City of San Diego

Serra Mesa Storm Drain & Green Infrastructure Project

(WBS# B-15099)

Biological Resources Technical Report

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EXECUTIVE SUMMARY

This Biological Resources Technical Report identifies the biological resources and potential impacts from the proposed Serra Mesa Storm Drain & Green Infrastructure Project (Project). The Project entails the replacement of five storm drain systems that have either failed, or have a high potential to fail, in the Serra Mesa Community of the City of San Diego (City). The Project involves using a "green infrastructure" approach to reduce storm water flows and non-point source pollution at four of the five locations. The proposed Project is supported and funded by the Water Infrastructure Finance and Innovation Act.

The storm drains to be replaced convey water from street inlets to outfalls at or near the bottom of nearby canyons. The water is conveyed downslope either through underground pipes across private property within existing easements or City-owned land. All the alignments are within or adjacent to the Multi-Habitat Planning Area (MHPA) of the City's Multiple Species Conservation Plan (MSCP). The 61.3-acre study area supports 16 main vegetation communities and cover types including 1.349 acres of Wetlands, 37.64 acres of Coastal Sage Scrub and subtypes, 0.15 acre of Poison Oak Chaparral, 0.06 acre of Non-Native Grassland, and 22.13 acres of Developed, Disturbed, and Non-Native Vegetation of various types.

The proposed Project would impact 0.132 acres of wetland vegetation communities, 1.12 acres of Tier II Diegan Coastal Sage Scrub, 0.03 acre of Tier IIIa Poison Oak Chaparral, and 0.02 acre of Tier IIIb Non-Native Grassland habitat that would require mitigation. This represents 1.31 acres out of a total of 3.14 acres of impacts. Approximately 1.14 acres out of the 1.31 acres of total impacts to sensitive vegetation occur in the MHPA, including all the wetland impacts (0.132 acre) and 0.95 acre of the Tier II Diegan Coastal Sage Scrub impact.

A total of 156 decumbent goldenbush (*Isocoma menziesii* var. *decumbens*) with a California Rare Plant Rank (CRPR) of 1B.2, was detected in and near the access routes to Storm Drains (SDs) 1 and 4. At SD 2, five San Diego barrel cacti (*Ferocactus viridescens*; CRPR 2B.1 and an MSCP-covered species) were detected within the potential Work Area, while habitat containing San Diego marsh-elder (*Iva hayesiana*; CRPR 2B.2) occurred within the access route to SD 2 in a storm water detention facility associated with the Stonecrest Village development. Nuttall's scrub oak (*Quercus dumosa*; CRPR 1B.1) was detected in the Study Area of SD 4 but distant from any impact area.

The federal-listed as threatened and MSCP-covered coastal California gnatcatcher (*Polioptila californica californica*) was detected within 300 feet of all the alignments and all access routes during general surveys. All impacts to sensitive vegetation, sensitive species, and jurisdictional areas, will require avoidance, minimization, and mitigation. Temporary impact areas will be revegetated as specified in the Landscape Construction Documents (Rick Engineering 2026) to be approved by the City.

All impacts (0.02 acre of permanent and 1.28 acres of temporary) to sensitive vegetation communities will also require off-site mitigation as required by City Biology Guidelines (2018).

Jurisdictional wetlands would be temporarily and unavoidably impacted to replace SD 2 and along a portion of an unvegetated cobble streambed to access SD 5. Wetland impacts at SD 1, at the head of the canyon where the drainage feature begins near the SD 1 outfall have been avoided by moving the access a few feet and protecting the wetlands with Environmentally Sensitive Area fencing per Avoidance and Minimization Measures.

Impacts to jurisdictional wetlands are approximately 0.131 acre to City wetlands, 0.054 acre to federal jurisdiction, and 0.155 acre to state jurisdiction.

Wetland mitigation will be achieved for City Wetlands at a 2:1 ratio through purchase of credits from the City's Stadium Wetland Mitigation site. Prior to contract award, the specific upland mitigation will be identified in an approved mitigation bank or payment into the City's Habitat Acquisition Fund at a 1:1 ratio.

Impacts to jurisdictional areas will require approvals from the U.S. Army Corps of Engineers, San Diego Regional Water Quality Control Board, and California Department of Fish and Wildlife. This would include notification for use of a Clean Water Act Section 404 Nationwide Permit 43, certification under Clean Water Act Section 401 Water Quality by the Regional Water Quality Control Board, and a California Fish and Game Code Section 1602 Lake and Streambed Alteration Agreement. All jurisdictional wetland impacts would require implementation of required mitigation measures.

The vast majority of the decumbent goldenbush will be avoided on the access routes to SD 1 and 4 by placing Environmentally Sensitive Area fencing around the plants and because the access routes have been moved within the Disturbed Habitat areas thus avoiding all but six out of over 150 individuals present, reducing the impacts to less than significance. The five San Diego barrel cacti located within SD 2 will be salvaged and translocated to a location near the impact areas of SD 2 or replaced during revegetation. Impacts to six individuals and 609 square feet (0.014 acre) of San Diego marsh-elder, will be offset to below significance by off-site habitat mitigation and inclusion in the plant palettes in the Landscape Construction Documents for the impacted upland and wetland areas.

Compliance with the MSCP will protect all MSCP-covered species detected in the Study Areas and habitats in the MHPA, including through compliance with MSCP General Planning Policies and Design Guidelines, MPHA Land Use Adjacency Guidelines, General Management Directives, and Special Conditions of Coverage (1997). These will protect coastal California gnatcatcher-occupied habitat during the gnatcatcher breeding season (March 1–August 15), orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), and rufous-crowned sparrow (*Aimophila ruficeps canescens*) to reduce impacts to less than significant.

Indirect impacts to the MHPA will also be avoided with application of MSCP MHPA Adjacency Guidelines (City 1997).

To avoid impacts to nesting birds, a Qualified Biologist will ensure that clearing habitat for construction occurs outside of the bird breeding season (February 1–September 15) or only after a

nesting bird survey identifies no active nests are present to comply with the Migratory Bird Treaty Act and California Fish and Game Code that protects nesting birds.

Biological monitoring by the Qualified Biologist throughout Project implementation will ensure all avoidance, minimization, and mitigation measures are applied, and the proposed Project is in compliance with the Site Development Permit conditions of approval.

As a result of all the above, impacts from the proposed Project to biological resources will be reduced to below a level of significance.

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List of Acronyms and Abbreviations

AMM	Avoidance and Minimization Measure
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of San Diego
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
CSS	Coastal Sage Scrub
CWA	Clean Water Act
dB_{leqh}	decibels, equivalent continuous sound level averaged over an hour
DCSS	Diegan coastal sage scrub
EPP	Essential Public Projects
ESL	Environmentally Sensitive Land
ft	foot/feet
I	Interstate
LUAG	Land Use Adjacency Guidelines
MHPA	Multi-Habitat Planning Area
MMC	Mitigation Monitoring Coordination
MSCP	Multiple Species Conservation Program
NNV	Non-Native Vegetation
Project	Serra Mesa Storm Drain & Green Infrastructure Project
RWQCB	Regional Water Quality Control Board
SD	Storm Drain
TDI	Tierra Data, Inc.
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

This Biological Resources Technical Report is being provided in support of the California Environmental Quality Act (CEQA) review of the proposed Serra Mesa Storm Drain & Green Infrastructure Project (Project) in the Serra Mesa Community of the City of San Diego (City). The proposed Project is supported and funded by the federal Water Infrastructure Finance and Innovation Act. This report summarizes the biological resources present at and near five storm drain alignments that are proposed to be replaced, as well as their associated temporary construction access routes. The report also addresses potential impacts to those resources and proposes avoidance, minimization, and mitigation measures as required by the City's Biology Guidelines (2018), as well as consistency with the City's Multiple Species Conservation Program (MSCP) Subarea Plan (1997).

1.1 Location

The proposed Project alignments are located east of Interstate (I) 805, west of I-15, north of Friars Road, and south of Aero Drive in the Serra Mesa Community of the City within City Council District 7 (Figure 1). The proposed Project will replace five storm drains at five locations that have failed or are in danger of failing and have caused, or might cause, significant erosion in canyon sides that could threaten homes above on the mesas (Figure 2). The locations of the five storm drains are:

1. Drain 1 – west into the canyon between Monarch and Marathon Streets.
2. Drain 2 – south of the Monarch Street cul-de-sac – down into the canyon.
3. Drain 3 – east of Shawn Avenue, from the eastern terminus into the canyon.
4. Drain 4 – southeast from Larabee Avenue into the canyon.
5. Drain 5 – to the east of Walker Drive on the street mid-loop from Larkin Place down into Ruffin Canyon.

All storm drain alignments, except for Storm Drain (SD) 1 are within the MSCP Multiple Habitat Planning Area (MHPA), though a portion of the access to SD 1 passes through a portion of the MHPA.

1.2 Project Description

The proposed Project is to replace curb intakes and storm drainpipes that take water from City streets on the developed mesas and direct it through the pipes into the canyons between the developed mesas. A new Green Infrastructure element will also be placed at the eastern end of Shawn Ave above SD 3 using a modular wetland system to pretreat and infiltrate storm water reducing pollutants entering the canyon. The storm drains will generally be replaced from the street inlets on the public streets, through easements on privately-owned property, then down canyon slopes into the canyon bottoms. Specifically:

- The SD 1 alignment is wholly within private parcels but will be accessed from Shawn Avenue via City-owned open space and through private parcels to the alignment.

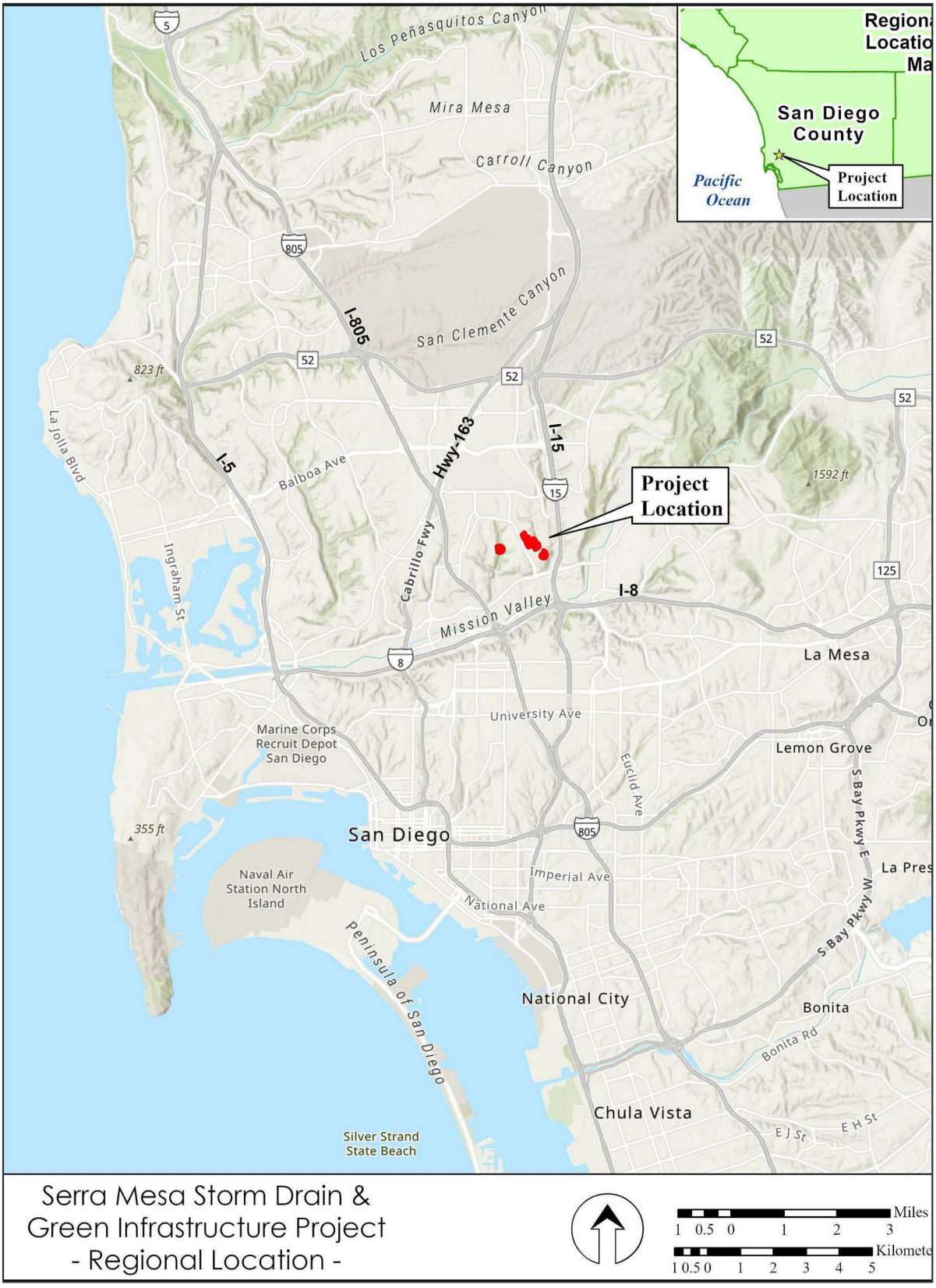


Figure 1. Proposed Project Location.

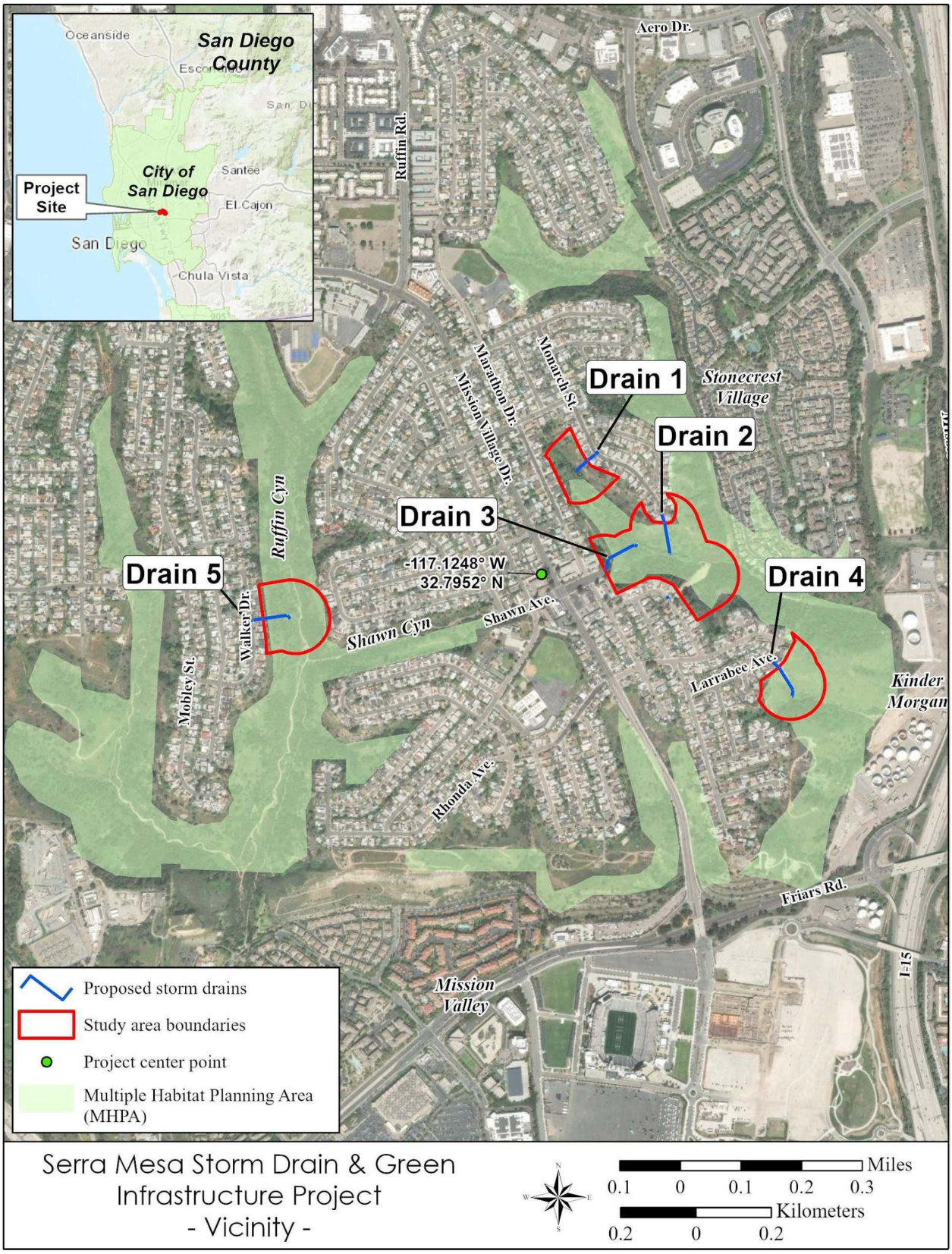


Figure 2. Proposed Project Vicinity.

- The SD 2 alignment goes from Monarch Street through private residential properties and down the City-owned open space canyon slope to the canyon bottom. Access to the alignment bottom is through the Stonecrest Village community via the extension of West Canyon Avenue at its southern end, around the paved trail from the avenue terminus to the west, then though the City-owned open space to the alignment.
- The SD 3 alignment and access, at the east end of Shawn Avenue, is wholly within the City street or City-owned open space.
- The SD 4 alignment from Larrabee Avenue is within private residential property to the boundary of the residential parcel with the canyon open space parcel owned by the City; however, most of the canyon, including the lower portion of the alignment and the access from Yolanda Avenue is privately owned by Kinder Morgan: Energy Infrastructure & Solutions (Kinder Morgan; https://www.kindermorgan.com) that includes their facility in Murphy Canyon immediately west of I-8 (Figure 2).
- Lastly, the SD 5 alignment is off Larkin Place on the west side of Ruffin Canyon passing from Larkin Place though residential parcels to the City-owned Ruffin Canyon slope. Access will occur from west end of Shawn Avenue and passes down the existing maintenance access road/trial that runs east for over 1,600 feet (ft) down the City-owned Shawn Canyon until it meets Ruffin Canyon with its north-south maintenance access road/trail. The alignment is over 350 ft north of this trail junction, west of the trail (Figure 2).

Storm drain outlets and riprap will be placed at the terminus of the storm drainpipes only for energy dissipation to slow water velocities as the water flows into the drainages in the canyons and not stabilize the creek, tributary or channel banks. Outfalls and energy dissipation features have purposefully been designed and located to avoid permanent impacts to wetlands and drainages.

Construction will require temporary vehicular access to the alignments that would include excavators, backhoes, bobcats, dump trucks, concrete trucks, and support vehicles.

Access to the improvements in the streets and between houses will be from the streets. Access to the alignments in the canyons will be from points of public access to the canyons (depicted on Figure 5 for SDs 1 and 3 and on Figure 11 for SD 5) or through gates that protect utility or facility easements from public vehicular access (depicted on Figure 7 for SD 2 and on Figure 9 for SD 4).

Portions of the access for each storm drain were designed to use existing authorized trails and/or unauthorized trails where present, but all storm drain access routes will also impact sensitive habitat. SDs 1-4 have partial access within fuel modification zones of adjacent homes and along unauthorized pathways and trails which fade out and pass through habitat as the access exits the fuel modification zones prior to reaching the storm drain alignment work areas. SD 2 access is via paved trails from West Canyon Avenue then through an existing detention basin and along a canyon bottom. SD 5 access is via a public trail until it gets close to the storm drain Work Area.

A 16-ft width is assumed to be necessary for temporary access to the base of each alignment to allow for cut and fill on slopes. At SD 2, metal plates shall be placed along the access across the detention basin to reduce compaction of the wetland vegetation. A 40-ft width is assumed to be able to construct the outfall and replace the old drainpipes from the canyon bottoms. Work will entail establishing construction machinery and materials access to the work area, excavating a trench for placement of the

drainpipe, and grading for placement of the outfall structure and riprap energy dissipaters. Staging areas will be confirmed prior to the first preconstruction meeting and are proposed for nearby streets and rights-of-way so that no additional impacts will occur (Figure 3). After storm drain replacement is complete, all areas disturbed by the replacement and temporary access will be graded back to previous contours and revegetated to replace the habitats removed/disturbed.

Revegetation Plan

Revegetation will be required in accordance with Section 1.5.2 of the MSCP Subarea Plan as detailed in Landscape Construction Documents (Rick Engineering 2026) covering all work and access route impact areas, with implementation, a 120-day Plant Establishment Period, and 25 months of maintenance and monitoring with success criteria. Revegetation and erosion control treatments will be installed within temporary disturbance areas, in accordance with the City's Biology Guidelines and Landscape Regulations (City 2018). Revegetation will feature native species that are typical of the impact vicinity, and erosion control features will include silt fence and straw fiber rolls. Sign-off will only occur once success criteria in the Revegetation Plan Landscape Construction Documents have been attained. Sensitive Plants adjacent to the access route should be flagged and avoided.

1.3 Regional and Regulatory Context

This section describes the regulatory requirements for the Project, as well as the Project's regional resource planning status. The Project is subject to CEQA, and applicable state and federal regulations. The Project site is located within the City of San Diego, which is covered by the City's MSCP Subarea Plan (City 1997).

1.3.1 California Environmental Quality Act

The City is the Lead Agency for the proposed Project. This report will provide information relative to biological issues and will assess the Project impacts against the City's CEQA thresholds of significance for biological resources (City 2022). Pursuant to Appendix G Section IV of the CEQA Guidelines, a Project site for a proposed Project would need to support one or more of the following sensitive biological resources, as only adverse effects to them would be significant.

a) Any candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW);
b) Any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by USFWS or CDFW;
c) Federally protected wetlands as defined by the Clean Water Act (CWA) Section 404;
d) Any movement or migratory wildlife corridors for native resident, migratory fish or wildlife species, or native wildlife nursery sites;
e) Biological resources protected by any local policies or ordinances, such as a tree preservation policy or ordinance; or
f) Biological resources that would contribute to formation of local preserve areas per an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state conservation plan.

