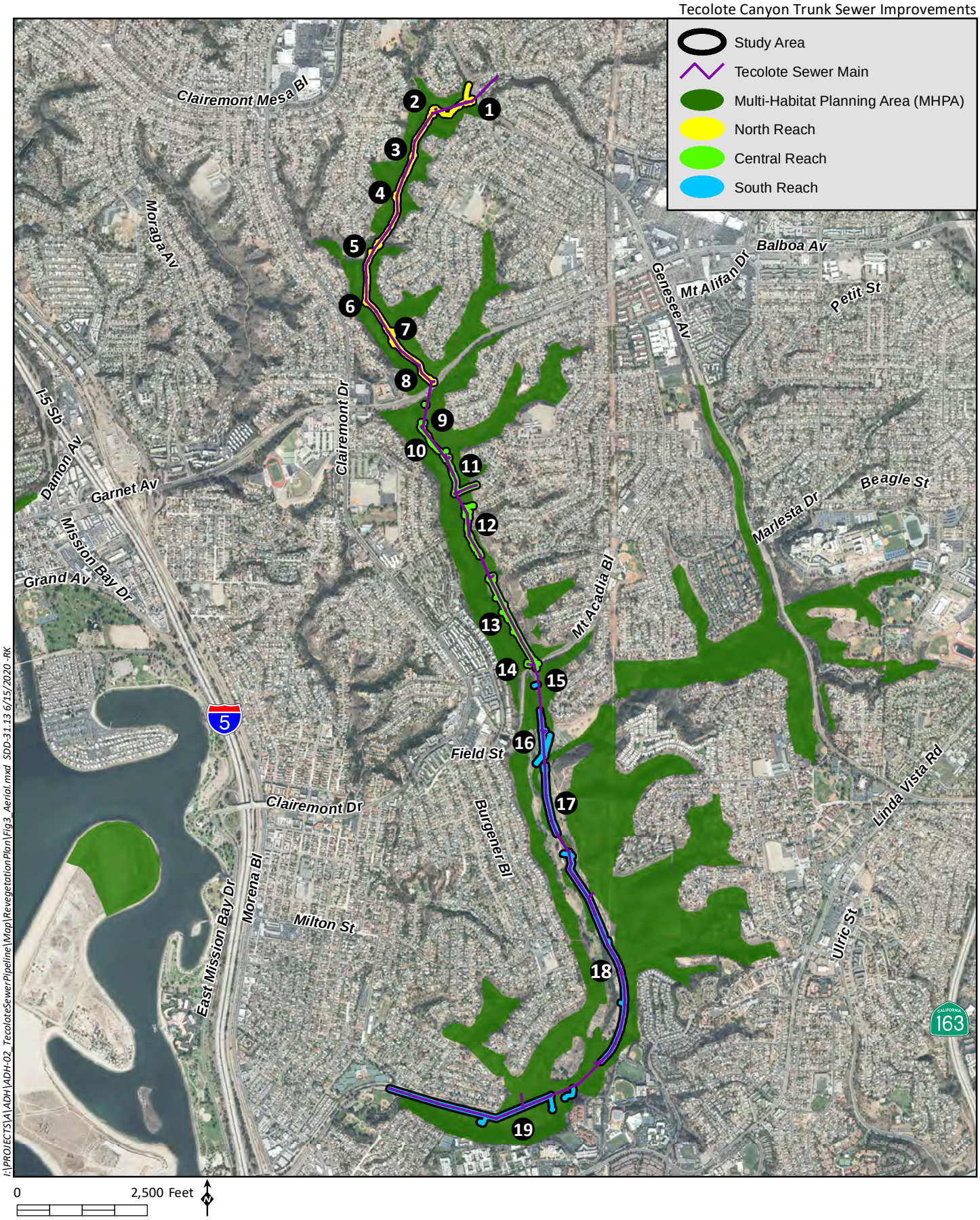
HELIX Environmental Planning

Project Vicinity Map (USGS Topography)

Figure 2



HELIX Environmental Planning

Project Vicinity Map (Aerial Photograph)

Figure 3

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Revegetation Areas

Erosion Control Areas

Chickasaw Court

Genesee Avenue

Winnebago Avenue

Chinook Court

Chateau Drive

Access Location

1

2

3

Mt Gaywas Drive

Mt Lindsey Place

Mt Lindsey Avenue

Mt Henry Avenue

Mt King Drive

Mt Herbert Avenue

Mt Etna Drive

North Reach

Central Reach

South Reach

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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-1