1.3.2 Federal and State Regulations

Regulations that apply to the Project site include the federal and California Endangered Species Acts, Migratory Bird Treaty Act, California Fish and Game Code, federal CWA, and CEQA. Because impacts to jurisdictional areas are anticipated, a U.S. Army Corps of Engineers (USACE) CWA Section 404 Permit, a San Diego Regional Water Quality Control Board (RWQCB) CWA Section 401 Certification, and California Fish and Game Code Section 1602 Streambed Alteration Agreement will be required.

The Migratory Bird Treaty Act prohibits the "take" of any migratory bird, part, nest, or eggs and is implemented using Section 10.12 of the USFWS's Migratory Bird Treaty Act regulations which defines "take" as to: pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities. A "take" does not include habitat destruction or alteration, as long as there is not a direct "take" of birds, active nests, eggs, or parts thereof.

Pursuant to Section 3503, 3503.5, 3505, and 3513 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the active nest or eggs of any bird. The California Fish and Game Code defines "take" as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

1.3.3 City of San Diego MSCP

In July 1997, the USFWS, California Department of Fish and Game (now CDFW as of January 1, 2013), and City adopted the Implementing Agreement for the MSCP (City 1997). This program allows the incidental take of threatened and endangered species as well as regionally sensitive species that are otherwise adequately conserved. The program designates regional preserves intended to be mostly void of development activities while allowing development of other areas subject to program requirements.

The City's MSCP Subarea Plan was prepared to meet the requirements of the California Natural Communities Conservation Planning Act of 1992 and to be consistent with the federal and California Endangered Species Acts. This Subarea Plan describes how the City's portion of the MSCP Preserve (the MHPA) will be implemented. Refer to Section 4.0 MSCP Consistency Analysis for full compliance measures.

1.3.4 City of San Diego Development Regulations

The City regulates development of sensitive biological resources through the Land Development Code. A Site Development Permit is required for this project. Mitigation requirements for sensitive resources discussed in this document follow requirements of the City's Biology Guidelines (2018) as outlined in the City's Environmentally Sensitive Lands (ESL) regulations, which have the purpose to "protect, preserve and, where damaged restore, the ESLs of San Diego and the viability of the species supported by those lands." ESLs are defined to include sensitive biological resources, steep hillsides, coastal beaches, sensitive coastal bluffs, and 100-year floodplains. The City's Biology Guidelines also allow for deviations from its wetland requirements in ESLs under specific circumstances which are applicable to this proposed Project if appropriate findings can be made.



Figure 3. Project Features.

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2.0 METHODS

2.1 Surveys

Prior to performing the vegetation mapping, general wildlife and rare plant field surveys, a California Natural Diversity Database (search was conducted to identify sensitive plant and wildlife species historically noted in the vicinity of the proposed Project sites (5-mile radius; CDFW 2025). Prior to the wetlands surveys and delineations, a search was conducted in the National Wetlands Inventory (USFWS), Web Soil Survey (Natural Resources Conservation Service), and floodplain maps (Federal Emergency Management Agency) in 2016, 2022, and 2025. Site visits and surveys were conducted by Tierra Data, Inc. (TDI) Biologists over a nine-year period. The original surveys were performed in 2016 and 2017. Because more than two years had passed since those surveys were performed, additional surveys were required to update information on-site conditions in 2022, and again in 2025. Dates of surveys are provided in Table 1.

Table 1. Survey Dates and Details.

Date	Personnel	Conditions	Type Of Survey
8/23/16, 8/24/16	DL, JK	08:30 – 15:00, cloud clearing to sun 07:15 – 13:00, cloud clearing to sun	Vegetation Mapping, general wildlife survey of alignments 1-7 plus 300-ft buffers
11/9/16, 12/15/16	DL, JK	08:30 – 15:30, clear and sunny 11:30 – 15:00, cloudy all day	Jurisdictional Delineation of potentially affected features
4/13/17, 4/20/17	DL, JK	08:00 – 16:00, cloud clearing to sun 07:30 – 10:30, clear and sunny	Rare Plant Surveys of alignments
8/7/17, 8/11/17	DL, JK	10:00 -16:30, clear and sunny 08:00 – 12:30. Partly cloudy to sunny	Additional Jurisdictional Delineation of potentially affected features
8/30/22, 8/31/22	DL, DU	11:30-16:00, clear and sunny 09:30 – 11:00, clear and sunny	Vegetation Mapping Update for reduced project (six storm drains)
8/31/22, 9/22/22	DL, DU	11:00 – 15:30, clear and sunny 09:00 – 14:00, clear and sunny	Aquatic Resources Delineation Update to check for changes since 2017
6/5/25, 6/9/25	DL, DU	10:00 – 17:00, cloudy to partly cloudy 10:00 – 15:30, Cloudy, clearing to sunny	Vegetation Mapping & Aquatic Resources Delineation Updates for the new five storm drain project

Note:

DL = Derek Langsford, JK = Joseph Kean, DU = Diego Uribe

2.2 Limitations

Vegetation mapping and general biological surveys of the project Study Area (alignments and accesses plus a 300-ft buffer) occurred generally at times of year when most plants and diurnal animals would be detectable. Focused rare plant surveys occurred at optimal or near optimal times to see most special status plant species. The buffers were mainly assessed from the alignment, mostly for birds which could be indirectly affected by construction. Vegetation, if otherwise inaccessible, was identified from vantage points or using aerial imagery if not visible. The aquatic resources delineation work was mostly performed when drainages were in their low flow, summer/fall condition.

No protocol surveys were performed as no habitat was present for listed species other than the coastal California gnatcatcher (CAGN; *Polioptila californica californica*). CAGN are relatively easy to identify from their call, and so presence was expected to be detected during surveys. Because CAGN were detected in all areas but Shawn Canyon, presence of CAGN is assumed for all other areas of the proposed Project.

Species that were unlikely to be detected include fossorial animals (mice, voles, snakes), amphibians if in the dry season, crepuscular species (coyotes, foxes, jackrabbits, skunks, opossums), and species active at night (bats, owls, nightjars, night lizards).

Access to the storm drain alignments was from public streets for SDs 1, 3, and 5, via a path off West Canyon Avenue in the Stonecrest Village Community for SD 2, and through the Kinder Morgan locked gate at the end of Yolanda Avene for SD 4.

All of the storm drain alignments are located at least partly within sensitive native vegetation, with some being denser (SDs 2, 3, and 5) than the others (SDs 1 and 4). SD 4 experienced a blowout in Spring 2023, so the alignment is mostly a hole in the canyon side and eroded soil. Access to the outfalls ranged from being easy (SDs 1 and 5), moderate (SD 2), to hard (SDs 3 and 4). The outfall area for SD 3 could not be reached in 2025 because of fallen adult Mexican fan palms (*Washingtonia robusta*) and a carpet of palm fronds covering the drainage area in the steep-sided canyon bottom. For SD 4, the outfall location area was within eroded soil beneath Brazilian pepper trees (*Schinus terebinthifolius*) down a steep slope from the access.

3.0 RESULTS

3.1 Physical Characteristics

The Serra Mesa Community exists on ridges and mesas above canyons to the north of the San Diego River Valley to which water drains from the community. The canyons trend generally north to south with finger canyons branching east and west rising up to the mesas and ridges. The developed portions of the mesas range from approximately 300 to 400 ft above mean sea level, whereas the mostly undeveloped canyons vary from approximately 100 to 300 ft above mean sea level depending on the canyon and location.

The area under study is within the Stadium Conglomerate geologic formation characterized by large cobbles in a coarse sandstone matrix overlain by Mission Valley Formation sandstone. U.S. Department of Agriculture (2025) identifies the area as having Olivenhain, Redding, and Terrace Escarpment soils:

- **Olivenhain Series:** The Olivenhain series is a member of the clayey-skeletal, kaolinitic, thermic family of Ultic Palexeralfs. Typically, Olivenhain soils have brown and reddish brown, medium acid, very cobbly loam A horizons, reddish brown and red, medium and strongly acid, very cobbly clay B2t horizons, grading to pinkish white cobbly loam C horizons. Olivenhain soils are gently sloping to strongly sloping and are on dissected marine terraces at elevations of 100 to 600 ft. The climate is dry subhumid mesothermal. Summers are warm and dry, and winters are cool and moist. Olivenhain cobbly loam soil, as is present in the area, can be hydric in depressions when ponding occurs.
- **Redding Series:** The Redding series are fine, mixed, active, thermic Abruptic Durixeralfs and consist of moderately deep to duripan, well or moderately well drained soils that formed in alluvium derived from mixed sources. They are on nearly level or dissected and undulating to hilly high terraces. Redding gravelly loam soil, as is present in the area, can be hydric in depressions when ponding occurs.
- **Terrace Escarpments** are undifferentiated soils of variable composition.

The Olivenhain and Redding Series soils that can become hydric if water ponds in depressions (U.S. Department of Agriculture 2025). Specifically, the sites support Olivenhain cobbly loam, 9 to 30 percent (%) slopes (OhE), Olivenhain cobbly loam, 30 to 50% slopes (OkF), Redding gravelly loam, 2 to 9% slopes (RdC), Redding-Urban land complex, 2 to 9% slopes (RhC), as well as Terrace Escarpments (TeF).

Historically, most of the Serra Mesa Community was developed in the late 1950s/early 1960s (Historic Aerials 2026). Prior to 1953, the area was largely undisturbed with mesas supporting vernal pools and more heavily vegetated canyons with some agricultural operations in Murphy Canyon and Mission Valley. Highway 395 and Friars Road were built by then, but only a few unpaved roads occurred on Serra Mesa. By 1964, most of the Serra Mesa Community was developed as was I-15. The last homes of the era, on Podell Avenue and Goodwick Court south of Yolanda Avenue, were under construction. The mesa that would ultimately become the Stonecrest Village Community was cleared but not developed. Grading for that development started in 1996 and the community, including storm water management facilities, was constructed by 2000 (Google Earth 2026).

3.2 Environmental Setting

The proposed Project occurs within the canyons of Serra Mesa Community, a residential neighborhood developed on ridges and mesas north of Mission Valley and the San Diego River. While the mesas are developed, the canyons are mostly natural and protected by biological open space designations. The canyons have generally steep to very steep slopes (25-50%) that were either previously graded at the time of development or were left in a natural condition (Historic Aerials 2026; Google Earth 2026).

This portion of the Serra Mesa Community is bounded by Friars Road and Mission Valley to the south, Aero Drive and Montgomery Field to the north, Murphy Canyon, and I-15 to the east, and I-805 to the west.

The mesas are developed with residential housing and streets. The canyon slopes support a variety of vegetation communities dominated by Diegan coastal sage scrub (DCSS; Holland 1986; Oberbauer et al. 2008) of different varieties. In the canyon bottoms, water from various sources has combined to form channels, some of which carry water almost year-round that has allowed mostly exotic species to proliferate.

The area is within the regional MSCP Plan (City 1998) and the City's MSCP Subarea Plan area (City 1997). The canyons within the Serra Mesa Community are mostly designated as MHPA within the City's MSCP Subarea Plan (see Figure 2). The storm drain locations relative to the wetlands in each canyon as identified in the National Wetland Inventory (USFWS 2025a) is provided in Figure 4.

3.3 Biological Resources

The biological surveys identified several different vegetation communities, jurisdictional features, sensitive plants, and sensitive animals that could be affected by the Project. All alignments were visited from top to bottom of the canyon slopes as far as terrain and vegetation allowed, including an area of approximately 300 ft from all proposed alignments and access routes. The 2022 and 2025 surveys revisited all alignments and access routes to document any changes to extant resources.

3.3.1 Vegetation Communities

Vegetation Communities were mapped using Holland Code Vegetation Communities (Holland 1986; Oberbauer et al. 2008) with mapping units of 0.25 acre or less. The area under study contains a variety of communities but is mostly dominated by Tier II DCSS that varies in species composition but is most common in its archetypal form or dominated by lemonadeberry (*Rhus integrifolia*), as well as Baccharis-dominated and disturbed DCSS areas (Figure 5-Figure 12; Table 2).

Wetlands communities include Freshwater Marsh and Herbaceous Wetland, both of which were artificially created, though some are naturally maintained, others artificially through irrigation (Figure 7). Riparian Woodland and Mule Fat Scrub are also present (Figure 11).

Patches of monotypic poison oak chaparral are the only Tier IIIa habitat present in the study area, near SDs 2 and 3 (Figure 5, Figure 7). Tier IIIb Non-Native Grassland (NNG) occurs at SD 5 (Figure 11).

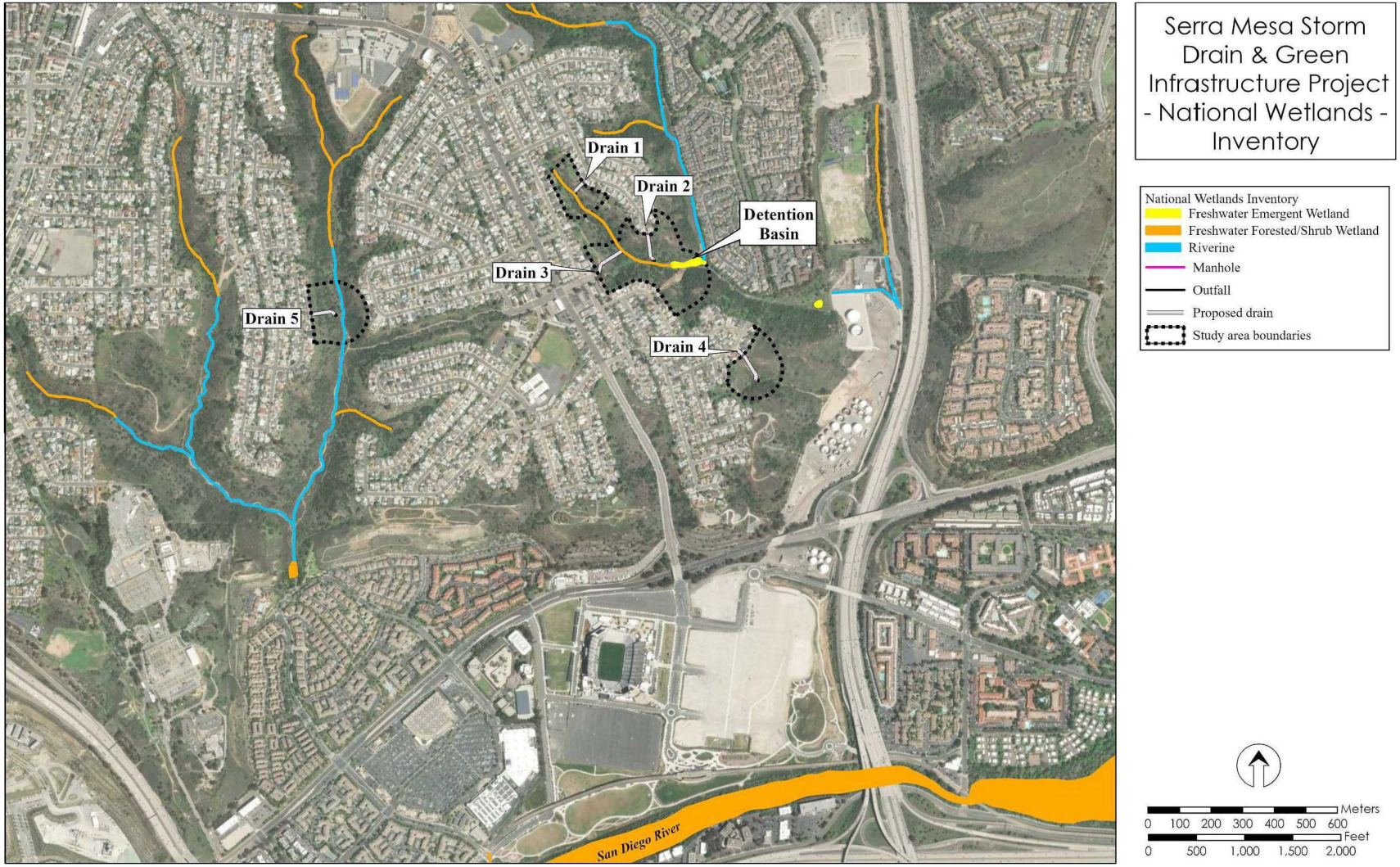


Figure 4. Overview of Study Areas and National Wetland Inventory Wetlands.

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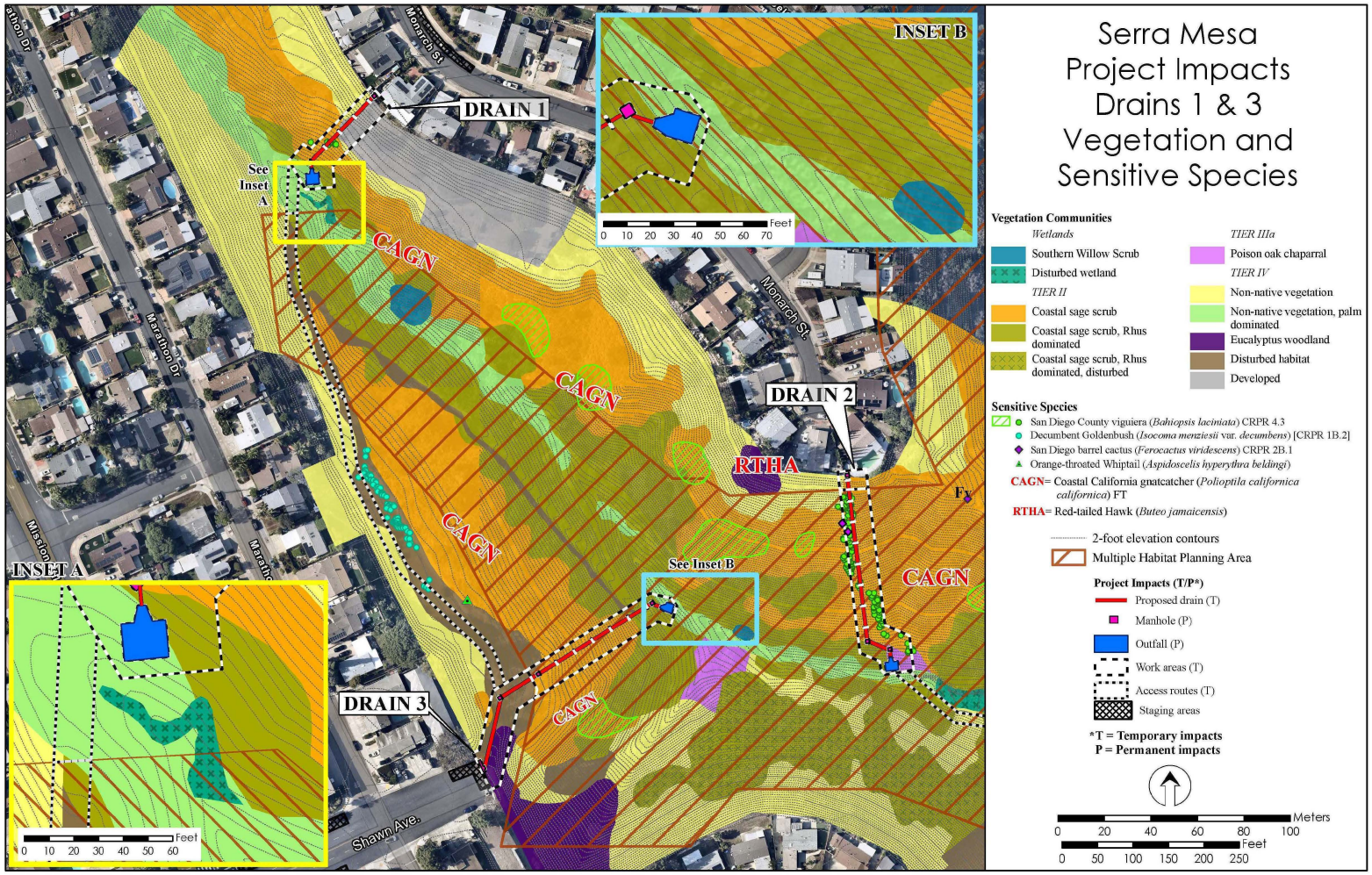


Figure 5. SDs 1 and 3 Biological Resources & Impacts.

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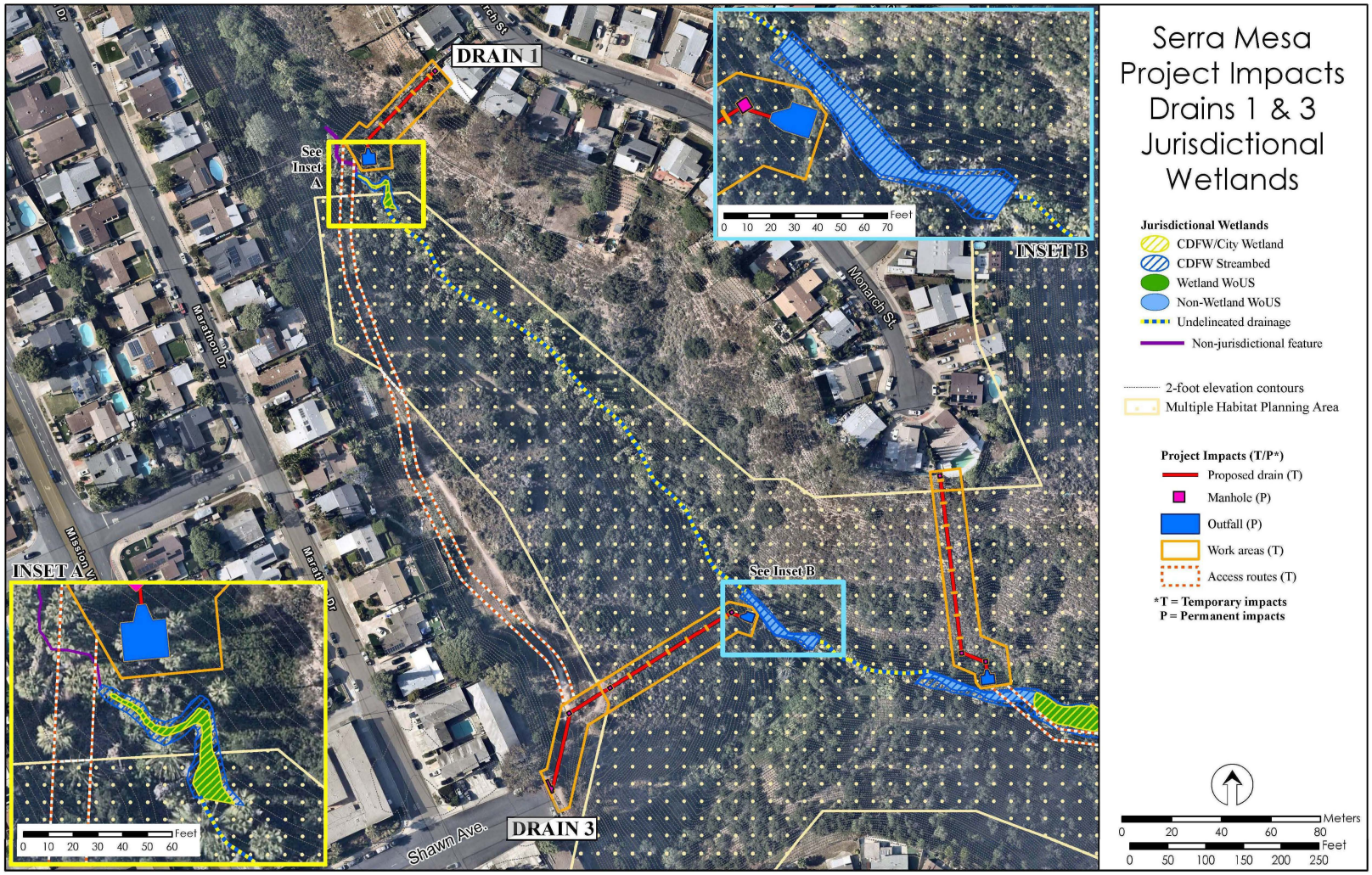


Figure 6. SDs 1 and 3 Jurisdictional Wetlands.

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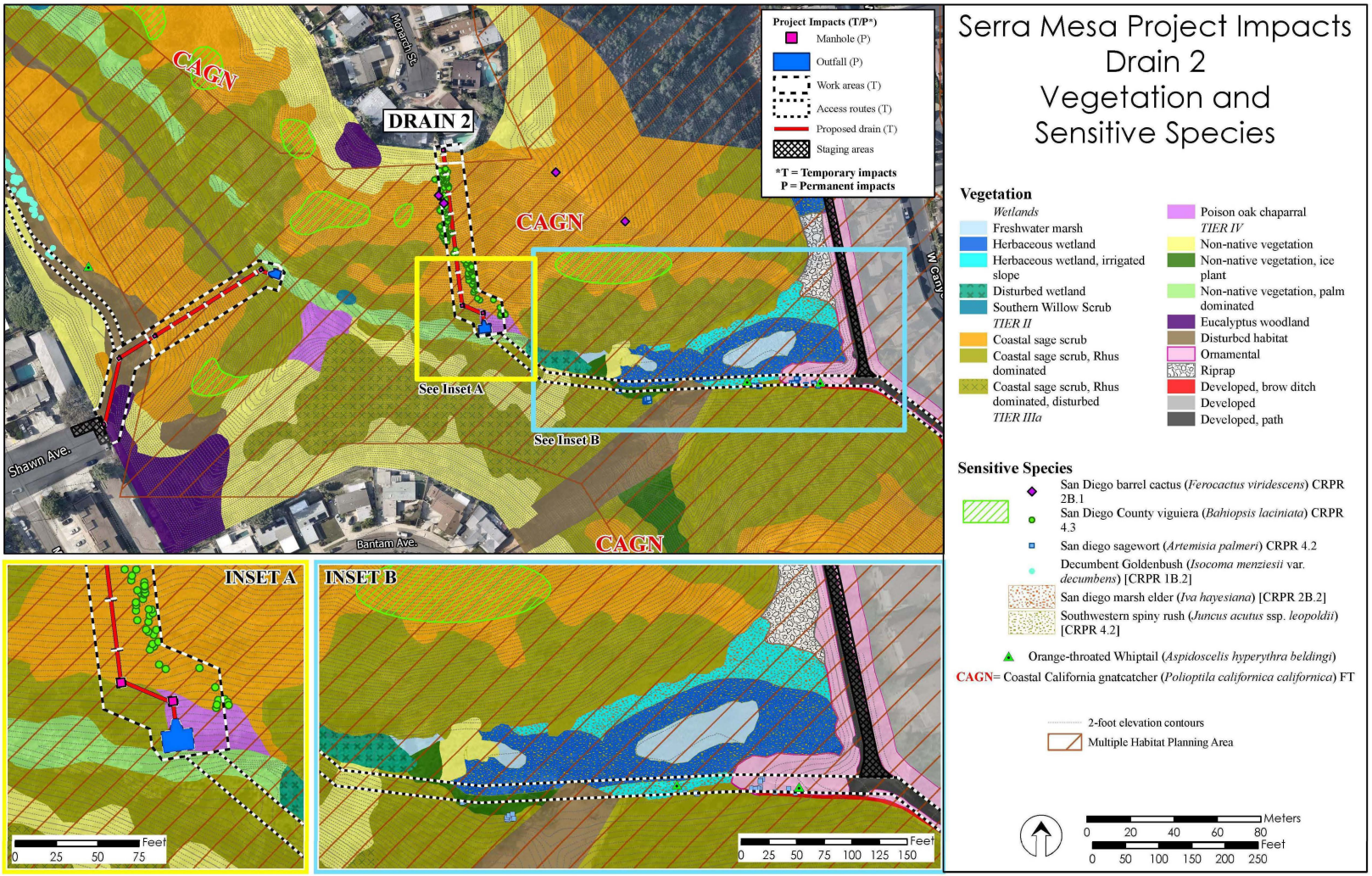


Figure 7. SD 2 Biological Resources & Impacts.

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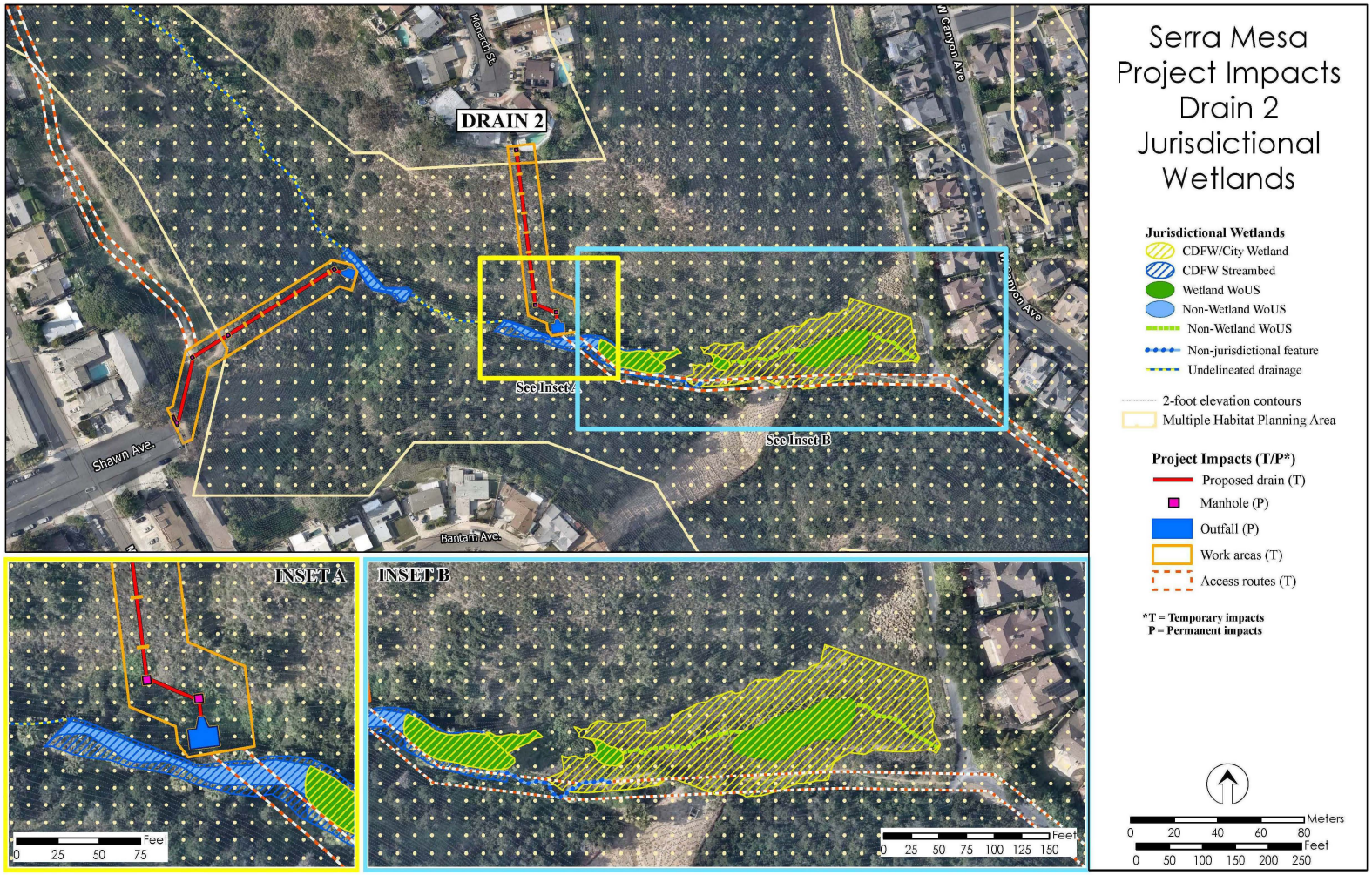


Figure 8. SD 2 Jurisdictional Wetlands.

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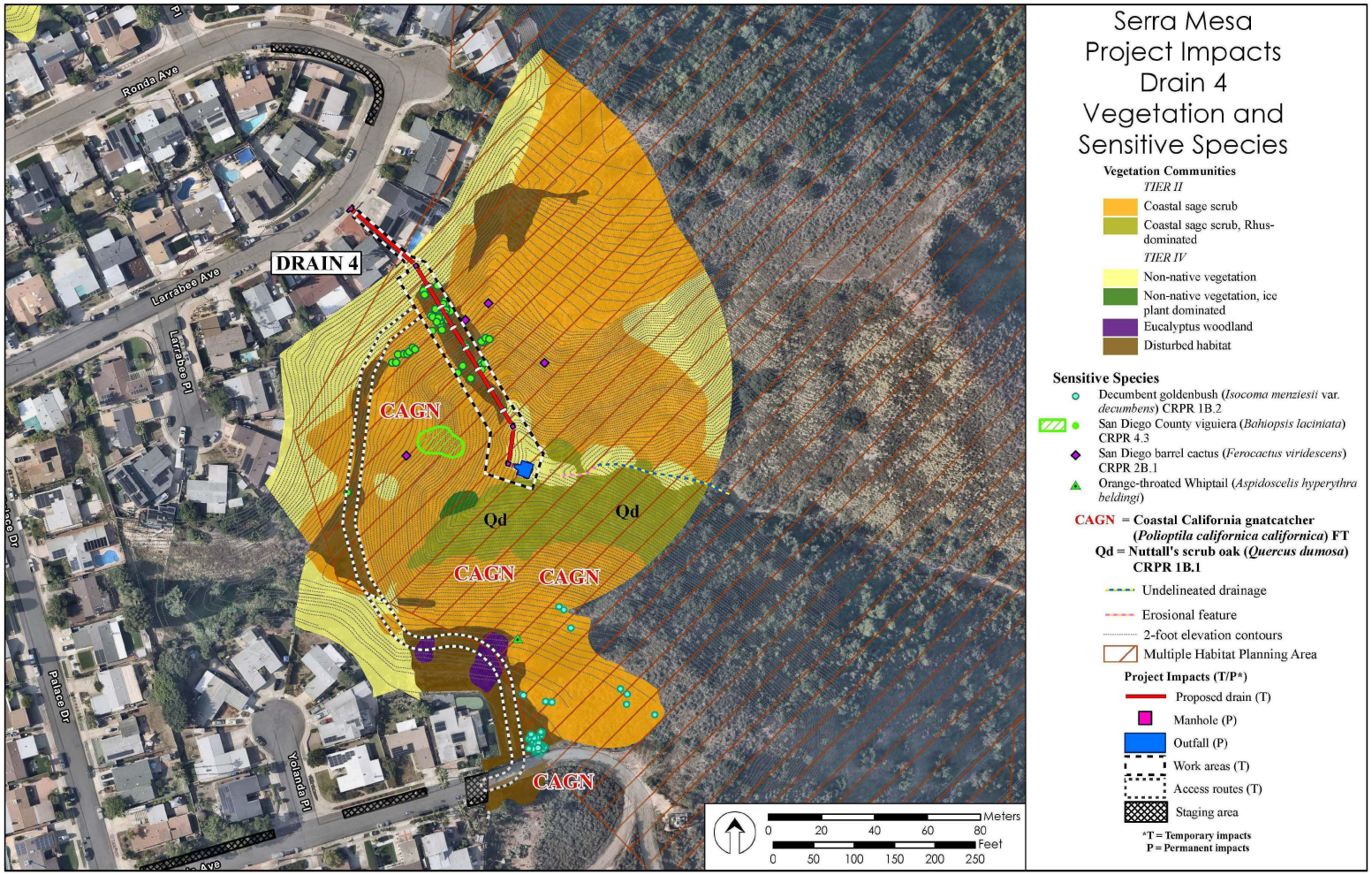


Figure 9. SD 4 Biological Resources & Impacts.

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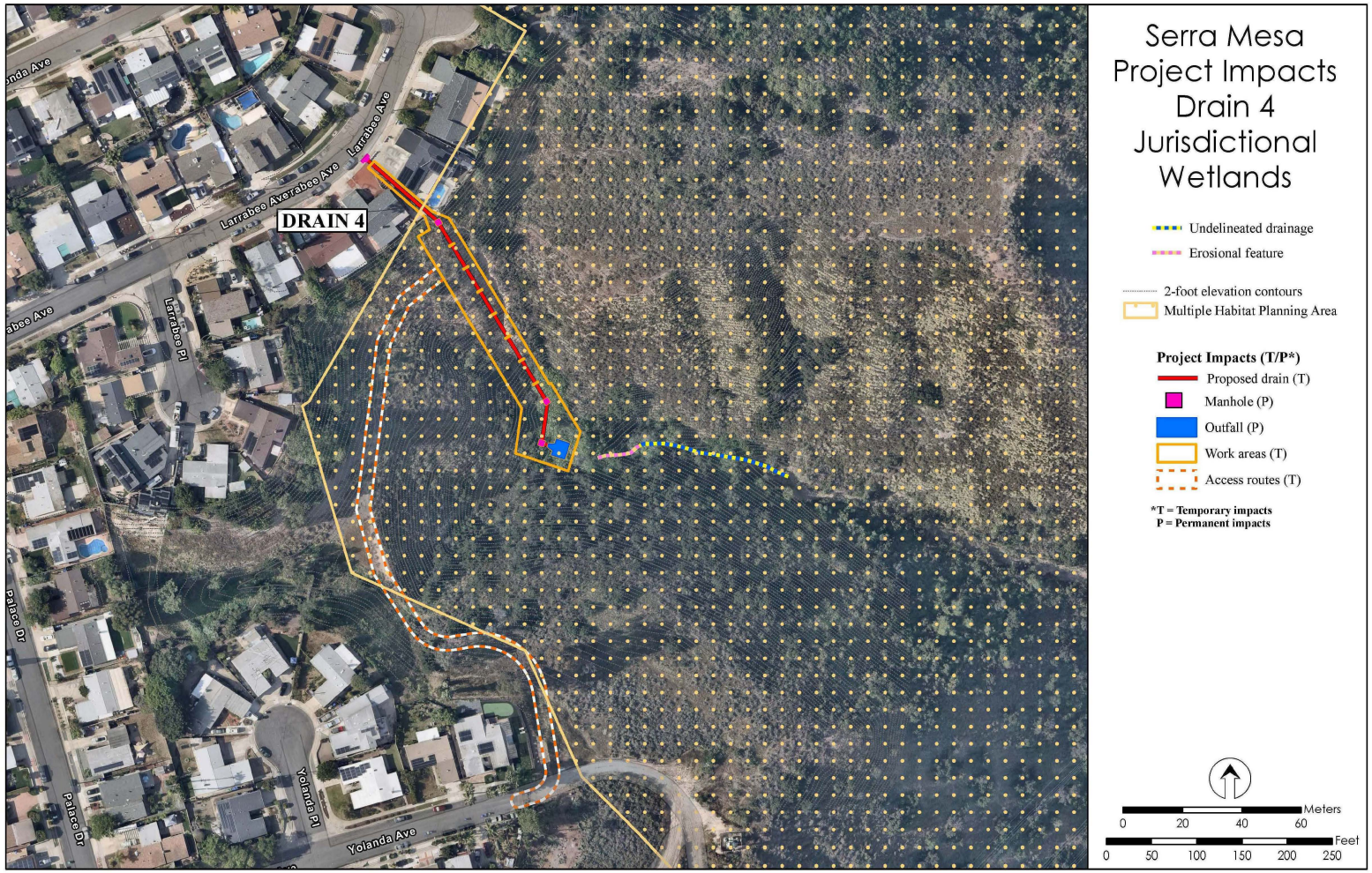


Figure 10. SD 4 Jurisdictional Wetlands.

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Figure 11. SD 5 Biological Resources & Impacts.

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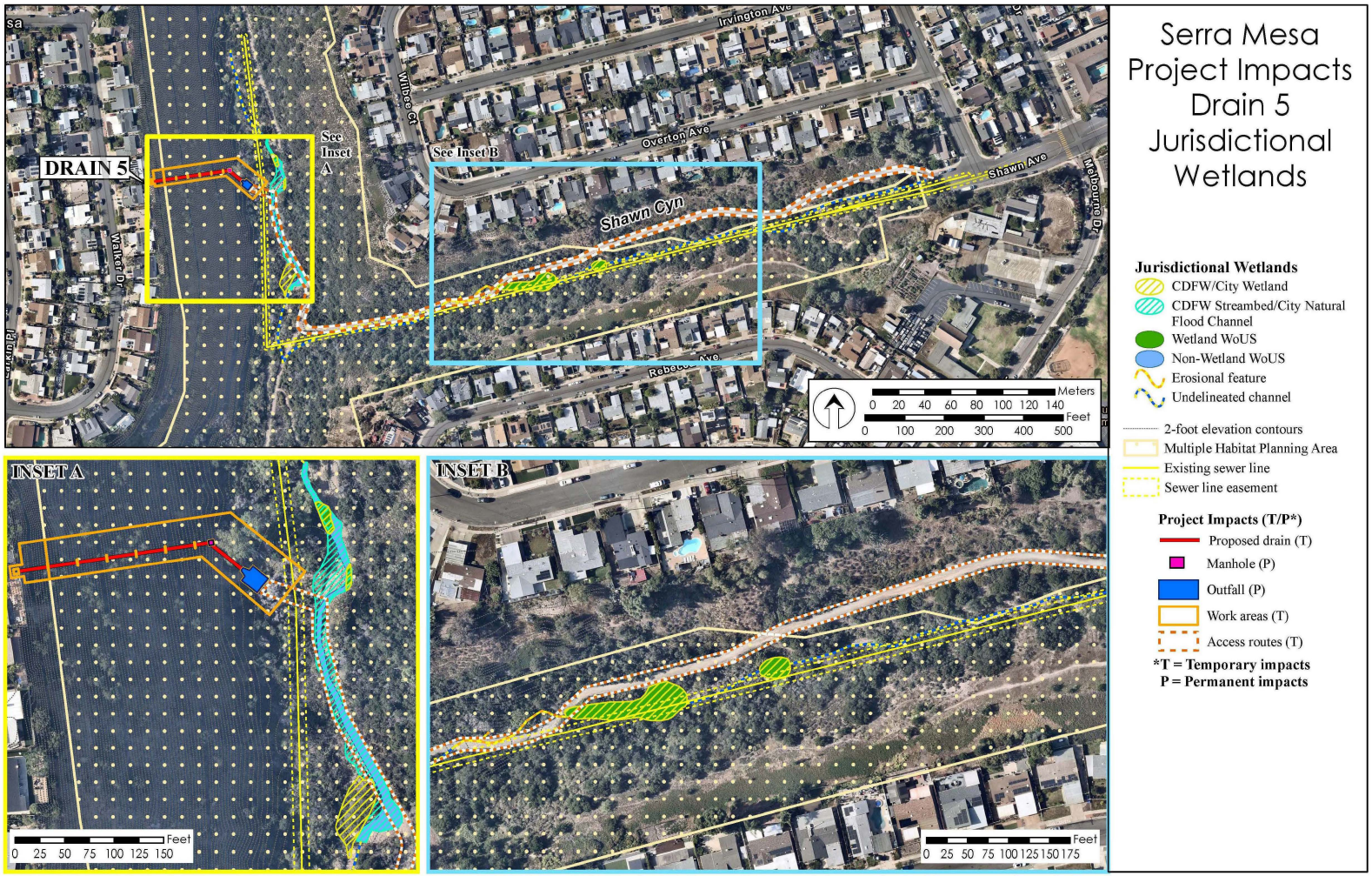


Figure 12. SD 5 Jurisdictional Wetlands.

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Table 2. Vegetation Communities in the Study Area.