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Mt King Drive

Mt Highpine Place

Rolfe Road

Donald Avenue

Mt Henry Avenue

Mt Henry Place

Mt Herbert Avenue

Mt Laudo Drive

Mt Hukee Avenue

Mt Hubbard Avenue

Mt Voss Drive

4

5

6

North Reach

Central Reach

South Reach

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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-2

Tecolote Canyon Trunk Sewer Improvements

Existing Access Path

Restoration Areas

- Riparian Forest
- Riparian Scrub
- Oak Woodland
- Native Grassland
- Maritime Succulent Scrub
- Coastal Sage Scrub
- Chaparral

Revegetation Areas

- Erosion Control Areas

Mt Armet Drive

Dalles Avenue

Balboa Avenue

Access Location

Mt Alifan Drive

7

8

9

10

11

North Reach

Central Reach

South Reach

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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-3

Existing Access Path

Restoration Areas

Riparian Forest

Riparian Scrub

Oak Woodland

Maritime Succulent Scrub

Coastal Sage Scrub

Chaparral

Revegetation Areas

Erosion Control Areas

Mt Ashmun Drive

Access Location

Mt Everest Boulevard

Mt Armour Drive

12

Cowley Way

Mt Ariane Drive

Access Location

North Reach

Central Reach

South Reach

13

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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-4

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Revegetation Areas

Erosion Control Areas

13

14

15

16

Mt Acadia Boulevard

Access Location

Access Location

Via Alcazar

Burford Street

Mt Acadia Boulevard

North Reach

Central Reach

South Reach

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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-5

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Revegetation Areas

Erosion Control Areas

17

18

19

North Reach

Central Reach

South Reach

0 200 Feet

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Source: Base Map Layers (SanGIS, 2014)

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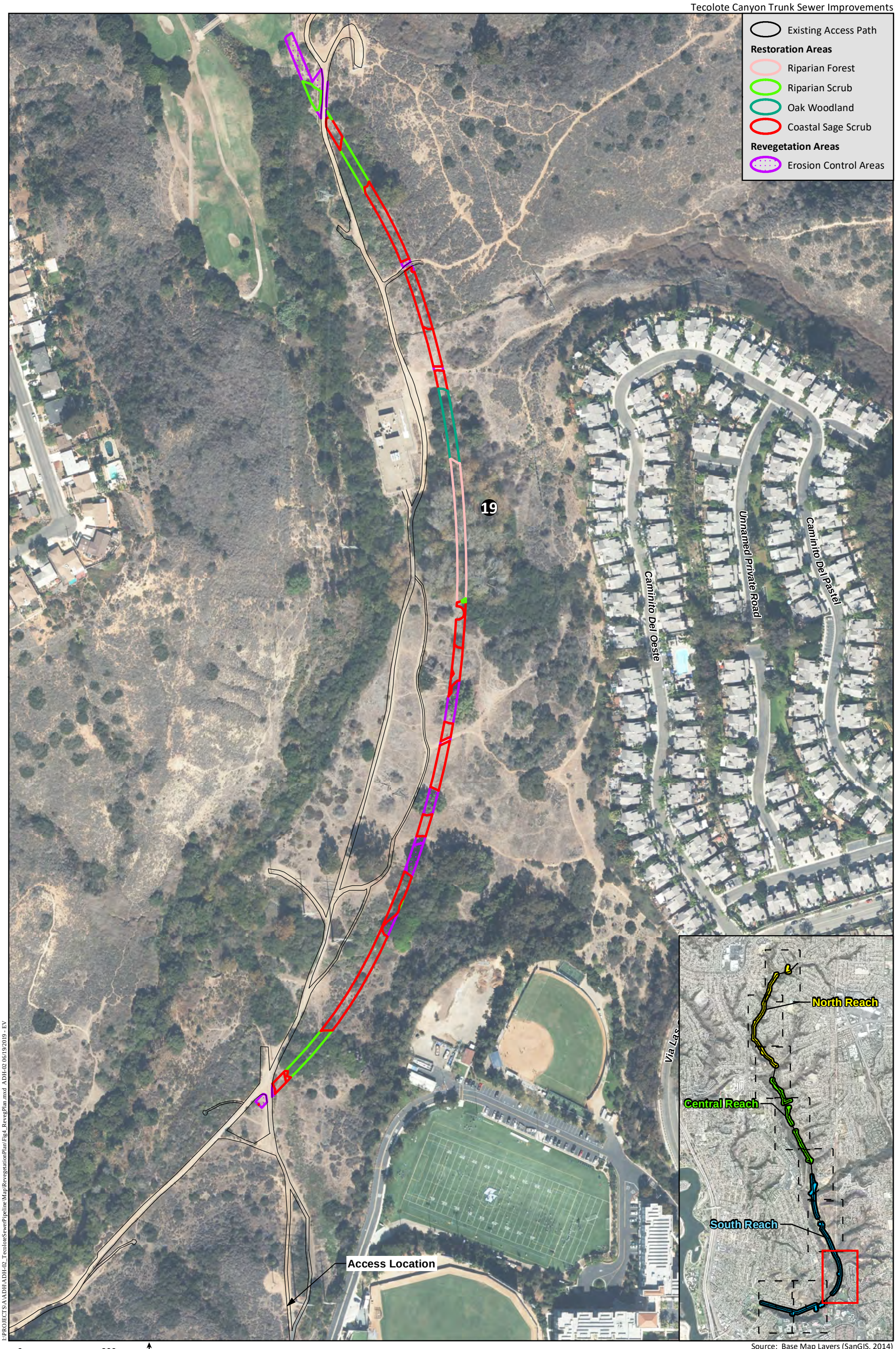
HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-6