Vegetation Community (Tiers)/Habitat in the Study Area (Holland Code)	City Habitat Type	Total Area Mapped*
Wetlands		
Unvegetated Channel (64200)	Natural Flood Channel	0.140
Disturbed Wetland (11200)	Disturbed Wetland	0.076
Freshwater Marsh (52400)	Freshwater Marsh	0.216
Herbaceous Wetland (52510)	Freshwater Marsh	0.499
Herbaceous Wetland, Irrigated	Freshwater Marsh	0.172
Mule Fat Scrub (63310)	Riparian Scrub	0.039
Southern Willow Scrub (63320)	Riparian Scrub	0.075
Southern Riparian Scrub (63300)	Riparian Scrub	0.130
	Subtotal	***1.349***
Tier II (uncommon uplands)		
Diegan Coastal Sage Scrub (32500)	Coastal Sage Scrub	19.63
Diegan Coastal Sage Scrub, Rhus-Dominated	Coastal Sage Scrub	15.91
Diegan Coastal Sage Scrub, Rhus-Dominated, Disturbed	Coastal Sage Scrub	1.07
Diegan Coastal Sage Scrub, Revegetation	Coastal Sage Scrub	0.03
Diegan Coastal Sage Scrub, Baccharis-Dominated (32530)	Coastal Sage Scrub	0.99
	Subtotal	***37.64***
Tier IIIa (common uplands)		
Poison Oak Chaparral	Mixed Chaparral	0.15
	Subtotal	***0.15***
Tier IIIb (uncommon uplands)		
Non-Native Grassland (42200)	Non-Native Grasslands	0.06
	Subtotal	***0.06***
Tier IV (other uplands)		
Non-Native Vegetation (11000)	Disturbed Land	11.71
Non-Native Vegetation, Ice Plant-Dominated	Disturbed Land	0.27
Non-Native Vegetation, Palm-Dominated	Disturbed Land	1.09
Disturbed Habitat (11300)	Disturbed Land	3.02
Developed (12000)	Disturbed Land	3.54
Developed, Brow Ditch	Disturbed Land	0.06
Developed, Path	Disturbed Land	0.38
Riprap	Disturbed Land	0.11
Eucalyptus Woodland (79100)	Eucalyptus Woodland	0.65
Ornamental	Ornamental Plantings	1.31
	Subtotal	***22.13***
	TOTAL	**61.33**

Note: *Wetlands are presented to the nearest 0.001 acre whereas uplands are presented to the nearest 0.01 acre.

Tier IV habitats include Non-Native Vegetation (NNV) communities associated with water originating from the residential development on the mesas, that can support Brazilian pepper, iceplant (*Carpobrotus edulis*), and Mexican fan palms in the canyon bottoms and exotic species with scattered non-native grasses within the City-cleared brush management zones that can extend beyond private property boundaries onto City-owned land. Other Tier IV communities present include Eucalyptus Woodland, Disturbed Habitat, and Developed in various forms (pathways, brow ditches, landscaped backyards, roads). The Holland (1986) vegetation communities are described below under each MSCP Tier and City Habitat Type.

Wetlands Tier

Natural Flood Channel

Unvegetated Channel (64200)

Unvegetated or non-vegetated channels and flood plains consist of the sandy, gravelly, or rocky fringe of waterways or flood channels. They are unvegetated on a relatively permanent basis and have a variable water line that inhibits the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the wash. Vegetation may exist here but is usually less than 10% total cover.

The unvegetated channel in the SD 5 Study Area consists of rock cobble stones extending throughout the flood channel area running from north to south which is part of the drainage that runs down Ruffin Canyon and is providing the access route to SD 5 within the mapped area (see Figure 11). Unvegetated channel covers 0.140 acre in the Study Area.

Disturbed Wetland

Disturbed Wetland (11000)

Disturbed Wetlands are areas permanently or periodically inundated by water, which have been significantly modified by human activity. This includes portions of wetlands with obvious artificial structures such as concrete lining, barricades, rip-rap, piers, or gates. Often unvegetated but may contain scattered native or non-native vegetation. Examples include lined channels, Arizona crossings, detention basins, culverts, and ditches. Common species observed in disturbed wetlands include: *Arundo donax*, *Tamarix* spp., *Eucalyptus* spp., *Phoenix* spp., *Washingtonia* spp., *Cortaderia* spp., *Cynodon dactylon*, but may also contain *Salix* spp., *Typha* spp., and a variety of other wetland plants (Oberbauer et al. 2008).

The Disturbed Wetlands in the study area consists of highly disturbed wetlands in the vicinity of SD 1 (to the east of the access path and south of SD 1 work area, see Figure 5) and SD 2 (East of SD 2 and North of the access route SD 2, see Figure 7). The area primarily consisting of exotic species (Mexican fan palms) but also maintained an active presence of water and hydric soils. Disturbed Wetland covers 0.076 acre in the Study Area.

Freshwater Marsh

Freshwater Marsh (52400)

Freshwater Marsh is dominated by perennial, emergent monocots up to 12 ft in height, often forming completely closed canopies. This habitat usually occurs on drainages and ponds lacking significant current but permanently flooded by fresh water. Prolonged saturation permits accumulation of deep, peaty soils.

Freshwater Marsh in the study area consists of cattails (*Typha* sp.) in two basins with a few California bulrushes (*Schoenoplectus californicus*) within the storm water detention facility on the access to SD 2 within the mapped area. The two basins are being invaded by tamarisk. Another patch of Freshwater Marsh occurs in the vicinity of the access to SD 5 along the drainage that runs down Shawn Canyon. Freshwater Marsh covers 0.216 acre in the Study Area.

Herbaceous Wetland (52510)

This vegetation community includes seasonal wetlands supporting mainly annual species. They do not support species (*Typha*, *Scirpus*, and *Juncus* spp.) typically associated with Freshwater Marsh (52400). In San Diego County, these wetlands may only occur during wetter than average years and are usually found in swale areas or adjacent to drainages. Characteristic species include yellow monkey flower (*Mimulus guttatus*) and annual beard grass (*Polypogon monspeliensis*).

The mesophilic plantings in the storm water detention facility east of SD 2 around the two Freshwater Marsh patches are identified as Herbaceous Wetland to distinguish it from the cattail-dominated Freshwater Marsh. The Herbaceous Wetland that consists of an almost monoculture of southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) immediately surrounds the Freshwater Marsh, and is predominantly wet during the wet season, but dries in the summer when it is supplemented by irrigation from the system that surrounds and occurs within the detention basin. Herbaceous Wetland-Irrigated describes the area that is at a slightly higher elevation around the detention basin planted with spiny rush as well as San Diego marsh-elder (*Iva hayesiana*). These areas, while almost contiguous with the wetter Herbaceous Wetland, are most likely dependent on irrigation. Herbaceous Wetland covers 0.671 acre within the mapped area.

Riparian Scrub

Mule Fat Scrub (63310)

Mule Fat Scrub is a depauperate, shrubby riparian scrub community dominated by mule fat (*Baccharis salicifolia*) and sometimes is interspersed with small willows. This vegetation community typically occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. This early seral community is maintained by frequent flooding, the absence of which would lead to a cottonwood or sycamore dominated riparian woodland or forest (Holland 1986). In some environments, limited hydrology may favor the persistence of mule fat.

Mule Fat Scrub in the Study Area consists of a patch of mule fat along the drainage south of SD 5 and covers 0.039 acre within the mapped area.

Southern Willow Scrub (63320)

Southern Willow Scrub is composed of dense, broad-leafed, winter-deciduous riparian thickets dominated by several *Salix* species, with scattered emergent Fremont cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). Most stands are too dense to allow much understory development. The site typically consists of loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows, that require repeated flooding.

Southern Willow Scrub patches are distributed along major rivers but are now much reduced by urban expansion to areas of flood control and channel improvement. This habitat occurs along the drainage near which SDs 1, 2, and 3 occur, covering 0.075 acre within the mapped area.

Southern Riparian Scrub (62500)

Southern Riparian Scrub is found in riparian zones dominated by small trees or shrubs, lacking taller riparian trees found on river systems where flood scour occurs. This habitat has expanded from increased urban and agricultural runoff. Characteristic species include arroyo willow (*Salix lasiolepis*), other willow species (*Salix* spp.), and mule fat.

Southern Riparian Scrub in the study area occurs upstream in the drainage that runs past SD 5 and covers 0.13 acre within the mapped area.

Tier II (uncommon uplands)

Coastal Sage Scrub

Diegan Coastal Sage Scrub (32500)

DCSS is one of the major shrub types occurring in Southern California, occupying xeric sites with shallow soils. Dominated by drought-deciduous shrub species with relatively shallow root systems and open canopies, coastal sage scrub (CSS) communities often contain a substantial herbaceous component. DCSS occurs along the coast from Los Angeles to Baja California (Baja), Mexico (Holland 1986), where it supports several endangered, threatened, and rare vascular plants, as well as several bird and reptile species that are candidates for federal listing.

The DCSS is dominated by typical sage scrub species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and saw-toothed goldenbush (*Hazardia squarrosa*). DCSS typically grows on south- and west-facing slopes of hills and canyons in coastal San Diego County. Some areas of DCSS are dominated by lemonadeberry, a large, evergreen shrub, often growing on the north-facing slopes of coastal canyons or toward the bottoms of slopes on south- and west-facing slopes. It is much less suitable for DCSS-dependent species.

Disturbed DCSS also occurs on slopes which were regraded during the development of the Serra Mesa Community, or which has had iceplant grow through it, having been planted for fire protection on upper slopes, but which has grown downslope into habitat, often to the canyon floor. The result is often a depauperate DCSS.

DCSS, both typical and lemonadeberry-dominated, and disturbed DCSS occur in all the canyons within the study area. In addition, the DCSS just west of the western terminus of Shawn Avenue (see Figure 11) that appeared to be undergoing restoration in 2017 has matured to form mature DCSS. A new, smaller area near the outfall for SD 5that was previously covered with iceplant is being restored with DCSS plantings. DCSS in all its forms covers 36.65 acres within the mapped area.

Areas of DCSS that contained San Diego barrel cactus (*Ferocactus viridescens*) were not identified as Maritime Succulent Scrub because the areas are too far inland (Maritime Succulent Scrub is mostly restricted to coastal headlands and bluffs), were dominated by typical DCSS shrubs (California encelia [*Encelia californica*], California buckwheat), and did not support a significant percentage of any cactus or succulent species.

The area that supported Nuttall's scrub oak (*Quercus dumosa*), a potential indicator species of Southern Maritime Chaparral was not identified as Southern Maritime Chaparral because the location was not on weathered sands within the coastal fog belt, did not support chamise (*Adenostoma fasciculatum*), a key chaparral indicator, and did not contain any other species unique to Southern Maritime Chaparral that were not in surrounding habitats.

Diegan Coastal Sage Scrub: Baccharis-Dominated (32530)

This vegetation community is a type that is distinguished from DCSS as it is dominated by *Baccharis* species (Oberbauer et al. 2008). It is typically on disturbed sites or those with nutrient-poor soils. It is often found within other forms of DCSS and on upper terraces of river valleys in the coastal and foothill areas of San Diego County (Oberbauer et al. 2008).

This habitat occurs in Shawn Canyon along the access route and in the canyon near SD 5 and covers 0.99 acre within the mapped area.

Tier IIIa (Common Uplands)

Mixed Chaparral

Poison Oak Chaparral (No Holland Code)

While not usually occurring in monotypic stands and present within other communities, sometimes poison oak (*Toxicodendron diversilobum*) does occur in swaths that form a distinct community. Two patches of monotypic poison oak are present near the outfalls of both SD 2 and SD 3 and cover 0.15 acre within the mapped area.

Tier IIIb (Common Uplands)

Non-Native Grasslands

Non-Native Grassland (42200)

NNG is a dense to sparse cover of annual grasses with flowering culms 0.2-0.5 meter high or more. Often associated with numerous species of showy flowered, native annual forbs ("wildflowers"), especially in years of favorable rainfall. In San Diego County, the presence of wild oat (*Avena barbata*), bromes (*Bromus* sp.), filaree (*Erodium* sp.), and mustard (*Brassica* sp. and *Hirschfeldia*

sp.) are common indicators. In some areas, depending on past disturbance and annual rainfall, native and non-native annual forbs may be the dominant species; however, it is presumed that grasses will soon dominate. Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants die through the summer-fall dry season, persisting as seeds. Remnant native species are variable. This can include grazed and even dry-farmed (i.e., disked) areas where irrigation is not present.

The habitat occurs at SD 5 as two patches above the outfall of the existing storm drain and may have occurred after past storm drain maintenance. They have been present for at least two decades (Google Earth 2026) and currently cover 0.06 acre.

Tier IV (Other Uplands)

Disturbed Lands

Disturbed Habitat (11300)

Disturbed Habitat consists of areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association, but continues to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance, or show signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Examples of disturbed land include areas that have been graded, repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural vegetation (i.e., dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old homesites (Oberbauer et al. 2008).

Disturbed Habitat is present in the form of trails (access to SD 1) and roads (access to SDs 4 and 5), and areas cleared or supporting little native vegetation (SD 4), and covers 3.02 acres within the mapped area.

Developed (Including Variants; 12000)

Developed land is where permanent structures and/or pavement have been placed, or where landscaping in residential yards, preventing the growth of native vegetation.

The streets, homes and yards of the Serra Mesa Community, and the asphalt pathway around the Stonecrest development, and the brow ditch that runs around the south side of the development and down the south side of the ramp into the detention facility are all mapped as developed. In addition, the utility road access beyond the end of Yolanda Avenue has been covered with gravel and is mapped as Developed. Developed covers 3.98 acres within the mapped area.

Non-Native Vegetation (11000)

NNV is defined as areas of cultivated or landscaping plants that have naturalized into otherwise native habitat areas or that are remnant of previous cultivated land uses. Such plants occur without supplemental irrigation and may spread, supplanting native plant species.

NNV dominated by different species is found in several forms in the study area. Brazilian pepper has colonized canyon bottoms near SDs 3 and 4, a patch of giant reed (*Arundo donax*) occurs near SD 3, and Mexican fan palms line the bottom of the canyon between SD 1 to east of SD 2. These palms have caused flood flows down the canyon to be more highly eroded than what would normally occur because the palm trunks impede water flow and deflect flash floods and high storm drain inputs in all directions including the channel sides which have been highly eroded and cause the channel to be excessively wide for the size of the canyon and the watershed. Other common NNV occurs as ice plant patches that have migrated down canyon sides into DCSS or to the bottom of canyons. This is evident in the canyons for SDs 1-3 and SD 5. A patch identified as NNV-Ice Plant-Dominated occurs in the detention basin near the access route to SD 2. Mexican fan palms dominating the wetter canyon bottoms are mapped as NNV-Palm-Dominated, some of which were later determined to be USACE, CDFW, and therefore City wetlands because of saturated sand beneath and water flowing. NNV in its various forms covers 13.07 acres within the mapped area.

Eucalyptus Woodland

Eucalyptus Woodland (79100)

Eucalyptus habitats range from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. In most cases, eucalyptus forms a dense stand with a closed canopy. *Eucalyptus* species produce a large amount of leaf and bark litter, the chemical and physical characteristics of which limit the ability of other species to grow in the understory, decreasing floristic diversity. Overstory composition is typically limited to one species of the genus, or mixed stands composed of several *Eucalyptus* species; few native overstory species are present within eucalyptus plant areas, except in small, cleared pockets.

Eucalyptus Woodland is typically associated with development on the upper canyon slopes and is found near and on the opposite side of the canyon of SD 3 and along the access to SD 4, and covers 0.65 acre within the mapped area. Eucalyptus trees are commonly found within residential areas as part of the landscaping.

Ornamental

Ornamental (No Holland Code)

Ornamental is represented as landscaping, horticultural species that are tended or maintained but not part of residents' yards. This vegetation type was mapped along the pathway on the western and southern side of the Stonecrest Village development. In addition, the vegetation on the ramp down into the basin from the pathway, on the slope on the side of the ramp, and the slope from the pathway into the detention basin supports native plants including southwestern spiny rush and San Diego marsh-elder; but, were planted, are wholly dependent on irrigation, and are trimmed and maintained by the landscape crew for the development, and was therefore considered to be ornamental landscaping. This vegetation community covers 1.31 acres within the mapped area.

3.3.2 Plants

A list of plant species detected during surveys of the proposed Project sites and access routes is presented in Appendix A. This list includes species that are typically found within the less impacted canyons of urban San Diego. The following sensitive plants were detected in the area surveyed.

Nuttall's Scrub Oak (*Quercus dumosa*)

Federal Status: None

State Status: California Rare Plant Rank (CRPR) List: 1B.1

MSCP Status: Not Covered

Nuttall's scrub oak is the scrub oak found in coastal San Diego County, and as far north as Orange County and as far south as Punta Banda in Baja California in coastal canyons below 1,000 ft elevation. It occurs in chaparral, DCSS, Maritime Succulent Scrub, and closed-cone pine forests in coastal hills, mesic slopes, canyons, and coastal bluffs. This species was identified in the area surveyed for SD 4 (see Figure 9) but was on the far slope from where work is expected, and so numbers were not counted as they would not be impacted.

Decumbent Goldenbush (*Isocoma menziesii* var. *decumbens*)

Federal Status: None

State Status: CRPR List: 1B.2

MSCP Status: Not Covered

Decumbent goldenbush occurs in coastal San Diego County, primarily west of I-15, but also in hilly and mountain clearings, with a few coastal records north of San Diego County and into Baja Mexico. It occurs in moist areas, usually with sandy soil, associated with ss. Since 2022 many individuals have grown in the Disturbed Habitat along the access to SD 1 and several more individuals were detected growing in the Disturbed Habitat along the access route at SD 4 (see Figure 5 and Figure 9).

San Diego Barrel Cactus (*Ferocactus viridescens*)

Federal Status: None

State Status: CRPR 2B.1

MSCP Status: Covered

San Diego barrel cactus is found in open DCSS from the coast inland as far as Jamul, Poway, and Otay Mountain from Camp Pendleton into northern Baja California. This species was detected at in the areas surveyed for SDs 2 and 5 (see Figure 7 and Figure 11) with a total of 11 individuals mapped and others observed incidentally near SDs 2 and 4. One individual was apparently lost with the blowout of SD 4 since 2022.

San Diego Marsh-Elder (*Iva hayesiana*)

Federal Status: None

State Status: CRPR List: 2B.2

MSCP Status: Not Covered

San Diego marsh-elder is found from coastal Ventura through coastal San Diego Counties, as well as Baja California, Mexico. This perennial herb species is generally associated with the periphery of ephemeral or riparian drainages, alkali sinks, and marsh habitat. Within the area studied, San Diego marsh-elder was found in large numbers where it has been planted in the detention basin east of SD 2 (see Figure 7), especially in the outer portion of the basin which is likely dependent on irrigation for persistence year-round. The species was present in high densities in most of the 0.67 acre of Herbaceous Wetland in the area studied, mostly on the edge of the detention basin, including on the planted slopes of the ramp into the basin, and the slope supporting the walkway beside the Stonecrest Village community.

Palmer's Sagewort (*Artemisia palmeri*)

Federal Status: None

State Status: CRPR List: 4.2

MSCP Status: Not Covered

Palmer's sagewort is found distributed along creeks and drainages or occasionally in mesic chaparral habitat in western San Diego County and Baja California, Mexico. It often occurs in shaded understory of riparian woodland or forest trees, such as willows, sycamore, or cottonwood. Within the area surveyed, 23 individuals of this species were detected on the southern edge of the detention basin (see Figure 7), with some of them in the shade of the lemonadeberry-dominated DCSS on the slope above.

San Diego Sunflower (*Bahiopsis laciniata*)

Federal Status: None

State Status: CRPR List: 4.2

MSCP: Not Covered

San Diego sunflower occurs throughout southern San Diego County and in Baja California, Mexico. It occurs in DCSS habitat on a variety of soil types and is often a dominant component of the landscape where it occurs as it does above the outfall for SD 2. This species is the dominant shrub in some areas studied. A total of 217 San Diego sunflower plants were mapped, but swaths of the species were also seen on many slopes mostly at SD 1-2 (see Figure 5), but also at SDs 4 and 5 (see Figure 7, Figure 9, and Figure 11, respectively).

Southwestern Spiny Rush (*Juncus acutus* spp. *leopoldii*)
Federal Status: None
State Status: CRPR List: 4.2
MSCP: Not Covered

Southwestern spiny rush occurs in Los Angeles, San Diego, Santa Barbara, Ventura, Orange, and San Luis Obispo Counties, as well as Baja California, Mexico. This species is generally associated with riparian drainages, wet meadows, and saltmarsh habitat. Within the area studied, southwestern spiny rush was found in large numbers in the detention basin east of SD 2 (see Figure 7) where it was planted and many of which are dependent on irrigation for persistence year-round. The species was present in high densities in most of the 0.67 acre of Herbaceous Wetland in the area studied.

Potentially occurring sensitive plant species within the Project Study Area are based on habitat preferences and distribution were identified by using the California Natural Diversity Database search for the area. Potentially occurring plant species are those (1) that occur outside of, but within the general vicinity of the areas studied, and/or (2) whose habitat preferences are consistent with available habitat within the area studied. A total of 23 sensitive plant taxa were identified as having some potential to occur in the areas studied (Appendix B: Special Status Plant Species with Potential to Occur). Of these none have a very high potential to occur, five have a moderate potential, and 16 have a low potential to occur.

The potential for MSCP Narrow Endemic Plant Species to occur within the study area is assessed in Appendix C: Potential for Narrow Endemics to Occur. No narrow endemics have a high or moderate potential to occur in the project areas.

3.3.3 Animals

A list of animal species detected during surveys of the proposed Project sites and access routes is presented in Appendix D: Animal Species Observed. The following sensitive animal species were detected in the area surveyed.

Coastal California Gnatcatcher (*Polioptila californica californica*)
Federal Status: Threatened
State Status: Species of Special Concern
MSCP: Covered

CAGN are restricted to DCSS and Riversidean sage scrub in southern Los Angeles, Orange, western Riverside, and San Diego Counties south into Baja California. Typically found in sage scrub habitat with some California sagebrush and California buckwheat as opposed to high densities of laurel sumac or lemonadeberry. CAGN were detected within 300 ft of all five alignments and the access routes of SDs 1, 3, and 4. (see Figure 5, Figure 7, Figure 9, and Figure 11) within the larger patches of California sagebrush-dominated DCSS in the canyons. The CAGN was detected incidentally within 300 ft of all SD alignments and access routes during surveys in 2016 and 2017, 2022, and 2025. CAGN were detected within 300 ft of all five alignments and the access routes of SDs 1, 3, and 4. With potential habitat for CAGN within 300 ft of all access routes and alignments, avoidance measures will be required for all the storm drain replacements.

Orange-Throated Whiptail (*Aspidoscelis hyperythra beldingi*)
Federal Status: None
State Status: Species of Special Concern
MSCP: Covered

Orange-throated whiptails range from western San Diego through western Riverside and southern Orange Counties, and south to central Baja California within sage scrub and semi-arid brushy areas typically with loose soil and rocks, including washes, stream sides, rocky hillsides, and coastal chaparral habitats where they live on small invertebrates, especially spiders, scorpions, centipedes, termites, and small lizards. Three individuals were detected, one off the access to SD 1 (see Figure 5), two on the ramp into the detention basin (see Figure 7), and one to the west of the access to SD 4 (Figure 9).

Potentially occurring sensitive animal species based on habitat preferences and distribution were identified by searching using the California Natural Diversity Database search for the area. Potentially occurring animal species are those (1) that occur outside of, but within the general vicinity of the areas studied, and/or (2) whose habitat preferences are consistent with available habitat within the area studied. A total of 40 sensitive animal species were identified as having the potential to occur in the areas studied (Appendix E: Special Status Animal Species with Potential to Occur). Of these none have a very high potential to occur, four have a moderate or low to moderate potential to occur, and 28 have a low potential to occur.

3.3.3.1 Sensitive Animal Species with Potential to Occur

MSCP-Covered species with a moderate or low to moderate potential to occur in the Project only includes the rufous-crowned sparrow (*Aimophila ruficeps canescens*). See Appendix B: Special Status Plant Species with Potential to Occur and Appendix E: Special Status Animal Species with Potential to Occur for details.

3.3.4 Aquatic Resources

Jurisdictional features in the study area are presented in the Aquatic Resource Delineation Report (ARDR; TDI 2026) and were mostly associated with drainages at the bottom of canyons, notably for SDs 1-3; however, a man-made storm water detention facility is at the eastern end of the valley into which SDs 1-3 drain (see Figure 6 and Figure 8). No jurisdictional features occur at SD 4. The drainages that flow down Shawn Canyon and Ruffin Canyon for SD 5 are potentially jurisdictional (Figure 12). These features all contain some USACE, CDFW, RWQCB, and City jurisdictional wetlands and waters.

The National Wetlands Inventory (USFWS 2025a) identifies Palustrine Scrub Shrub Temporary Flooded (PSSA) portions and Intermittent Riverine Streambeds Temporary Flooded (R4SBA) in the canyons at SDs 1-3 and SD 5 (Figure 6 and Figure 12), and the Palustrine Emergent Persistent Seasonally Flooded Diked/Impounded (PEM1Ch) feature that is the detention basin east of SD 2 (Figure 2). No feature is identified at SD 4.

For the canyon containing SDs 1-3, water seems to continuously feed into the canyon floor, rather than just from storm drain input between rainfall events. The moisture may come from a potential

spring at the head of the canyon near SD 1 where water appears and remains for much of the year. The origin of this water is unknown. Water from irrigated landscapes on the mesas above the canyon may migrate through the soil and emerge in the canyon bottom may supplement the flow in the canyon but the source of the continuous flow likely comes from another source or larger area. A jurisdictional wetland within the channel forms just below the existing outfall at SD 1, but as the feature continues down the canyon, the slope steepens, water flows more rapidly, and the drainage becomes a non-wetland Water of the U.S. and runs past the proposed outfalls of SDs 3 and 2. Mexican fan palms grow in and adjacent to the channel but do not form a wetland because of the lack of standing water and soring of cobbles, pebbles, and sorted materials with little organic matter. The canyon floor slope east of SD 2 flattens and the channel floor becomes sand and is continuously saturated and supports Mexican fan palms. To the east of these palms, the canyon then opens into a manufactured detention basin (see Figure 6 and Figure 8).

The detention basin was constructed around 1998 at the time the Stonecrest Village development was created (Historic Aerials 2026). Historic imagery indicates that two distinct sub-basins were originally created which are still in evidence, and are seasonally wet and previously supported cattails and California bulrush though they are now both being invaded by tamarisk. The west of the two basin was connected to the wetlands at the end of the canyon but deposition of sand and growth of ice plant and Brazilian pepper has divided the western sub-basin. The subbasins capture water from several sources: direct rainfall; runoff from the slopes to the north and south; the drainage that comes down the canyon from the west, a concrete v-ditch that captures water from the slope to the south of the Stonecrest Village homes and drains into the basin, and from the north, via the large, riprap drainage/storm water feature that runs parallel to the pathway along the western side of the adjacent development. In addition, there is a sprinkler system around and within the basin area that was still actively used to supplement the rainfall and drainage in drier months (Landscape Foreman, pers. com. 2017) and was still present in 2026.

3.3.4.1 Waters of the U.S. (USACE) and/or State (RWQCB, CDFW)

U.S. Army Corps of Engineers

The reach into which SDs 1-3 drain is jurisdictional to the USACE. The wetland within the channel that forms just below the existing outfall at SD 1 is a wetland Water of the U.S., as water appears and remains for much of the year and supports wetland vegetation. But as the feature continues down the canyon, the slope steepens, water flows intermittently but more rapidly, and the drainage becomes a non-wetland Water of the U.S. before it flows past the proposed outfalls of SDs 3 and 2. The canyon floor shows bed and bank and Ordinary High Water Marks in many portions, with Mexican fan palms growing out of the cobble bed. The canyon floor slope east of SD 2 flattens and the sand floor becomes continuously saturated (hydric) and supports Mexican fan palms and therefore is a wetland Water of the U.S.

USACE jurisdiction in the basin is limited to the Freshwater Marsh extending from the Mexican fan palm wetland at the end of the canton into the basin, the remaining portion of the western subbasin not dominated by ice plant and Brazilian pepper trees, and the eastern subbasin supporting California bulrush which is being invaded by tamarisk. A narrow channel that in 2022 emerged from the Mexican fan palms to the west along the southern edge of the basin, has been

starved of by sand deposition above, and the spread of iceplant and is no longer a jurisdictional feature. USACE jurisdiction includes the channel between the two subbasins and the main channel that leaves the eastern subbasin and exits into the overflow pipe at the basin's southeastern corner. The sloped areas to the east and southeast of the basin floor that are wholly dependent on irrigation and tended as part of the Stonecrest Village landscaping are not USACE jurisdictional.

No USACE wetlands occur along the SD 4 alignment (see Figure 10) and the blowout of the SD pipe upslope has created a lot of deposition and erosional features with no Ordinary High Water Mark along the canyon as far as could be safely reached. Much of the material blown out has ultimately been deposited into the Kinder Morgan yard in Murphy Canyon to the east.

In the Study Area for SD 5, a seemingly ephemeral drainage with some ponding areas supporting wetlands occurs in the east-west valley of the Shawn Canyon Trail from Shawn Avenue. The ephemeral drainage feature crosses the trail/access road twice and ultimately joins the channel that flows down the north-south Ruffin Canyon in which existing SD 5 is located (see Figure 12). Within the trail the drainage is heavily impacted pedestrian and maintenance vehicles and does not show any streambed or jurisdictional features. The patches of Freshwater Marsh/willow occur along the east-west drainage along Shawn Canyon upstream of where water flows across the trail/access, but they are surrounded by thick upland vegetation and were impossible to access without damaging those sensitive resources. In Ruffin Canyon, the drainage channel is within the trail/sewer line access road for long distances and has a cobble bottom and Ordinary High Water Mark features. The existing storm drain outfall is located at the bottom of the western slope of the canyon, but the sewer line lies between the outfall and the drainage channel. The north-south drainage emerges into the trail north of the storm drain outfall and wetland Waters of the U.S. in the form of Freshwater Marsh patches have formed both off trail and within the trail, and had water present during visits in June 2025 despite the last rainfall amount over 0.25 inch being on March 13 when 1.37 inches were recorded (WeatherUnderground 2025). The drainage was considered intermittent because of the ponding water along the channel, with some of the ponded areas supporting mosquito fish (*Gambusia affinis*) and tadpoles.

Regional Water Quality Control Board

When wetlands under the USACE are present, the local RWQCB follows USACE jurisdiction and regulates discharge into any Waters of the U.S. under Section 401 of the CWA. RWQCB wetlands are the same as USACE wetland and on-wetland Waters of the U.S. for this project, so RWQCB would regulate impacts to the wetlands and Waters of the U.S. at SD 1, that pass by the outfalls of SD 2 and SD 3, the inner marsh basins of the Detention Basin, and the drainage and wetlands along Ruffin Canyon along the access for SD 5. The RWQCB also administers the State's Porter-Cologne Water Quality Control Act, which regulates discharge into Waters of the State that may also include isolated waterbodies, such as vernal pools and ephemeral streams. As there are no vernal pools present within the project Study Areas, the RWQCB will only regulate impacts to Waters of the U.S.

California Department of Fish and Wildlife

As for USACE, the reach into which SDs 1-3 drain is jurisdictional to CDFW. The canyon floor shows a clear bed and bank in many portions. CDFW takes jurisdiction up to the top of bank. At

the upper end of the canyon and when the drainage flattens and broadens at its eastern end and supports Mexican fan palms in the streambed, it becomes a CDFW wetland (see Figure 6 and Figure 8).

While the detention basin east of SD 2 (see Figure 8), the ramp into it, and the easternmost slope support wetland indicator species the whole area is not all CDFW jurisdiction. The eastern subbasin and remaining portion of the west subbasin containing cattail and bulrush plus invading tamarisk, as well as the surrounding herbaceous wetland areas containing spiny rush and San Diego marsh elder are CDFW jurisdiction but the slope and ramp up to the trail from the basin floor are not jurisdictional to CDFW being tended landscaping.

No CDFW wetlands or streambeds occur around the SD 4 alignment (see Figure 10). In the Study Area for SD 5, the east-west drainage is a CDFW jurisdictional drainage feature that crosses the trail/access road twice, apparently without clear bed and bank, and then joins the channel that flows down the north-south canyon in which existing SD 5 is located (see Figure 12). In this canyon, the drainage channel is sometimes partially within the trail/sewer line access road and is CDFW jurisdictional streambed with patches of Mule Fat Scrub that are also CDFW wetlands.

3.3.4.2 City Wetlands

The City regulates impacts to wetlands when identified as ESL in its Biology Guidelines (City 2018). The definition of wetlands in ESL is intended to differentiate uplands (terrestrial areas) from wetlands, and furthermore to differentiate naturally occurring wetland areas from those created by human activities.

The City does not consider artificially created wetlands to be City wetlands but does consider naturally occurring wetland vegetation communities dominated by hydrophytic plants as wetlands. In addition, areas lacking naturally occurring wetland vegetation communities are still considered wetlands if hydric soil or wetland hydrology is present and past human activities have occurred to remove the historic vegetation.

The City does not regulate ephemeral/intermittent drainages unless wetland vegetation is present or has been removed by human activity. Areas that contain wetland vegetation, soils, or hydrology created by human activities in historically non-wetland areas do not qualify as wetlands under this definition unless they have been determined to be wetlands under USACE and/or the CDFW criteria.

Per this definition, none of the drainages at the site are City wetlands; however, many wetland vegetation patches along the drainages are City wetlands. The vegetation in the channel at SD 1 was considered a USACE/CDFW wetland and so would also be considered City jurisdiction (see Figure 6). While the drainage passing the outfall area of SD 2 and SD 3 is not City jurisdiction, at the end of the canyon where Mexican fan palms are growing out of saturated sand, the patch is a USACE and CDFW wetland and therefore a City wetland (see Figure 8).

The detention basin east of SD 2 through which access to SD 2 will occur is man-made, created in 1998, and planted with native species, in what was previously an upland adjacent to an ephemeral drainage area (Google Earth 2026); however, portions of the detention basin were delineated as being jurisdictional wetland to the USACE and CDFW and therefore are also City wetlands (see

Figure 8). Only the irrigated areas of spiny rush and march elder on the eastern slope and ramp are not considered City wetland.

Neither other agency nor City wetlands occur at SD 4. At SD 5, some of the Freshwater Marsh, Mule Fat Scrub, and Southern Riparian Scrub areas could not be fully accessed to determine status, and will not be impacted, but are likely City wetlands (see Figure 12).

The City also applies wetland buffers to development: A wetland buffer shall be maintained around all wetlands as appropriate to protect the functions and values of the wetland (City 2018). Section 320.4(b)(2) of the USACE General Regulatory Policies (33 CFR 320-330) list criteria for consideration when evaluating wetland functions and values.

Wetlands considered to perform functions important to the public interest include:

(i) Wetlands which serve significant natural biological functions, including food chain production, general habitat and nesting, spawning, rearing and resting sites for aquatic or land species;
(ii) Wetlands set aside for study of the aquatic environment or as sanctuaries or refuges;
(iii) Wetlands the destruction or alteration of which would affect detrimentally natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics;
(iv) Wetlands which are significant in shielding other areas from wave action, erosion, or storm damage. Such wetlands are often associated with barrier beaches, islands, reefs, and bars;
(v) Wetlands which serve as valuable storage areas for storm and flood waters;
(vi) Wetlands which are ground water discharge areas that maintain minimum baseflows important to aquatic resources and those which are prime natural recharge areas;
(vii) Wetlands which serve significant water purification functions; and
(viii) Wetlands which are unique in nature or scarce in quantity to the region or local area.

The wetlands that would be impacted during implementation of the project vary in forms and function. The only criterion that is applicable to wetlands within the project Study Area is (i) "Wetlands which serve significant natural biological functions, including food chain production, general habitat and nesting, spawning, rearing and resting sites for aquatic or land species." because the wetlands are in Open Space lands that are part of the City's MHPA which was designed to protect sensitive species.

Wetlands for this project are within open space areas. Their existing buffers will not be reduced by this project. Temporary effects to wetlands and buffers will be restored and mitigated. Permanent impacts near wetlands are minimal (outfalls with energy dissipation) and have been designed to avoid direct impacts to the wetlands but are essential for preventing damage from storm water entering the canyon bottoms in an uncontrolled manner. The proposed Project will not significantly reduce existing buffers and will protect the functions and values of the drainage into which these storm drains will drain. And because this is an Essential Public Project (EPP), findings in support of that designation are provided.

3.3.5 Critical Habitat

There is no Designated Critical Habitat within or near the project alignments (USFWS 2025b). The nearest Designated Critical Habitat is to the east across I-15 on the mesa half a mile away. The next nearest is over one mile to the north, east of Montgomery Field. Both areas of Designated Critical Habitat are for San Diego fairy shrimp (*Branchinecta sandiegonensis*) which requires vernal pools, none of which were detected, and flat land that is scarce in the project vicinity.

3.3.6 Wildlife Corridors

Wildlife movement corridors are areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetative cover provide corridors for wildlife movement. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations.

The canyons of Serra Mesa provide habitat and local movement opportunities for wildlife. Local populations of reptiles and mammals are constrained by development from moving outside the community's connected canyons, but birds and insects can fly from this area to other canyons or open space areas including the San Diego River. The presence of the CAGN indicates that the species can move to and from the canyons from outside the study area. There is no expectation that the canyons act as regional corridors, though larger mammals such as coyote (*Canis latrans*) and mule deer (*Odocoileus hemionus*) can pass through developed areas or very constrained connections. The canyons are not identified as Core Areas, Corridors, or Linkages in the Final MSCP Plan (City 1998) or in the City's MSCP Subarea Plan (1997) but may provide resources and act as steppingstones for birds passing through this portion of San Diego.

4.0 MSCP CONSISTENCY ANALYSIS

4.1 Multi-Habitat Planning Area Preserve

The MSCP (City 1997) identifies an MHPA that is intended to link all core biological areas into a regional wildlife preserve. As shown in Figure 5 through Figure 11 the Project area is partially within MHPA and supports sensitive species. All or part of the access routes to all five storm drains pass through the MHPA and all outfalls except for SD 1 are within the MHPA.

The City's MSCP Subarea Plan (1997) identifies policies and guidelines in §1.4 for projects that are in or adjacent to the MHPA. Under §1.4.1, utility lines, and roads in compliance with policies in §1.4.2 and limited water facilities and other essential public facilities are identified as allowed in the MHPA. §1.4.2 contains General Planning Policies and Design Guidelines, §1.4.3 are the City's MHPA Land Use Adjacency Guidelines (LUAG; 1997). Discussion of the City's MSCP Framework Management Plan in §1.5 of the MSCP Subarea Plan (1997) identifies General Management Directives in §1.5.2 that apply to all areas of the MSCP Subarea Plan. These policies and guidelines are described in the following sections.

It should be noted that current citywide storm drain design involves area-wide drainage analysis with the intent of routing pipelines in developed or non-sensitive areas and reducing the number of outfalls where possible. SD replacement projects are intended to upgrade the efficiency of a deteriorated facility to serve an existing service area. The proposed Project is to replace existing storm drain facilities that have failed (SDs 3 and 4) and upgrade facilities of similar age and subject to failure (SDs 1, 2, and 5). As such, and with Green Infrastructure being applied where feasible, no new introduction or increase in urban runoff, invasive species, or toxic substances would result from Project implementation.

4.2 General Planning Policies and Design Guidelines

The following general planning policies and design guidelines from §1.4.2 of the MSCP Subarea Plan (1997) should be applied in the review and approval of development projects within or adjacent to the MHPA. More specific policies and guidelines which are unique to individual MHPA areas are identified under §1.2.1-1.2.5, and management policies and directives are in §1.5. Compliance is demonstrated below.

Roads and Utilities—Construction and Maintenance Policies

Policy:

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

Compliance:

Storm water must be removed from neighborhood streets to prevent flooding. No other routing or means of carrying storm water is currently feasible because the storm drain system uses gravity to transport storm water. Access to the alignments for replacement is from public streets (all alignments) and along utility access roads or trails, when present (SD 1 in part, SD 4 in part, and SD 5). New temporary access is required for some alignments (SD 1 in part, SD 2, and SD 4 in part). Impacts from access were directed to disturbed or non-native over native vegetation when feasible. The SD 3 alignment is immediately off Shawn Avenue. The storm drains will be replaced mostly in or near their existing locations and will continue to be buried in the canyon slopes which will be revegetated minimizing habitat fragmentation. Efforts to avoid impacts have been applied but feasible access is limited and the storm drain alignments are mostly within the MHPA and impacts cannot be avoided. The proposed project complies with this policy.

Policy:

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

Compliance:

The project is replacing existing storm drainpipes that have failed or are in danger of failing and not new development. The design has been modified to reduce impacts to sensitive resources, by adjusting access routes (SDs 1 and 2) to avoid native sensitive plants, wetlands, and vegetation communities or through relocating specific individuals (San Diego barrel cactus at SD 2). Outfalls and energy dissipation have been kept in uplands and out of wetlands. The access and pipe alignments will be revegetated back to habitat and all impacts to sensitive biological resources will be mitigated. The only permanent features in habitat will be manholes, cutoff walls, and outfalls. All impacts to sensitive habitats shall be mitigated. The proposed project complies with this policy.

Policy:

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

Compliance:

No permanent roads are being created. Temporary access roads and construction areas will be revegetated, and staging areas will be on public streets. The lifespan of the new storm drains is 40 or more years. Maintenance with vehicles is not expected during that timeframe so revegetation of habitat is warranted. All impacts to sensitive habitats shall be mitigated per City requirements. The proposed project complies with this policy.

Policy:

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

Compliance:

The proposed project is not in a regionally identified wildlife corridor and would not impact regional wildlife movement. The project would minimally impact movement within the canyons during construction. Birds and insects will continue to freely move across the construction area. A worker environmental education program will be given to the work crew(s) by the Project Biologist (See §7.3). The proposed project complies with this policy (full details provided in Section 7.1 Avoidance and Minimization Measures).

Policy:

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

Compliance:

Not Applicable

Policy:

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

Compliance:

Not Applicable

Policy:

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

Compliance:

Not Applicable

Policy:

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

Compliance:

The proposed project will use existing utility access where available (a portion of SD 4 and most of SD 5) but will not create any new permanent roads. Temporary access would be constructed for a portion of SD 1, SD 2, and a portion of SD 4. No access is required for SD 3. All impacts to sensitive resources resulting from gaining access would be revegetated and mitigated. The proposed project complies with this policy.

Fencing, Lighting, and Signage

Policy:

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

Compliance:

Not Applicable

Policy:

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

Compliance:

No temporary or permanent lighting will be used for construction. No nighttime construction will be allowed because of adjacent habitat sensitivity. There are no official trails for access to SDs 1-4, and no signage is present other than an "Off Road Vehicle Activity Prohibited" sign at the eastern end of Shawn Avenue. Signage is present at the western end of Shawn Avenue at the head of the official Shawn Canyon Trail that leads to Ruffin Canyon Trail that will be used for access to SD 5. No additional signage is proposed. The proposed project complies with this policy.

Materials Storage

Policy:

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

Compliance:

Storage of materials will not be located within the MHPA. Staging areas will be on City streets and rights-of-way (see Figure 3). This will be made clear as part of the worker environmental education program and is a LUAG requirement. The proposed project complies with this policy.