Existing Access Path
Restoration Areas
Riparian Forest
Riparian Scrub
Oak Woodland
Coastal Sage Scrub
Revegetation Areas
Erosion Control Areas
19
Caminito Del Oeste
Unnamed Private Road
Caminito Del Pastel
Via Las
Access Location
North Reach
Central Reach
South Reach
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200 Feet
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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-8

Existing Access Path

Restoration Areas

Riparian Forest

Riparian Scrub

Oak Woodland

Coastal Sage Scrub

Chaparral

Revegetation Areas

Erosion Control Areas

Sky Street

Sparks Avenue

Gardena Place

Bonus Drive

Goldboro Street

Gasconade Avenue

Georgetown Avenue

Access Location

Gardena Avenue

20

Everview Road

Plainview Road

Elevation Road

Cushman Avenue

Marian Way

North Reach

Central Reach

South Reach

0 200 Feet

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Source: Base Map Layers (SanGIS, 2014)

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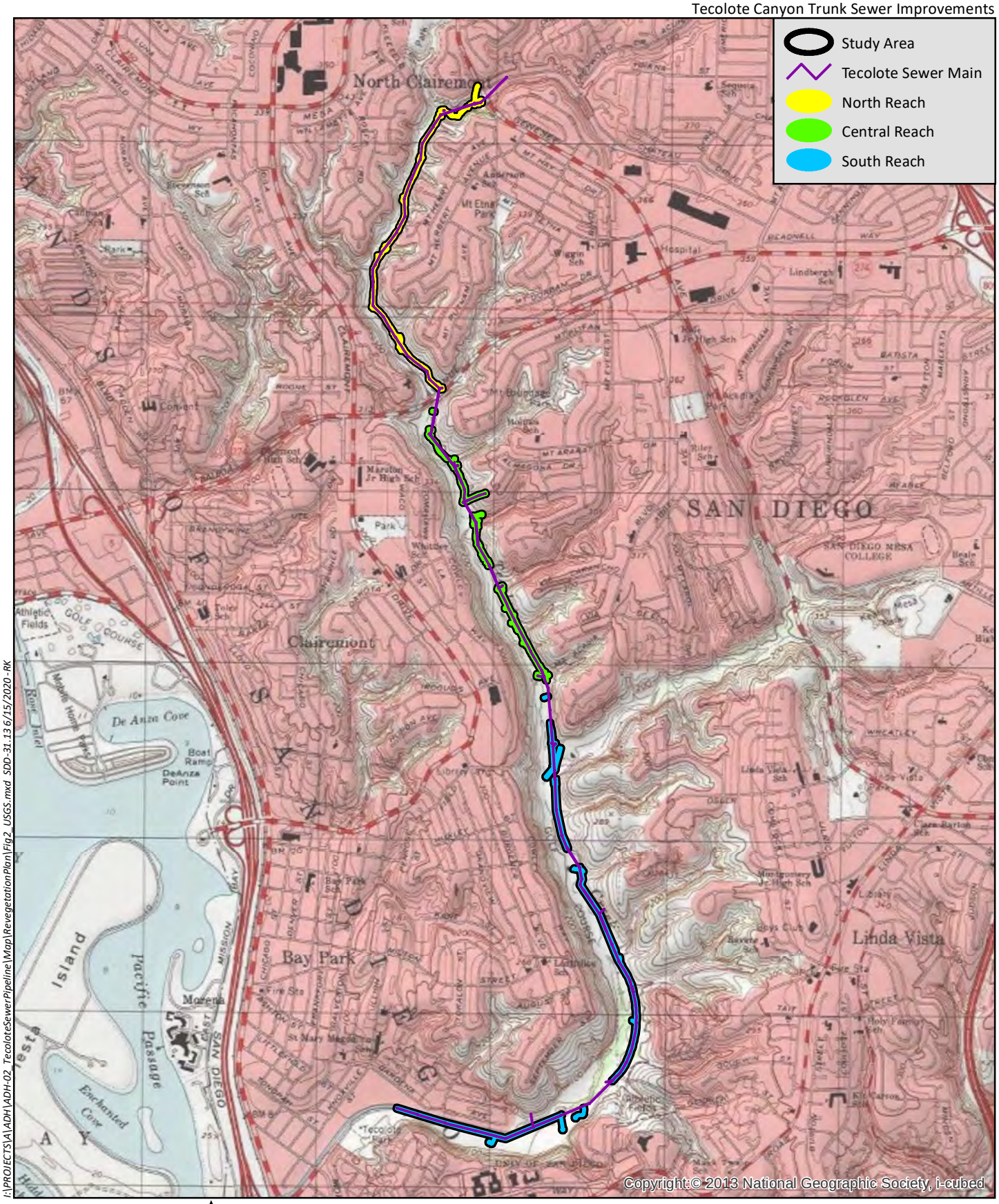
HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-9



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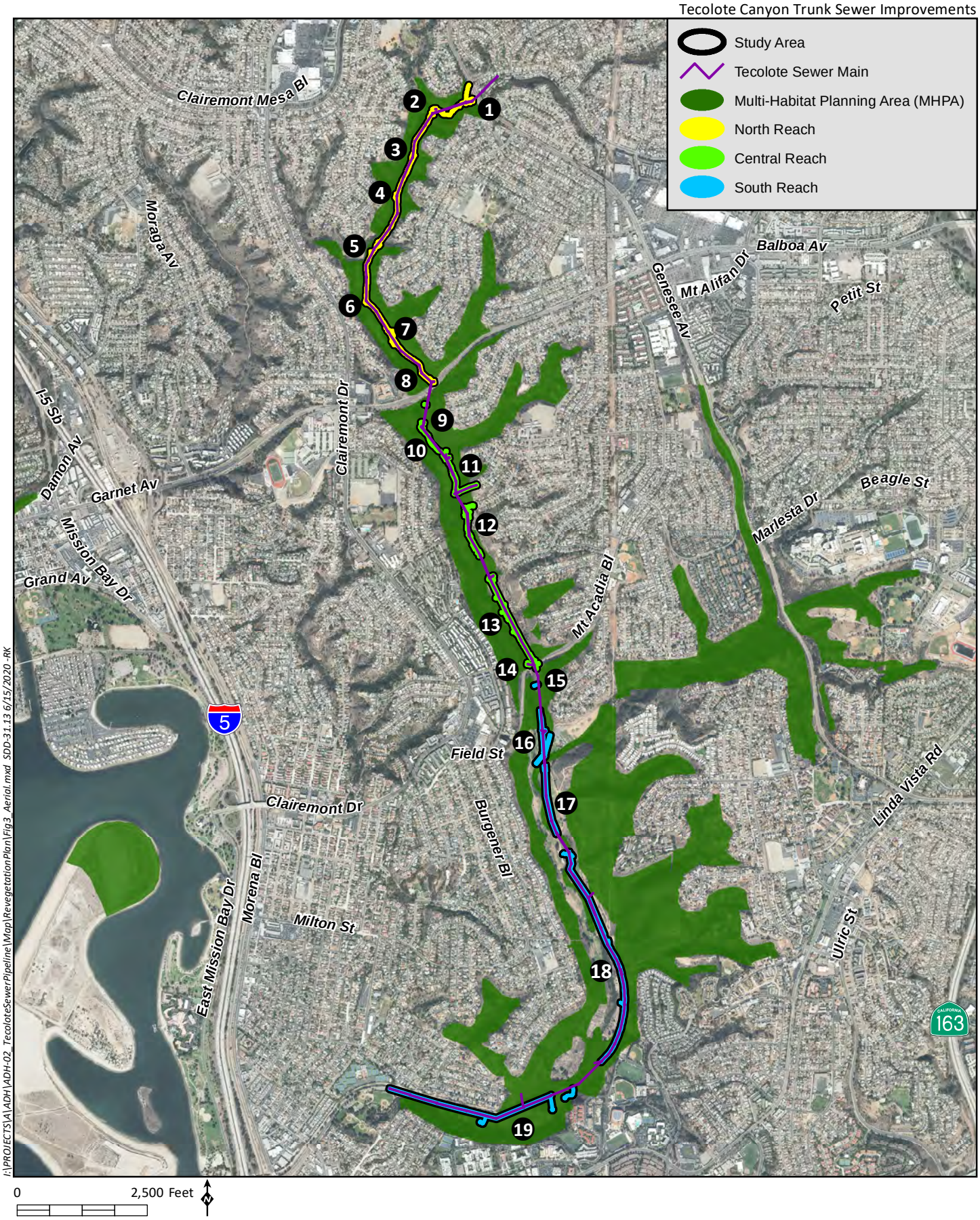
HELIX Environmental Planning