Mining, Extraction, and Processing Facilities

Not Applicable

Flood Control

Policy:

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

Compliance:

The proposed project would replace storm drains that have failed (SDs 3 and 4), or are in danger of failing (SDs 1, 2, and 5), to address existing erosional issues and prevent future failures in canyons located within the MHPA. Several other storm drains in the area have failed causing significant erosion and deposition of sediment downstream. The proposed project will prevent such failures in these locations in future decades. Impacts will be revegetated to restore the ecological, geological, hydrological, and other natural processes. The proposed project complies with this policy.

Policy:

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

Compliance:

The Proposed project would replace storm drains that have failed (SDs 3 and 4), or are in danger of failing (SDs 1, 2, and 5), which manage storm waterflow into the canyons located within the MHPA. Green Infrastructure, consisting of a modular wetland system to pretreat and infiltrate storm water will be created at the end of Shawn Avenue above the SD 3 alignment will reduce flows into the MHPA from Shawn Avenue. New outfalls with energy dissipaters and rip rap will be used for all storm drains to reduce velocities of the water entering the canyon drainages and not for stabilizing banks of channels within the MHPA. Water from SDs 1-3 enters a detention basin built to protect the Stonecrest Village Community from flood flows. The proposed project complies with this policy.

4.3 Multi-Habitat Planning Area Land Use Adjacency Guidelines

The City's Subarea Plan includes recommendations so that development activities adjacent or in close proximity to the MHPA will be subject to special conditions so that minimal impacts to the Preserve area can be assured. Potential impact issues requiring compliance include drainage, lighting, noise, barriers, invasive species, and brush management, all of which will be addressed below for this project.

Drainage

Policy:

All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. These systems should be maintained approximately once per year, or as often as needed, to ensure proper functioning. Maintenance should include dredging out of sediments if needed, removing exotic plant materials, and adding chemical-neutralizing compounds (e.g., clay compounds) when necessary and appropriate.

Compliance:

The Project will not create parking lots or new development. Ground disturbance for the proposed Project will largely consist of vehicular access on flat or gently to moderate sloping land and utility trenching on steep slopes. Erosion control best management practices will control runoff during Project implementation. With a lifespan of 40 years or more, no maintenance is required by vehicle and revegetation is warranted. All temporarily impacted habitats will be revegetated.

Consistent with the City Storm Water Standards, no changes will occur to existing previously legal drainage which flows toward the MHPA.

Toxic Substances

Policy:

Land uses, such as recreation and agriculture, that use chemicals or generate by- products such as manure, that are potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA. Such measures should include drainage/detention basins, swales, or holding areas with non-invasive grasses or wetland-type native vegetation to filter out the toxic materials. Regular maintenance should be provided. Where applicable, this requirement should be incorporated into leases on publicly owned property as leases come up for renewal.

Compliance:

The proposed Project will not change the land use and will leave the land in a similar condition as before. Green infrastructure, with pretreatment of street runoff, will occur at SD 3 to reduce contaminants from Shawn Avenue and Mission Valley Drive from entering the MHPA. The contractor shall ensure all areas for staging, storage of equipment and materials, trash, equipment maintenance, and other construction related activities are on public streets or within the limits of work. During construction, all maintenance of any construction equipment (e.g., refueling, oil changing, hydraulic maintenance) will be conducted within designated best management practice-fortified areas in the grading area or off site in a manner that will not allow the release of toxins, chemicals, petroleum into the Open Space or MHPA. If fluid leaks occur from equipment, any contaminated soil will be removed and disposed of appropriately. Toxins, chemicals, or petroleum products from construction will not enter the MHPA.

Consistent with the City Storm Water Standards, no changes will occur to existing previously legal drainage which flows toward the MHPA.

Lighting

Policy:

Lighting of all developed areas adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.

Compliance:

The proposed Project does not include any lighting, and work shall only occur during daylight hours. As no lighting will be used, no lighting effects on the MHPA occur. The Project will comply with this guideline.

Noise

Policy:

Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noises that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.

Compliance:

Presence is assumed for the CAGN as the species was detected or suitable habitat occurs for the species at or near SD 1 through SD 5. Project activities within the MHPA at all storm drains will need to be limited between March 1 and August 15 unless pre-construction surveys show no CAGN are present. Adherence to Avoidance and Minimization Measure (AMM) 2 will ensure that noise impacts for this species will be avoided.

Barriers

Policy:

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

Compliance:

The proposed Project is replacement of storm drains and temporary access to work area in canyons that are designated as open space containing MHPA. The impacts will be temporary. No structures will be created and barriers to protect the open space are not proposed. Impacts to the land will be restored to preconstruction contours and revegetated after completion. Any fencing on private properties that is removed to complete the proposed Project will be replaced.

Invasive Species

Policy:

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

Compliance:

The replacement of the storm drain structures will not introduce invasive non-native plant species, but non-native species may invade disturbed areas. Weed control of the project impact area during construction should be made a condition of approval in the Site Development Permit to ensure the Project does not become a weed source in the MHPA. No invasive, non-native plant species are included in plant palettes and invasive species shall be controlled during the Plant Establishment Period and Maintenance Period. No Plant species planted within 100 ft of the MHPA shall comply with the Landscape Regulations (LDC142.0400 and per table 142-04F, Revegetation and Irrigation Requirements). See the Landscape Construction Documents for the Project (Rick Engineering 2026).

Brush Management

Policy:

New development located adjacent to and topographically above the MHPA (e.g., along canyon edges) must be set back from slope edges to incorporate Zone 1 brush management areas on the pad and outside of the MHPA. Zone 2 may be located in the MHPA upon granting of an easement to the City (or other acceptable agency) except where narrow wildlife corridors require it to be located outside of the MHPA. Brush management zones will not be greater in size than is currently required by the City's regulations. Initial thinning of woody vegetation shall not exceed 50% coverage of the existing vegetation prior to implementation of brush management activities. Additional thinning and pruning shall be done consistent with City standards to obtain minimum vertical and horizontal clearances and shall avoid/minimize impacts to covered species to the maximum extent possible. For all new development, regardless of ownership, brush management in the Zone 2 area will be the responsibility of a homeowners' association or other private party.

For existing and approved projects, the brush management zones, standards and locations, and clearing techniques will not change from those required under existing regulations.

Compliance:

The Project is not a residential or commercial development and would not create any new brush management zones. As a result, no additional impacts to the Open Space or MHPA will occur from brush management.

Grading

Policy:

Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA.

Compliance:

New manufactured slopes are not proposed as part of this Project. Project impacts would only occur within the project footprint, including new or widened temporary access roads. Trenching for new storm drains and repair to eroded areas as a result of storm drain failure would be backfilled and revegetated in accordance with the revegetation plan (Rick Engineering 2026).

4.4 General Management Directives (MSCP Subarea Plan §1.5.2)

Many of the City's MSCP Subarea Plan General Management Directives (§1.5.2 of the City's MSCP Subarea Plan) apply to management of lands preserved under the program, which is the responsibility of the City as set forth under the MSCP implementing agreement. Generally, the department with ownership of MHPA lands preserved under the MSCP has responsibility for management required under the MSCP. For the project Study Area, the lands within the MHPA are mostly owned by the City's Park and Recreation Department (PRD), so management would generally be under their domain. The detention basin through which access is required to SD 2 is part of the open space managed and maintained by Stonecrest Village.

Section §1.5.2 includes pertinent management directives regarding: Mitigation; Restoration; Public Access, Trails, and Recreation; Litter/Trash and Materials Storage; Adjacency Management Issues; Invasive Exotics Control and Removal; and Flood Control that would be applicable to this project. Each directive and an analysis of each one is provided below.

Mitigation

Policy:

Mitigation, when required as part of project approvals, shall be performed in accordance with the City's ESL Regulations and Biology Guidelines.

Compliance:

Project mitigation shall be performed in accordance with all City ESL Regulations and Biology Guidelines (2018), as outlined in Section 1.2 above, and in the Landscape Construction Documents (Rick Engineering 2026) in Appendix H.

Restoration

Policy:

Restoration or revegetation undertaken in the MHPA shall be performed in a manner acceptable to the City. Where covered species status identifies the need for reintroduction and/or increasing the population, the covered species will be included in restoration/revegetation plans, as appropriate. Restoration or revegetation proposals will be required to prepare a plan that includes elements addressing financial responsibility, site preparation, planting specifications, maintenance, monitoring, and success criteria, and remediation and contingency measures. Wetland restoration/revegetation proposals are subject to permit authorization by federal and state agencies.

Compliance:

Restoration Landscape Construction Documents have been prepared (Rick Engineering 2026), and final Landscape Construction Documents will be submitted for approval. San Diego barrel cactus translocation is described Section 7.3.

Public Access Trails, and Recreation

Policy:

Provide sufficient signage to clearly identify public access to the MHPA. Barriers such as vegetation, rocks/boulders or fencing may be necessary to protect highly sensitive areas. Use appropriate type of barrier based on location, setting and use. For example, use chain link or cattle wire to direct wildlife movement, and natural rocks/boulders or split rail fencing to direct public access away from sensitive areas. Lands acquired through mitigation may preclude public access in order to satisfy mitigation requirements.

Compliance:

There are no official trails for SDs 1-4 and no signage is present other than a "Off Road Vehicle Activity Prohibited" sign at the eastern end of Shawn Avenue. Signage is present at the western end of Shawn Avenue at the head of the official Shawn Canyon Trail that leads to Ruffin Canyon Trail which provides access for SD 5. No additional signage is proposed. New temporary signage during revegetation will include "revegetation in progress" signs to keep the public out of revegetation areas while it is being implemented and maintained. Trail access will continue to be provided during the proposed project installation and revegetation.

Policy:

Locate trails, view overlooks, and staging areas in the least sensitive areas of the MHPA. Locate trails along the edges of urban land uses adjacent to the MHPA, or the seam between land uses (e.g., agriculture/habitat), and follow existing dirt roads as much as possible rather than entering habitat or wildlife movement areas. Avoid locating trails between two different habitat types (ecotones) for longer than necessary due to the typically heightened resource sensitivity in those locations.

Compliance:

The proposed project will not create new trails and will revegetate unauthorized trails if used for alignment access. The existing authorized trails will be kept open during the proposed project revegetation.

Policy:

In general, avoid paving trails unless management and monitoring evidence shows otherwise. Clearly demarcate and monitor trails for degradation and off-trail access and use. Provide trail repair/maintenance as needed. Undertake measures to counter the effects of trail erosion including the use of stone or wood cross joints, edge plantings of native grasses, and mulching of the trail.

Compliance:

The proposed project does not propose new trails. No paving of existing trails will occur. The City PRD will provide management of the open space according to the MSCP Framework Management Plan (Section 1.5.2 of the MSCP Subarea Plan).

Policy:

Minimize trail widths to reduce impacts to critical resources. For the most part, do not locate trails wider than 4 ft in core areas or wildlife corridors. Exceptions are in the San Pasqual Valley where other agreements have been made, in Mission Trails Regional Park, where appropriate, and in other areas where necessary to safely accommodate multiple uses or disabled access. Provide trail fences or other barriers at strategic locations when protection of sensitive resources is required.

Compliance:

The proposed project will maintain existing authorized trails at SD 5. No new trails are proposed, and no existing trails will be changing their status to provide access for the disabled.

Policy:

Limit the extent and location of equestrian trails to the less sensitive areas of the MHPA. Locate staging areas for equestrian uses at a sufficient distance (e.g., 300-500 ft) from areas with riparian and Coastal Sage Scrub (CSS) habitats to ensure that the biological values are not impaired.

Compliance:

No equestrian use will be allowed because of this proposed Project.

Policy:

Off-road or cross-country vehicle activity is an incompatible use in the MHPA, except for law enforcement, preserve management or emergency purposes. Restore disturbed areas to native habitat where possible or critical, or allow to regenerate.

Compliance:

No vehicle activity by the public will be allowed in the open space portion of the Study Area because of this project. The authorized trails will be maintained to allow access to hikers. Areas disturbed by the proposed project outside of the identified trail at SD 5 will be revegetated with

native species. All unauthorized trails used as temporary accesses to storm drain alignments will be revegetated after project completion.

Policy:

Limit recreational uses to passive uses such as birdwatching, photography and trail use. Locate developed picnic areas near MHPA edges or specific areas within the MHPA, in order to minimize littering, feeding of wildlife, and attracting or increasing populations of exotic or nuisance wildlife (opossums, raccoons, skunks). Where permitted, restrain pets on leashes.

Compliance:

Recreation is already limited to passive uses per open space regulations and no additional recreational facilities or uses are being proposed as part of the project. The trails currently approved at SD 5 in Shawn and Ruffin Canyons will be allowed to continue being used during the proposed Project and revegetation.

Policy:

Remove homeless and itinerant worker camps in habitat areas as soon as found pursuant to existing enforcement procedures.

Compliance:

No itinerant worker camps are known to be present or expected in the Study Area; however, if homeless camps occur, City PRD will be informed and will be responsible for removing them.

Policy:

Maintain equestrian trails on a regular basis to remove manure (and other pet feces) from the trails and preserve system in order to control cowbird invasion and predation. Design and maintain trails where possible to drain into a gravel bottom or vegetated (e.g., grass-lined) swale or basin to detain runoff and remove pollutants.

Compliance:

No horses are allowed in the open space. No trails improvements will be made. City PRD will continue to manage the canyon open spaces.

Litter/Trash and Materials Storage

Policy:

Priority 1:

1. *Remove litter and trash on a regular basis. Post signage to prevent and report littering in trail and road access areas. Provide and maintain trash cans and bins at trail access points.*
2. *Impose penalties for littering and dumping. Fines should be sufficient to prevent recurrence and also cover reimbursement of costs to remove and dispose of debris, restore the area if needed, and to pay for enforcement staff time.*
3. *Prohibit permanent storage of materials (e.g., hazardous and toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, due to potential leakage.*

4. *Keep wildlife corridor under crossings free of debris, trash, homeless encampments, and all other obstructions to wildlife movement.*

Priority 2:

Evaluate areas where dumping recurs for the need for barriers. Provide additional monitoring as needed (possibly by local and recreational groups on a "Neighborhood Watch" type program), and/or enforcement.

Compliance:

The City PRD is responsible for implementing the litter/trash and priorities of the Framework Management Plan in the canyon open spaces.

Adjacency Management Issues

The following management directives are in addition to those outlined in Section 1.4.3 of the City's MSCP Subarea Plan and refer more specifically to management and monitoring requirements. The City PRD is responsible for implementing the following priorities:

Priority 1:

- *Enforce, prevent and remove illegal intrusions into the MHPA (e.g., orchards, decks, etc.) on an annual basis, in addition to complaint basis.*
- *Disseminate educational information to residents adjacent to and inside the MHPA to heighten environmental awareness, and inform residents of access, appropriate plantings, construction or disturbance within MHPA boundaries, pet intrusion, fire management, and other adjacency issues.*
- *Install barriers (fencing, rocks/boulders, vegetation) and/or signage where necessary to direct public access to appropriate locations.*

Invasive Exotics Control and Removal

It is the responsibility of City PRD to ensure exotic removal and control in City open spaces. During proposed project implementation it will be the responsibility of the construction contractor to ensure that invasive exotic species within construction limits and during revegetation shall be removed.

Priority 1:

- *Do not introduce invasive non-native species into the MHPA. Provide information on invasive plants and animals harmful to the MHPA, and prevention methods, to visitors and adjacent residents. Encourage residents to voluntarily remove invasive exotics from their landscaping.*
- *Remove giant reed (*Arundo donax*), tamarisk (*Tamarix *spp.), pampas grass (*Cortaderia jubata*), castor bean (*Ricinus communis*), artichoke thistle (*Cynara cardunculus*), and other exotic invasive species from creek and river systems, canyons and slopes, and elsewhere within the MHPA as funding or other assistance becomes available. If possible, it is recommended that removal begin upstream and/or upwind and move downstream/downwind to control reinvasion. Priorities for removal should be based on invasive species' biology (time of flowering, reproductive capacity, etc.), the immediate need of a specific area, and where removal could increase the habitat available for use by covered species such as the*

*least Bell's vireo (*Vireo bellii pusillus*). Avoid removal activities during the reproductive seasons of sensitive species and avoid/minimize impacts to sensitive species or native habitats. Monitor the areas, provide additional removal, and apply herbicides if necessary. If herbicides are necessary, all safety and environmental regulations must be observed. The use of heavy equipment, and any other potentially harmful or impact-causing methodologies, to remove the plants may require some level of environmental or biological review and/or supervision to ensure against impacts to sensitive species.*

Priority 2:

- *If funding permits, initiate a baseline survey with regular follow-up monitoring to assess invasion or reinvasion by exotics and to schedule removal. Utilize trained volunteers to monitor and remove exotic species as part of a neighborhood, community, school, or other organization's activities program (such as Friends of Peñasquitos Preserve has done). If done on a volunteer basis, prepare and provide information on methods and timing of removal to staff and the public if requested. For giant reed removal, the Riverside County multi-jurisdictional management effort and experience should be investigated, and relevant techniques used. Similarly, tamarisk removal should use the Nature Conservancy's experience in the Southern California desert regions, while artichoke thistle removal should reference the Nature Conservancy's experience in Irvine. Other relevant knowledge and experience is available from the California Invasive Plant Council and the Friends of Los Peñasquitos Canyon Preserve.*
- *Conduct an assessment of the need for cowbird trapping in each area of the MHPA where cattle, horses, or other animals are kept, as recommended by the habitat management technical committee in coordination with the wildlife agencies.*
- *If eucalyptus trees die or are removed from the MHPA area, replace with appropriate native species. Ensure that eucalyptus trees do not spread into new areas, nor increase substantially in numbers over the years. Eventual replacement by native species is preferred.*
- *On a case-by-case basis some limited trapping of non-native predators may be necessary at strategic locations, and where determined feasible to protect ground and shrub-nesting birds, lizards, and other sensitive species from excessive predation. This management directive may be considered a Priority 1 if necessary to meet the conditions for species coverage. If implemented, the program would only be on a temporary basis where a significant problem has been identified and therefore needed to maintain balance of wildlife in the MHPA. The program would be operated in a humane manner, providing adequate shade and water, and checking all traps twice daily. A domestic animal release component would be incorporated into the program. Provide signage at access points and noticing of adjacent residents to inform people that trapping occurs, and how to retrieve and contain their pets.*

Flood Control

Priority 1:

- *Perform standard maintenance, such as clearing and dredging of existing flood channels, during the non-breeding or nesting season of sensitive bird or wildlife species utilizing the riparian habitat. For the least Bell's vireo, the non-breeding season generally includes mid-September through mid-March.*

Priority 2:

- *Review existing flood control channels within the MHPA periodically (every five to ten years) to determine the need for their retention and maintenance, and to assess alternatives, such as restoration of natural rivers and floodplains.*

These management directives are in addition to the general planning policies and guidelines outlined in City MSCP Subarea Plan Section 1.4.2 (see above). They are intended to apply to the entity in control of the channels which is City PRD and not to specific projects occurring on those lands.

- There are no flood control channels within the open space areas managed by the City PRD.
- Water from SDs 1-3 enters a detention basin built to protect the Stonecrest Community from flood flows and may be managed by the Stonecrest Homeowners' Association.
- Green Infrastructure, using a modular wetland system to pretreat and infiltrate storm water, reducing pollutants entering the canyon at SD 3 will reduce flows down the canyon.
- Creeks in Shawn and Ruffin Canyons near SD 5 are not managed for flood flows. Maintenance in these canyons includes recent removal of invasive palms and Brazilian pepper trees.

4.5 Specific Management Directives

The City's MSCP Subarea Plan includes specific management directives for various portions of the MHPA throughout the City. There are no specific management directives in the Subarea Plan that relate to the proposed Project area.

4.6 Special Conditions for Covered Species

Special conditions apply to covered species that would be impacted by a Project. These conditions apply to species classified as "narrow endemic" and other species specifically called out in the City's MSCP Subarea Plan (1997). No narrow endemic species were observed or are expected to occur within the Project area (Appendix C), but San Diego barrel cactus, CAGN, and orange-throated whiptail which are covered by the MSCP, were observed or detected within the study area, and rufous-crowned sparrow has a greater than low potential to occur. The Special Conditions for Coverage for these species are as follows:

San Diego Barrel Cactus

Area specific management directives must include measures to protect this species from edge effects, unauthorized collection, and include appropriate fire management/control practices to protect against a too frequent fire cycle.

Compliance

Staking and Environmentally Sensitive Area fencing will be placed to protect Work Areas from impinging on San Diego barrel cactus to ensure that impacts to the species are avoided. Restoration of CSS after Project installation which will reduce edge effects and increase the acreage of CSS and San Diego barrel cactus habitat in the canyons.

Coastal California Gnatcatcher

Area specific management directives must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure. No clearing of occupied habitat within the cities' MHPAs and within the County's Biological Resource Core Areas may occur between March 1 and August 15.

Compliance:

As suitable habitat for CAGN occurs within the proposed Project footprints within MHPA and CAGN was detected within 300 ft of alignments in 2016, 2017, 2022, and 2025, the species likely occurs in the vicinity of the Project area. AMM 2 will be applied. After Project completion, the work area outside of the brush management zones for the adjacent homes, which consist mostly of Tier IV habitats, will be restored to CSS which will reduce edge effects and increase the acreage of CSS in the canyon compared to before Project implementation.

Orange-Throated Whiptail

Area specific management directives must address edge effects.

Compliance:

Orange-throated whiptail has been observed and suitable habitat for orange-throated whiptail occurs within the proposed Project areas. While the area is not subject to Area Specific Management Directives, protections for orange-throated whiptail will be accomplished by be restoration of CSS after Project installation which will reduce edge effects and increase the acreage of CSS and orange-throated whiptail habitat in the canyons.

Rufous-Crowned Sparrow

Area Specific Management Directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.

Compliance

Suitable rufous-crowned sparrow habitat occurs within the proposed Project area. While the area is not subject to Area Specific Management Directives, those identified for rufous-crowned sparrow and CAGN are conflicting in regard to edge effects. While Work Areas outside of brush management zones for the homes at the top of the alignments will be restored to CSS, an edge will be maintained between the CSS and brush management zones. There are also plenty of openings in adjacent habitat which will be suitable for rufous-crowned sparrow.

Monitoring Project implementation by a Qualified Biologist and application of the MHPA LUAGs (§4.3) and the AMMs (§7.1-7.3) will ensure these compliance measures will be applied, and that the Project effects on these covered species will be avoided and minimized. The vast majority of the Project impacts to habitat are temporary and no long-term changes to dynamic processes will occur.

5.0 IMPACTS

5.1 Direct Impacts

Direct impacts occur when biological resources are altered or destroyed during the course of, or as a result of, Project implementation. Examples of such impacts include clearing and grubbing of vegetation, grading, loss of foraging or nesting habitat, and loss of individual species as a result of habitat clearing.

Impacts may be permanent or temporary. Permanent impacts occur when biological resources are removed and replaced with structures or continued activity. Temporary impacts occur when biological resources are impacted, but after Project completion are allowed to recover or are actively restored to their former condition. It is assumed that impacts from the new outfalls and manholes would be permanent but that earthwork on the alignment and impacts from access would be temporary as the land surface would be returned to its original contours and habitat restoration would occur. Both permanent and temporary impacts to sensitive resources require mitigation per the City Biology Guidelines (2018).

Impacts to vegetation communities from replacement of the five storm drains is divided into impacts from the storm drain replacement "Work Areas" and "Access" to the Work Areas. Impacts are also identified as temporary and permanent impacts to differentiate what will be restored and what will remain permanently impacted. Impacts within the storm drain alignments are largely unavoidable. Access Routes were constrained by feasibility of getting needed machinery to the Work Areas and to be able to cut and full on slopes that are too steep to cross, while simultaneously minimizing impacts to sensitive habitats. It was assumed that a 16-ft width was needed for machinery access, for potential cut and fill on slopes, and for machinery and personnel to pass by other machinery through to the alignment. It is likely some impacts along the access routes can be avoided through minimization to the maximum extent feasible and with protective measures for sensitive species during Project implementation. A 40-ft width was assumed for the Work Areas.

5.1.1 Vegetation Communities

Vegetation community impacts occur to a total of 3.14 acres with impacts of 0.132 acre to wetlands (0.073 acre to the unvegetated channel, 0.054 acre to Herbaceous Wetlands, 0.003 acre to Freshwater Marsh, and 0.001 acre to Mule Fat Scrub), and 1.12 acres to Tier II CSS communities (Table 5). The remaining 1.88 acres of impacts are to Tier IIIa (0.03 acre), Tier IIIb (0.02 acre), and Tier IV communities (1.83 acre) including Disturbed, Developed, and NNV communities. The impacts are identified in Figure 5, Figure 7, Figure 9, and Figure 11, summarized in Table 3 and Table 4, and broken down by storm drain in Table 5.

5.1.2 Sensitive Plants

Impacts in the form of possible removal will occur to decumbent goldenbush, San Diego barrel cactus, San Diego marsh-elder, San Diego sunflower, San Diego sagewort, and southwestern spiny rush (Figure 5, Figure 7, Figure 9, Figure 11; Table 6).

Table 3. Summary of Temporary and Permanent Impacts to Vegetation Communities (acres).

MSCP Tier	IMPACTS[1] (acres)		
	Total		Total
	Temporary	Permanent	
Wetlands	0.132	-	0.132
Tier I	-	-	-
Tier II	1.11	0.01	1.12
Tier IIIa	0.02	0.01	0.03
Tier IIIb	0.02	<0.01	0.02
Tier IV	1.81	0.02	1.83
Total	**3.09**	**0.04**	**3.14**

Notes:
[1] Wetlands are presented to the nearest 0.001 acre whereas uplands are presented to the nearest 0.01 acre.

Table 4. Summary of Impacts to Vegetation Communities within and outside of the MHPA (acres).

MSCP Tier	IMPACTS[1] (acres)		
	Total		Combined Total
	MHPA	Non-MHPA	
Wetlands	0.132	-	0.132
Tier I	-	-	-
Tier II	0.95	0.17	1.12
Tier IIIa	0.03	-	0.03
Tier IIIb	0.02		0.02
Tier IV	1.04	0.79	1.83
Total	**2.18**	**0.96**	**3.14**

Note:
[1] Wetlands are presented to the nearest 0.001 acre whereas uplands are presented to the nearest 0.01 acre.

Table 5. Impacts to Holland Vegetation Communities by SD (acres).

Vegetation Community	Impact (acres)					
	SD 1	SD 2	SD 3	SD 4	SD 5	Total[1]
Wetlands[2]						
Freshwater Marsh	-	-	-	-	0.003	0.003
Mule Fat Scrub	-	-	-	-	0.001	0.001
Herbaceous Wetland	-	0.054	-	-	-	0.054
Unvegetated Channel	-	-	-	-	0.073	0.073
Wetlands Subtotal[1]	-	***0.054***	-	-	***0.077***	***0.132***
Tier II						
Coastal Sage Scrub	0.05	0.23	0.15	0.12	0.09	0.65

Vegetation Community	Impact (acres)					
	SD 1	SD 2	SD 3	SD 4	SD 5	Total[1]
Coastal Sage Scrub – Baccharis-Dominated	-	-	-	-	0.08	0.08
Coastal Sage Scrub – Disturbed	-	-	-	-	-	-
Coastal Sage Scrub – Restored	-	-	-	-	0.02	0.02
Coastal Sage Scrub – Rhus-Dominated	0.03	0.08	0.05	0.01	0.22	0.38
Tier II Subtotal[1]	***0.08***	***0.31***	***0.20***	***0.13***	***0.41***	***1.12***
Tier IIIa						
Poison Oak Chaparral	-	0.03	-	-	-	0.03
Tier IIIa Subtotal[1]	-	***0.03***	-	-	-	***0.03***
Tier IIIb						
Non-Native Grassland	-	-	-	-	0.02	0.02
Tier IIIb subtotal					***0.02***	***0.02***
Tier IV						
Non-Native Vegetation	0.09	0.02	<0.01	0.12	0.08	0.32
Non-Native Vegetation, Ice Plant-Dominated	-	0.02	-	-	-	0.02
Non-Native Vegetation, Palm-Dominated[2]	0.05	0.01	0.01	-	-	0.07
Ornamental	-	0.09	-	-	-	0.09
Eucalyptus Woodland	-	-	0.05	0.02	-	0.07
Disturbed Habitat	0.17	0.01	0.10	0.28	0.44	1.00
Developed – Brow Ditch	-	<0.01	-	-	-	<0.01
Developed – Path	-	0.20	-	-	-	0.20
Developed	0.05	<0.01	-	0.01	-	0.06
Tier IV Subtotal[1]	**0.36**	**0.36**	**0.16**	**0.44**	**0.52**	**1.83**
Drain Total[1]	**0.44**	**0.74**	**0.36**	**0.57**	**1.03**	**3.14**

Notes:

[1] Totals may not add due to rounding.

[2] Wetlands are presented to the nearest 0.001 acre whereas uplands are presented to the nearest 0.01 acre.

Table 6. Potential Impacts to Sensitive Plants and Animals by SD.

Storm Drain	Plants				Animals	
	Nuttall's Scrub Oak	Decumbent Goldenbush	San Diego Barrel Cactus	San Diego Marsh-Elder*	Coastal California Gnatcatcher	Orange-Throated Whiptail
SD 1		6			w/in 300 ft	
SD 2			5	8 + 609 ft^2	w/in 300 ft	2
SD 3					w/in 300 ft	
SD 4					w/in 300 ft	
SD 5					w/in 300 ft	
Total	**0**	**6**	**5**	**8 + 609 ft^2**	**-**	**2**

***Note:** Impacts to San Diego marsh elder includes eight individuals and an area where individuals were not discernible.

Impacts to decumbent goldenbush could occur at SD 1 (144 individuals) and SD 4 (12 individuals) (see Figure 5 and Figure 9) but have been mostly avoided by moving the access away from the plants such that only six individuals out of over 150 will be impacted, which is not significant. Impacts to five San Diego barrel cacti could occur at SD 1 (see Figure 5) but will be avoided through Environmentally Sensitive Area fencing protection, if feasible, or translocation, and if translocation fails, planting of container stock or seeding. Impacts to 609 square feet (0.014 acre) of habitat supporting San Diego marsh-elder are within the access routes to SD 2 (see Figure 7). These individuals were planted in and around the detention basin and revegetation using this easily propagated species would reduce impacts to below significance. Impacts to Nuttall's scrub oak would be avoided as they are far outside the Work Area and access routes at SD 4 (see Figure 9).

Narrow Endemics

No City narrow endemics were detected and an analysis of their potential to occur (Appendix C) shows that all have no, a very low, or low potential to occur in the area studied. As a result, impacts to narrow endemic species are unlikely to occur.

5.1.3 Sensitive Animals

The only sensitive animals detected were the federal-listed as threatened CAGN and orange-throated whiptail. CAGN was detected within 300 ft of all access routes and/or Work Areas (see Figure 5-Figure 11; see Table 6). Orange-throated whiptail was detected adjacent to or within the access routes to SD 1 (see Figure 4), SD 2 (see Figure 7), and SD 4 (see Figure 9) but are likely present in the vicinity of all SD access routes and alignments. Impacts to these species would be avoided through application of the LUAGs, Special Conditions for Coverage, and AMMs.

Other sensitive animals are likely to occur within or adjacent to the potential active areas, but no other federally or state listed species would be expected to be impacted based on habitat present (Appendix E: Special Status Animal Species with Potential to Occur) and implementation of AMMs. Sensitive animals identified in Appendix E with a high or moderate potential to occur include the MSCP-covered Rufous-crowned Sparrow.

The CAGN is a covered species under the MSCP. As a result, compliance with the requirements of the MSCP ensures compliance with the federal Endangered Species Act.

5.1.4 Wildlife Corridors

The canyons of Serra Mesa provide habitat and only local movement opportunities for wildlife. No regional movement corridors exist because of barriers that delimit the canyons (residential and commercial development) and the community (freeways, major roads). Impacts from the proposed Project are minimal in area, temporary, would not impact regional wildlife movement, and would minimally impact movement within the canyons during construction. Birds and insects will continue to freely move across the construction area. After revegetation, all wildlife corridor functions would be restored. Effects would not be significant.

5.1.5 Jurisdictional Areas

Impacts would occur to 0.054 acre of USACE/RWQCB jurisdiction, to 0.155 acre of CDFW jurisdiction, and 0.132 acre of City jurisdiction (Table 7) at SDs 2 and 5 (see Figure 8 and Figure 12). Impacts are primarily from creating the access route that passes through the edge of the detention basin along a drainage to SD 2 (see Figure 7 and Figure 8) and expanding the access trail/maintenance road to SD 5 (see Figure 11 and Figure 12).

At SD 2, access from the Stonecrest Village paved trail passes down a ramp to the detention basin which was created in 1998. SD 2 is up the canyon from the detention basin along a portion of a drainage in the canyon that enters the basin from the west. The basin is mostly jurisdictional as is the drainage.

The streambed at SD 5 in Shawn Canyon is mostly off trail but briefly enters, passes along, and then leaves the existing access road. While on the road its features are continuously erased by pedestrian traffic and is used for maintenance of the sewer line and storm drains in the canyons (see Figure 12). In Shawn Canyon, the proposed Project would apply similar uses to the access road as sewer inspection and maintenance and are not considered an additional impact; however, impacts would occur to the streambed that forms the trail within Ruffin Canyon, to the banks, and to a small area of Mule Fat Scrub.

No jurisdictional features were identified at SD 4 (see Figure 10) and impacts to jurisdictional features are avoided for SDs 1 and 3 (see Figure 6).

Table 7. Summary of Impacts to Jurisdictional Areas.

Jurisdictional Feature	USACE/RWQCB (acres)	CDFW (acres)	City (acres)
Waters of the U.S./ CDFW Streambed			
Vegetated Non-Wetland Waters/Streambed	0.007	0.025	-
Unvegetated Non-Wetland Waters/Streambed/Natural Flood Channel	0.044	0.073	0.073
Subtotal[1]	***0.051***	***0.097***	***0.073***
Wetlands			
Freshwater Marsh	0.003	0.003	0.003
Herbaceous Wetland	-	0.027	0.027
Herbaceous Wetland - Irrigated	-	0.027	0.027
Mule Fat Scrub	-	0.001	0.001
Subtotal[1]	***0.003***	***0.058***	***0.058***
Total[1]	**0.054**	**0.155**	**0.132**

Notes:

[1] Totals may not add due to rounding.

5.1.5.1 Wetland Deviation Process

Under the City's ESL regulations (City 2018), impacts to wetlands outside of the Coastal Overlay Zone should be avoided and unavoidable impacts should be minimized to the maximum extent practicable where no feasible alternative occurs. Per the City's Land Development Code Biology Guidelines (City 2018), impacts to wetland habitat outside of the Coastal Overlay Zone require a deviation process from the wetland regulations (City 2018). Wetland impacts may be considered only pursuant to one of three options: EPP, Economic Viability, or Biologically Superior Options.

Under Section III.A.2.ii.A of the Biology Guidelines, the deviation from the wetland requirements of the ESL under the EPP option must meet specified criteria. Section IV.A.(d)(1)A and B(i)-(iv) identifies the types of projects that qualify:

A. A deviation may only be requested for an Essential Public Project where no feasible alternative exists that would avoid impacts to wetlands.

As stated in Section 4.3.2, current citywide storm drain design involves area-wide drainage analysis with the intent of routing pipelines in developed or non-sensitive areas and reducing the number of outfalls where possible.

The portions of the proposed Project that impacts wetlands are the access routes required to replace the damaged or deteriorating storm drainpipes and outfall structures. While the proposed Project's street-level storm water treatment structures may reduce storm water discharge into the canyons, it is essential that excess storm water be moved off streets and safely routed into canyon bottoms to prevent flooding, erosion, further environmental damage, and risk to homes along the canyon edge. There are no other feasible alternatives to move storm water off streets without a significantly higher cost, great inconvenience to residents, and would take decades to implement throughout the City.

B. For the purpose of this section, EPPs shall include:

(i) Any public Project identified in an adopted land use plan or implementing document and identified on the EPP List adopted by Resolution as Appendix III to the Biology Guidelines; or

(ii) Linear infrastructure, including but not limited to major roads and land use plan circulation element roads and facilities including bike lanes, water and sewer pipelines including appurtenances, and stormwater conveyance systems including appurtenances; or

(iii) Maintenance of existing public infrastructure; or

(iv) State and federally mandated projects.

The proposed Project is to upgrade to five existing, deteriorated linear stormwater conveyance systems including appurtenances in the Serra Mesa Community and qualifies under B(ii) and (iii).

EPP Option Criteria:

Section III.A.2.ii.A of the Biology Guidelines identifies the criteria that are applicable to satisfying the EPP option:

1. The Project must be an EPP (i.e., circulation element road, trunk sewer, water main) that will service the community at large and not just a single development Project or property. The Project must meet the definition of an EPP as identified in Section IV and must be essential in both location and need. If the City has options on the location of an EPP, the City should not knowingly acquire property for an EPP which would impact wetlands.

   The proposed Project will service all the residents of the streets above from which storm water drains to these facilities. As identified above it meets the Section IV definition of an EPP. It is essential because existing pipes and outfalls have failed, and storm water is creating sink holes in slopes above which homes are built and threatened. The City has no option but to repair or replace the broken pipes and outfalls in place to continue safe storm water drainage from the neighborhood.

2. The proposed Project and all biological alternatives, both practicable and impracticable, shall be fully described and analyzed in an appropriate CEQA document. Alternatives to the proposed Project shall be comprehensively included in the CEQA document (e.g., Mitigated Negative Declaration) and/or the biological technical report for the CEQA document. Alternatives must include the following: 1) a no project alternative; 2) a wetlands avoidance alternative, including an analysis of alternative sites irrespective of ownership; and 3) an appropriate range of substantive wetland impact minimization alternatives. Public review of the environmental document must occur pursuant to the provisions of CEQA. Projects proposing to utilize this deviation section of the ESL after initial CEQA public review must include the new information and recirculate the CEQA document.

   1) *No Project Alternative. The goal of the Project is to replace existing storm drainpipes down the canyons that have failed and caused erosion or have reached their design intent capacity. If no Project were to occur, the failed or failing storm drainpipes and outfalls would not be fixed, storm water would continue to excavate sink holes in the slopes removing habitat within the MHPA and putting homes above at risk. Storm water flows would send the excavated sediment into the canyon drainages downstream potentially depositing in areas where it might cause significant problems such as flooding. The No Project Alternative would make the problems of the failing infrastructure worse, resulting in more pipes breaking, more environmental damage, and increasing risk to the public.*

   2) *Wetlands Avoidance. The outfalls were designed to be as close to the canyon bottoms as possible but to avoid impacts to wetlands. The impacts to wetlands are caused by the temporary access needed to perform the work. The locations and temporary access routes for the proposed work have to be accessible to the construction contractor. After assessment of all potential access routes to the SD locations, the selected routes were the only viable routes for vehicles and machinery to access Work Areas and the wetland impacts, though temporary, cannot be avoided. The storm drains go from streets between houses that have gaps that are too narrow for the machinery needed to excavate the old pipes and replace with new pipes. The alignments pass through private backyards and plunge down to the canyon bottoms. The City required no easements for these storm drainpipes when they were installed decades earlier when the neighborhood was developed. Access to the alignments*

from public streets is limited. Only access to SD 2 and SD 5 impact wetlands. For SD 2, there is no access from streets on the mesa, but access is possible from the Stonecrest Village to the west where the access skirts a detention basin created in 1998 and was planted with herbaceous hydrophytic plants. The access was moved upslope to avoid a USACE/CDFW/City wetland but crosses a USACE/CDFW streambed to access the SD 2 alignment. Alternatives to this access would increase impacts to uplands as well as wetlands. At SD 5, the access is along existing trails in Shawn and Ruffin Canyons. In Ruffin Canyon, the trail to SD 5 is mostly along the cobble bottom of Ruffin Canyon Creek that is used by the City for maintenance of the sewer line in the canyon. It needs widening to allow the machinery to access SD 5 Access to from the north via the southern terminus of Ruffin Road or along Gramercy Road would impact more upland due to steepness and likely more wetlands in the canyon bottoms. Similar issues would affect access from the south of Ruffin Canyon.

3) Wetland Impact Minimization Alternatives. All SD locations are constrained by the existing curb inlet locations and extant pipes carrying storm water from streets across private property to the canyon bottoms. The topography of the neighborhood with residences on mesas and ridges above steep-sided canyons requires that any storm water being carried by pipes be taken down the canyon sides through pipes and released at low points as close to the bottoms of the canyons as possible to reduce potential for erosion. The storm drainpipes and outfalls have been designed to avoid placement in wetlands and to slow stormwater flow to minimize damage. The design process with field reconnaissance identified places to minimize wetland impacts along the only feasible way for contractor machinery to access SDs 2 and 5.

3. The potential impacts to wetland resources shall be minimized to the maximum extent practicable and the Project shall be the least environmentally damaging practicable biological alternative considering all the technical constraints of the Project (e.g., roadway geometry, slope stability, geotechnical hazards, etc.). Recognizing the wetland resources involved, minimization to the maximum extent practicable may include, but is not limited to, adequate buffers and/or designs that maintain full hydrologic function and wildlife movement (e.g., pipeline tunneling, bridging, Arizona crossings, arch culverts). The Project applicant will solicit input from the USFWS and the CDFW (e.g., Wildlife Agencies) prior to the first public hearing.

   Impacts have been minimized to the maximum extent practicable because the proposed Project was designed to avoid permanent impacts and the temporary impacts being the result of the highly constrained access to the construction locations. The impacts at SD 2 are to previously created wetlands in a detention basin that was created to prevent flood flows in the canyon creek from damaging the Stonecrest Village community to its east. Impacts to wetlands upstream are to highly disturbed wetlands supporting exotic species (Mexican fan palms). At SD 5, the access is via trails, in which some locations need to be widened and portion in Ruffin Canyon Trail is the cobble streambed of the canyon's creek. A couple of patches of CDFW/City wetland are nicked by the widening of the access and trail is a USACE/CDFW streambed, but it will be restored to its former function both by restoration and seasonal rain events. The projects will maintain full hydrologic and biological function

of the drainages. Removal of exotics by the Project and revegetation in place with native species will enhance the wetlands being impacted. No maintenance of these storm drains is expected, and they are also expected to have a lifespan of over 40 years.

4. All impacts shall be mitigated according to the requirements of Table 2a, and the Project shall not have a significant adverse impact to the MSCP or the Vernal Pool Habitat Conservation Plan.

   Impacts will be mitigated off site at a 2:1 ratio as identified in Table 2a for disturbed wetlands in the City's Biology Guidelines (City 2018). Mitigation will occur at the City's Stadium Wetland Mitigation Site.

5.1.6 Multi-Habitat Planning Area

Direct impacts would occur to lands within the MHPA in the Work Areas for SDs 2-5 and in the access routes for all five SDs (see The Work Area for SD 1 is outside the MHPA. A total of 2.18 acres of MHPA of various habitats would be impacted, including 0.132 acre of Wetland and 0.95 acres of Tier II, 0.03 acre of Tier IIIa, and 0.02 acre of Tier IIIb habitats.

5.2 Indirect Impacts

An indirect impact consists of secondary effects of a Project (such as noise) that lead to habitat degradation or impacts to sensitive species. The magnitude of an indirect impact may be the same as a direct impact; however, the effect usually takes a longer time to become apparent.

Indirect impacts of the proposed Project to sensitive biological resources could occur from modification of current drainage patterns, noise from construction machinery, invasive plant species being allowed to germinate, grow, flower and seed in graded/disturbed areas, and errant grading beyond Project limits. Compliance with the Area Species Management Directives and Conditions of Coverage for the sensitive species detected in the vicinity or with a moderate or high potential to occur (see Section **Error! Reference source not found.** and Section 4.6), the MHPA LUAG (see Section 4.2), and the AMMs will ensure that these indirect impacts are avoided or minimized and would not be significant.