Project Vicinity Map (USGS Topography)

Figure 2



HELIX Environmental Planning

Project Vicinity Map (Aerial Photograph)

Figure 3

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Revegetation Areas

Erosion Control Areas

Chickasaw Court

Genesee Avenue

Winnebago Avenue

Chinook Court

Chateau Drive

Access Location

1

2

3

Mt Gaywas Drive

Mt Lindsey Place

Mt Lindsey Avenue

Mt Henry Avenue

Mt King Drive

Mt Herbert Avenue

Mt Etna Drive

North Reach

Central Reach

South Reach

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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-1

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Mt King Drive

Mt Highpine Place

Rolfe Road

Donald Avenue

Mt Henry Avenue

Mt Henry Place

Mt Herbert Avenue

Mt Laudo Drive

Mt Hukee Avenue

Mt Hubbard Avenue

Mt Voss Drive

4

5

6

North Reach

Central Reach

South Reach

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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-2

Tecolote Canyon Trunk Sewer Improvements

Existing Access Path

Restoration Areas

- Riparian Forest
- Riparian Scrub
- Oak Woodland
- Native Grassland
- Maritime Succulent Scrub
- Coastal Sage Scrub
- Chaparral

Revegetation Areas

- Erosion Control Areas

Mt Armet Drive

Dalles Avenue

Balboa Avenue

Access Location

Mt Alifan Drive

7

8

9

10

11

North Reach

Central Reach

South Reach

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0 200 Feet

Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-3

Existing Access Path

Restoration Areas

Riparian Forest

Riparian Scrub

Oak Woodland

Maritime Succulent Scrub

Coastal Sage Scrub

Chaparral

Revegetation Areas

Erosion Control Areas

Mt Ashmun Drive

Access Location

Mt Everest Boulevard

Mt Armour Drive

12

Cowley Way

Mt Ariane Drive

Access Location

North Reach

Central Reach

South Reach

13

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0 200 Feet

N

Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-4

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Revegetation Areas

Erosion Control Areas

13

14

15

16

Mt Acadia Boulevard

Access Location

Access Location

Via Alcazar

Burford Street

Mt Acadia Boulevard

North Reach

Central Reach

South Reach

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0 200 Feet

Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-5

Existing Access Path

Restoration Areas

Riparian Forest

Coastal Sage Scrub

Revegetation Areas

Erosion Control Areas

17

18

19

North Reach

Central Reach

South Reach

0 200 Feet

N

Source: Base Map Layers (SanGIS, 2014)

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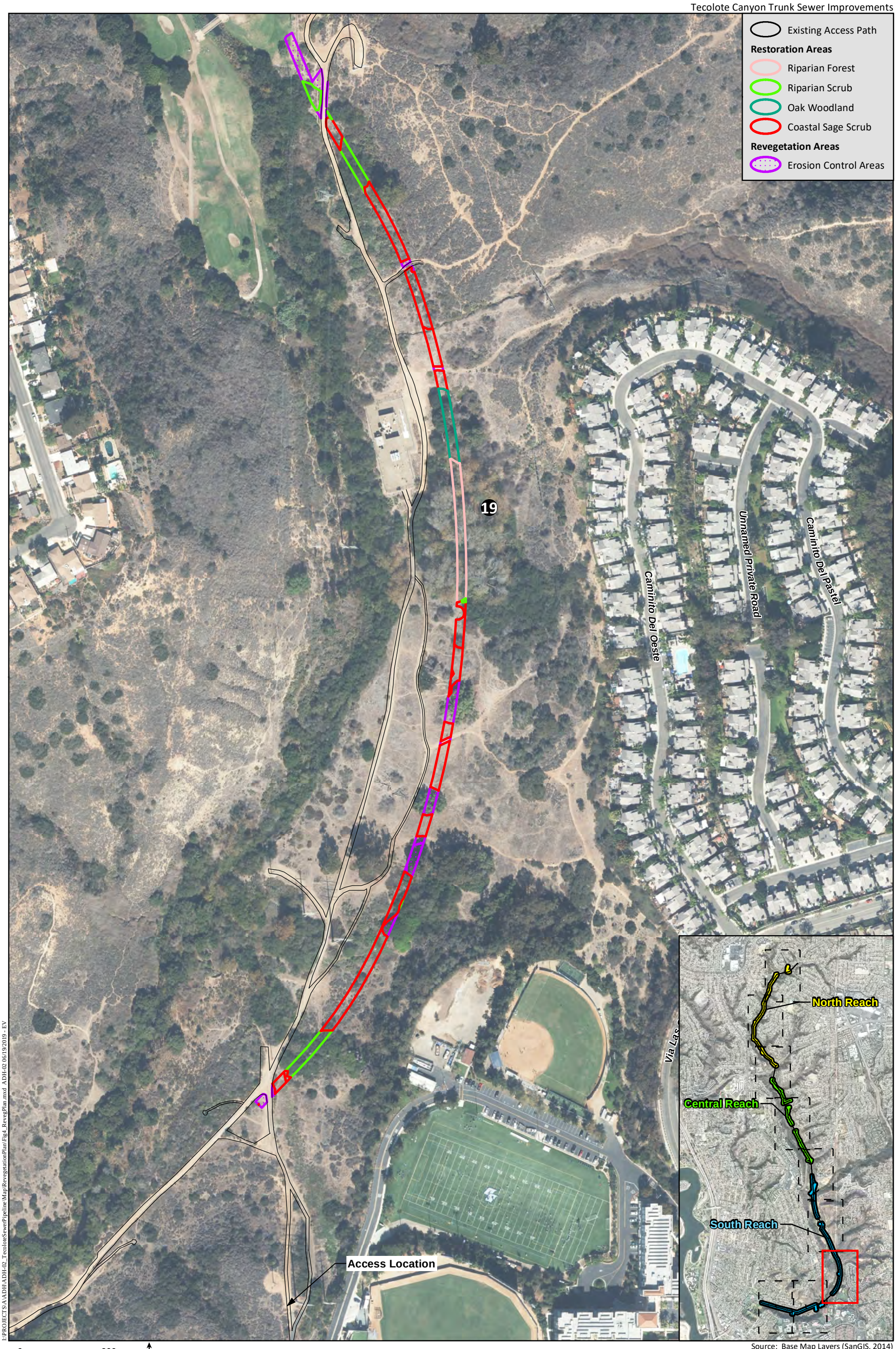
HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-6


Existing Access Path
Restoration Areas
Riparian Forest
Riparian Scrub
Oak Woodland
Coastal Sage Scrub
Revegetation Areas
Erosion Control Areas
19
Caminito Del Oeste
Unnamed Private Road
Caminito Del Pastel
Via Las
Access Location
North Reach
Central Reach
South Reach
0
200 Feet
N
Source: Base Map Layers (SanGIS, 2014)
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Source: Base Map Layers (SanGIS, 2014)

HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-8

Existing Access Path

Restoration Areas

Riparian Forest

Riparian Scrub

Oak Woodland

Coastal Sage Scrub

Chaparral

Revegetation Areas

Erosion Control Areas

Sky Street

Sparks Avenue

Gardena Place

Bonus Drive

Goldboro Street

Gasconade Avenue

Georgetown Avenue

Access Location

Gardena Avenue

20

Everview Road

Plainview Road

Elevation Road

Cushman Avenue

Marian Way

North Reach

Central Reach

South Reach

0 200 Feet

N

Source: Base Map Layers (SanGIS, 2014)

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HELIX Environmental Planning

Restoration/Revegetation Plan

Figure 4-9