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6.0 CUMULATIVE IMPACTS

Although impacts to sensitive biological resources may not be significant when considered independently, when multiple impacts such as from several development projects within an area are combined, they may be cumulatively significant.

The City participates in the MSCP, a regional conservation plan established in 1996 to protect sensitive species and habitats in southwest San Diego County. The City implements the MSCP through its Subarea Plan. The proposed Project sites are covered by the City's Subarea Plan with some impacts occurring inside the City's MSCP Preserve area (i.e., the MHPA). The MSCP was designed to address cumulative impacts through addressing impacts to covered species and habitats with regional perspective that ensures their long-term conservation. The goal of the MSCP is to establish a preserve system in conformance with the California Natural Communities Conservation Planning Act, and federal and California Endangered Species Acts.

Preservation of habitat and regulation of impacts combine to meet the biological resource conservation goals of the MSCP, which was intended to mitigate cumulative biological resource impacts. Therefore, by being consistent with the MSCP, the MHPA LUAG, and the Special Condition for Coverage, cumulative impacts to uplands, sensitive plants, and sensitive wildlife would be mitigated. Implementation of the proposed Project would not contribute to the incremental loss of native habitats occurring within the City.

With regard to wetlands, compliance with the City's wetland regulations and mitigation requirements, and federal and state mandates for no-net-loss of wetlands or wetlands functions and values, will be secured through the approval, permitting, and mitigation processes. There will be no decrease in wetlands, and no cumulative effect.

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7.0 AVOIDANCE, MINIMIZATION, AND MITIGATION

Pursuant to City requirements in its Biology Guidelines (City 2018), Significance Determination Thresholds (2022, see Section 4.3), and the MSCP Subarea Plan (City 1997) the proposed Project would have a significant effect on the environment, as demonstrated below, and mitigation is required.

- There are impacts to 0.132 acre of City wetlands which require mitigation.
- The impact to 1.12 acre of Tier II CSS, 0.03 acre of Tier IIIa Poison Oak Chaparral, and 0.02 acre of Tier IIIb Non-native Grassland are the only impacts to Tier I through III vegetation communities, and the total is above the threshold of 0.10 acre that requires mitigation (City 2022). All other impacts to vegetation are to Tier IV communities that require no mitigation (City 2018, 2022).
- Potential Impacts to the MSCP-covered CAGN and orange-throated whiptail, and Rufous-crowned Sparrow are reduced to below significant by application and compliance with the MSCP Conditions of Coverage for these species (City 1997) as identified in Section 4.3.4 and the CAGN-specific measure (AMM 2) identified below.
- Impacts will occur to jurisdictional wetlands and waters (0.054 acre of USACE and 0.155 acre of CDFW jurisdiction) which are unavoidable and will require permitting from USACE, RWQCB, and CDFW, and mitigation.
- Indirect impacts to other sensitive biological resources will be avoided or minimized by compliance with the MSCP Subarea Plan and the MHPA LUAG contained therein (City 1997) as identified in Section 4.0.

7.1 Avoidance and Minimization Measures

The proposed Project has been designed to include the following requirements to ensure compliance with the City's MSCP Subarea Plan and to avoid or minimize impacts to biological resources to the maximum extent feasible. The following requirements shall be incorporated into the Project plans and/or included as Conditions of Approval in the Site Development Permit:

- Prior to issuance of Notice to Proceed, the Engineering and Capital Projects Environmental Designee shall review and approve all construction documents (plans, specifications, details, etc.) to ensure these requirements are incorporated.

AMM 1: Biological Resource Protection during Construction

I. Prior to Construction

A. **Biologist Verification.** The owner/permittee shall provide a letter to the City's Environmental Designee stating that a Project Biologist (Qualified Biologist) as defined in the City's Biological Guidelines (2018), has been retained to implement the Project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the Project.

B. **Preconstruction Meeting.** The Qualified Biologist shall attend the preconstruction meeting, discuss the Project's biological monitoring program, and arrange to perform any follow-up

mitigation measures and reporting site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage, and Environmentally Sensitive Area fencing around sensitive plants.

C. **Biological Documents.** The Qualified Biologist shall submit all required documentation to ED verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, MSCP, ESL Ordinance, Project permit conditions; CEQA; federal and California Endangered Species Acts; and/or other local, state or federal requirements.

D. **Biological Construction Mitigation/Monitoring Exhibit.** The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit which includes the biological documents in C above. In addition, include: restoration/revegetation plans, plant salvage/relocation requirements (e.g., coastal cactus wren plant salvage, burrowing owl exclusions, etc.), avian or other wildlife surveys/survey schedules (including general avian nesting and USFWS protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/ barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Environmental Designee. The Biological Construction Mitigation/Monitoring Exhibit shall include a site plan, written and graphic depiction of the Project's biological mitigation/monitoring program, and a schedule. The Biological Construction Mitigation/Monitoring Exhibit shall be approved by the Environmental Designee and referenced in the construction documents.

E. **Avian Protection Requirements.** To avoid any direct impacts to CAGN and any species identified as listed, candidate, sensitive, or special status in the MSCP, and species protected under the Migratory Bird Treaty Act, removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the breeding season for these species (February 1–September 15).

   If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a preconstruction survey to determine the presence or absence of nesting for CAGN, sensitive bird species, or Migratory Bird Treaty Act-covered species on the proposed area of disturbance. The preconstruction surveys shall be conducted within three to five calendar days prior to the start of construction activities or if work is halted and is then resumed (including removal of vegetation). The applicant shall submit the results of the preconstruction survey to the City's Engineering and Capital Projects Department for review and approval prior to initiating any construction activities.

   If nesting activities for bird species are detected, a letter report in conformance with the City's Biology Guidelines and applicable state and federal law (i.e., appropriate follow-up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include identification of how to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's Environmental Designee, and Biologist shall verify and approve that all measures identified in the report are in place prior to and/or during construction.

F. **Resource Delineation.** Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological resources and verify compliance with any other Project conditions as shown on the Biological Construction Mitigation/Monitoring Exhibit. This phase shall include flagging plant specimens for Environmentally Sensitive Area fencing and delimiting buffers to protect sensitive biological resources (e.g., habitats/flora and fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.

G. **Education.** Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive flora and fauna (e.g., explain the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas, etc.).

II. During Construction

A. **Monitoring.** All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on "Exhibit A" and/or the Biological Construction Mitigation/Monitoring Exhibit. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the preconstruction surveys. In addition, the Qualified Biologist shall document field activity via the Consultant Site Visit Record. The Consultant Site Visit Record shall be e-mailed to the City's Environmental Designee on the first day of monitoring, the first week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.

B. **Subsequent Resource Identification.** The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna on site (e.g., flag plant specimens for avoidance during access, etc.). If active nests or other previously unknown sensitive resources are detected, all Project activities that directly impact the resource shall be delayed until species specific local, state or federal regulations have been determined and applied by the Qualified Biologist.

III. Post Construction Measures

A. In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL and MSCP, State CEQA, and other applicable local, state and federal laws. The Qualified Biologist shall submit a final Biological Construction Mitigation/Monitoring Exhibit/report to the satisfaction of the City Environmental Designee within 30 days of construction completion.

AMM 2: Specific Protections for the Coastal California Gnatcatcher

1. Prior to the issuance of any grading permit, Notice to Proceed, or preconstruction meeting, the City Deputy Director (or appointed designee) shall verify that the MHPA boundaries and the following Project requirements regarding the CAGN are shown on the construction plans:

   No clearing, grubbing, grading, or other construction activities shall occur between March 1 and August 15, the breeding season of the CAGN, until the following requirements have been met to the satisfaction of the City manager:

   A. A Qualified Biologist (possessing a valid endangered species act section 10(a)(1)(a) recovery permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average for the presence of CAGN. Surveys for CAGN shall be conducted pursuant to the protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of any construction. If CAGN are present, then the following conditions must be met:

      i. Between March 1 and August 15, no clearing, grubbing, or grading of occupied gnatcatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and

      ii. Between March 1 and August 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB (A) hourly average at the edge of occupied gnatcatcher habitat. If work has to proceed, noise levels must be shown to be reduced to below 60 dB (A) hourly average from either use of low noise equipment, noise barriers, or scheduling. An analysis showing that noise generated by construction activities would not exceed 60 dB (A) hourly average at the edge of occupied habitat must be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the City representative at least two weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; or

      iii. At least two weeks prior to the commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) hourly average at the edge of habitat occupied by CAGN. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB (A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16).

      * Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB (A) hourly

average or to the ambient noise level if it already exceeds 60 dB (A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City representative, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. If CAGN are not detected during the protocol survey, the Qualified Biologist shall submit substantial evidence to the City Environmental Designee and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 1 and August 15 as follows:

   i. If this evidence indicates the potential is high for CAGN to be present based on historical records or site conditions, then condition a.iii shall be adhered to as specified above.

   ii. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

7.2 Mitigation

Pursuant to City requirements in its Biology Guidelines (City 2018) and the MSCP Subarea Plan (City 1997), the following Mitigation Program is proposed to reduce significant impacts to below a level of significance and constitutes the Mitigation, Monitoring, and Reporting Program for the Project.

Impacts have been identified as being either temporary or permanent though both require mitigation per City Biology Guidelines (City 2018). Temporary impacts include clearing and grading the access, and clearing and trenching for the drainpipe placement. After work is complete, these areas will be regraded back to their original contours and revegetated back to the habitat that was removed or, potentially in some instances, a higher Tier habitat.

Permanent impacts to sensitive biological resources are where habitat will be permanently removed such as for placement of manholes, cutoff walls, and outfalls. Impacts occur within and outside the MHPA, on private lands and in public open space lands. All impacts (temporary and permanent) to sensitive resources require mitigation. Mitigation measures for the impacts of the proposed Project will need to comply with the Land Development Code, the MSCP, and the MHPA Adjacency Guidelines.

Impact 1:

Impacts to City, Wetlands at SD 2 and SD 5 are unavoidable but temporary, being caused by the need to access the SD 2 and SD 5 alignments. While impacted wetlands will be revegetated *in situ*, per the City's Biology Guidelines (2018), unavoidable impacts to Wetlands require mitigation. Mitigation for impacts will occur at specified ratios in Table 2a of the Biology Guidelines (City 2018).

Impacts to 0.132 acre of City Jurisdictional Wetlands would occur. Impacts to City Wetland habitats would be significant.

Mitigation Measure 1:

Mitigation for City impacts to 0.132 acres of Wetland will occur through assigning 0.262 acres of enhancement credits from the City's Stadium Wetland Mitigation site to achieve a no-net-loss of wetland area and wetland function (Table 8). The Stadium Wetland Mitigation site is an approximately 55-acre wetland mitigation site located in the San Diego River, adjacent to the stadium. The site has been approved by all regulatory agencies to use as a wetland mitigation for City projects. The City Public Utilities Department developed, constructed, and manages the site. The City has confirmed that credits are available.

Table 8. Mitigation of Impacts to City Wetland Areas.

Jurisdictional Feature	City Wetland Habitat	Impact (acres)	Mitigation Ratio[2]	Mitigation Credit
Unvegetated Channel	Natural Flood Channel	0.073	2:1	0.146
Freshwater Marsh	Freshwater Marsh	0.003	2:1	0.006
Herbaceous Wetland	Freshwater Marsh	0.027	2:1	0.054
Herbaceous Wetland-Irrigated	Freshwater Marsh	0.027	2:1	0.054
Mule Fat Scrub	Riparian Scrub	0.001	2:1	0.002
Total[1]		**0.132**		**0.262**

Notes:

[1] Totals may not add due to rounding.

[2] Mitigation ratios are for wetlands outside the coastal zone as presented in Tabel 2a of the City Biological Guidelines.

Impact 2

Impacts to potential USACE/RWQCB Waters of the U.S. and CDFW Streambed and Wetlands (Table 9) at SDs 2 and 5 are unavoidable but temporary, being caused by the need to access the SDs 2 and 5 alignments. While impacted wetlands will be revegetated *in situ* and mitigated per the City's Biology Guidelines (2018), impacts to USACE/RWQCB and CDFW jurisdictional areas may require additional or alternative mitigation.

Mitigation Measure 2:

If restoration of temporary impacts and mitigation for City Wetlands is not enough to satisfy USACE, RWQCB, and CDFW, additional or alternative mitigation.

While the City Biology Guidelines (2018) require a 2:1 mitigation ratio, the guidelines also state "Wetland mitigation required as part of any federal (404) or state (1600 *et seq*.) wetland permit will **supersede** and will not be in addition to any mitigation identified in the CEQA document for those wetland areas covered under any federal or state wetland permit."

City wetlands generally mirror CDFW wetland jurisdiction. Since all wetland impacts are temporary and do not result in the loss of aquatic resource area, the permitting agencies may only require mitigation to offset the temporal loss of aquatic function and because of the disturbed nature of the wetlands being impacted by this Project, it is expected that CDFW will also require mitigation at a 2:1 ratio and using rehabilitation/enhancement credit from the City Stadium Wetland Mitigation site to satisfy the "no net loss" of aquatic function may satisfy CDFW, USACE, and RWQCB.

Table 9. Impacts to USACE/RWQCB and CDFW Jurisdictional Areas.

Jurisdictional Feature	USACE/RWQCB (acres)	CDFW (acres)	Required Revegetation by City	Mitigation[1]
Waters of the U.S./ CDFW Streambed				
Vegetated Non-Wetland Waters/Streambed	0.007	0.025	-	TBD
Unvegetated Non-Wetland Waters/Streambed	0.044	0.073	0.073	TBD
Subtotal[1]	***0.051***	***0.097***	***0.073***	**TBD**
Wetlands				
Freshwater Marsh	0.003	0.003	0.003	TBD
Herbaceous Wetland	-	0.027	0.027	TBD
Herbaceous Wetland-Irrigated	-	0.027	0.027	TBD
Mule Fat Scrub	-	0.001	0.001	TBD
Subtotal[1]	***0.003***	***0.058***	***0.058***	**TBD**
Total[1]	**0.054**	**0.155**	**0.132**	**TBD**

Note:

[1] Mitigation will be determined by the respective agencies during permitting process.

Impacts to USACE jurisdiction requires permitting pursuant to Section 404 of the federal CWA. Nationwide Permit 43 covers storm water management activities with impacts to USACE jurisdictional areas up to a total of 0.5 acre. A preconstruction notification is required to be provided to the USACE. As the linear distance is over 300 ft, the City will require a waiver from the USACE District Engineer. The Nationwide Permit will have standard conditions to be followed, and compensatory mitigation must be provided. The presence of CAGN in the vicinity of the proposed Project sites and federal funding the via Water Infrastructure Finance and Innovation Act may necessitate a federal Endangered Species Act Section 7 consultation with USFWS.

The need for a CWA 404 permit triggers consideration of a CWA 401 Certification to be obtained from the local San Diego RWQCB.

CDFW will require that a California Fish and Game Code Section Lake and Streambed Alteration Agreement be obtained for impacts to their jurisdiction. This Lake and Streambed Alteration Agreement application requires a fee, and the agreement will stipulate the mitigation that is required.

Impact 3:

Per the City's Biology Guidelines (2018), impacts to Tiers I through III require mitigation, whereas impacts to Tier IV uplands do not require mitigation.

Impacts to 1.12 acres of Tier II Coastal Sage Scrub communities, 0.03 acre of Tier IIIa chaparral, 0.02 acre of Tier IIIb NNG, would occur. Impacts to Tier II, Tier IIIa, and Tier IIIb habitats would be significant and are summarized in Table 10.

Mitigation Measure 3:

Mitigation for impacts will occur at specified ratios (see below). Prior to contract award, the specific mitigation will be identified, in an approved mitigation bank or payment into the City's Habitat Acquisition Fund (HAF). This fund is intended to be used only for the mitigation of impacts to small, isolated sites with lower long-term conservation value. For purposes of this fund, small is generally considered less than 5 acres, but could, in some cases, be considered up to 10 acres. Mitigation for impacts to 1.12 acres of Tier II habitat in and outside of the MHPA will be mitigated with Tier II habitat. Impacts to 0.03 acre of Tier IIIa and 0.02 acre of Tier IIIb impacts within the MHPA will be mitigated with Tier III mitigation, all at a 1:1 ratio (Table 10). The 1.17 acres of mitigation will occur either via the HAF, at Marron Valley Cornerstone Mitigation Bank, or another approved bank or means within the MHPA for land to be added to the MHPA. Along the upland sections of the access to SD 5, only impacts outside the 8-ft width designated for the City trail will be subject to revegetation or mitigation. These impacts are small, isolated, and have lower conservation value adjacent to the urban environment. The impacts are smaller than 5 acres, thus eligible for mitigation into the HAF.

In addition, upland impact areas will be restored back to original contours and revegetated with an appropriate palette (Rick Engineering 2026) in Appendix H: Serra Mesa Storm Drain & Green Infrastructure.

Table 10. Mitigation for Uplands.

Habitat Tier	Impacts		Mitigation Ratio	Mitigation (acres)[1]
	MHPA	Acres		
I				
II	Yes	0.95	1:1	0.95
	No	0.17	1:1	0.17
IIIa	Yes	0.03	1:1	0.03
IIIb	Yes	0.02	1:1	0.02
Total[2]		**1.17**		**1.17**

Notes:

[1] All mitigation will be within the MHPA with purchase into the HAF or other approved mechanism determined before contract award.

[2] Totals may not add due to rounding.

Impact 4:

Impacts to sensitive plants that are CRPR List 1 or 2 would be significant if not mitigated. Impacts to decumbent goldenbush within or near the accesses to SDs 1 and 4 have mostly been avoided through design and reduced to less than significant. Remaining potential impacts to San Diego barrel cactus, and San Diego marsh-elder would be significant.

Mitigation Measure 4:

Potential impacts to five San Diego barrel cacti within the SD 2 alignment may be avoidable if the alignment can be modified when staking impact limits. If impacts cannot be avoided, they will be salvaged the per the protocol described below, and replanted in locations near where they were removed in the SD 2 alignment.

The five San Diego barrel cacti within the impact footprint will be salvaged and moved to a translocation site proximal to the area from which they are removed but out of the work area. Prior to removing the plants, temporary marking paint will be used to mark the north sides of the plants so that they can be similarly oriented at the translocation site. The cacti should be salvaged by digging out as much of the root mass as possible, taking care to cleanly cut and not rip apart larger roots. The cacti should be stored outside of pots, in part shade for two days to allow the roots to heal and seal over before being planted at the translocation site. If there is a delay after the two-day drying time to replant, cacti can be potted in 1-gallon containers after the two-day drying time. The potted cacti should not be watered for at least a week and after that period only infrequently until they are replanted at the translocation site.

If salvage and translocation fail, ten propagated San Diego barrel cacti will be planted, and seeds will be planted in the revegetation area as part of the revegetation effort.

Impacts to San Diego marsh-elder will be mitigated by reestablishing it within the areas impacted both in the detention basin where it is currently located but also in the plant palette in other canyon bottom areas where revegetation for the project is occurring. Please refer to Appendix H: Serra Mesa Storm Drain & Green Infrastructurefor more details on the revegetation plan.

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8.0 CONCLUSION

The proposed Project has the potential to impact sensitive Wetland, Tier II, IIIa, and IIIb upland habitats inside and outside of the MHPA, the federally threatened CAGN and MSCP-covered orange-throated whiptail and Rufous-crowned Sparrow, sensitive plants, jurisdictional wetlands, and nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code.

Through project features and implementation of a Mitigation Monitoring Reporting Program that stipulates specific avoidance, minimization, and mitigation measures above, the proposed replacement of the five storm drains could be accomplished without long-term significant effects on biological resources.

Implementation of AMMs in compliance with the City's Land Development Code Biology Guidelines (2018), the City's MSCP Subarea Plan (1997) and its MHPA LUAG, as outlined above, and mitigation measures for impacts to Wetland, Tier II, IIIa, and IIIb vegetation communities and sensitive plants, impacts will be reduced to below significance.

This Biological Resources Technical Report details the impacts and compensatory measures in satisfaction of the City's requirements under the CEQA and demonstrates compliance with all federal, state, and City ordinances, regulations and laws.

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9.0 QUALIFICATIONS AND CERTIFICATIONS

The following individuals contributed to the fieldwork and/or preparation of this report. See Appendix F for the resumes of the Primary Authors.

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APPENDICES

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APPENDIX A: PLANT SPECIES OBSERVED

Species Name	Common Name	Status	Habitat
Achillea sp.	yarrow		CSS
Acmispon glaber	deerweed		CSS
Amaranthus albus	pigweed*		CSS, DH
Ambrosia psilostachya	ragweed		CSS-B
Apium graveolens	Celery*		FWM
Artemisia californica	California sagebrush		CSS
Artemisia palmeri	San Diego sagewort	CRPR 4.2	CSS
Arundo donax	giant reed*		DH, NNV
Asclepias fascicularis.	narrow-leaved milkweed		CSS
Asparagus asparagoides	African asparagus fern*		DH, NNV
Asphodelus fistulosus.	onionweed*		DH, CSS-D
Atriplex semibaccata	Australian saltbush*		DH, DEV
Baccharis pilularis	coyote bush		CSS-B, NNV
Baccharis salicifolia	mule fat		MFS
Baccharis sarothroides	broom baccharis		CSS-B
Bahiopsis laciniata	San Diego sunflower		CSS
Bloomerium crocea	golden stars		CSS
Brassica nigra	black mustard*		CSS-D, DH
Bromus diandrus	ripgut grass*		CSS, CSS-D, NNG, DH
Bromus hordeaceus	soft chess*		CSS, CSS-B
Bromus madritensis	foxtail chess*		CSS-D, DH
Calochortus sp.	Mariposa lily		CSS
Calystegia macrostegia	morning-glory		CSS
Carduus pycnocephalus	Italian thistle*		DH, CSS-D
Carex spissa	San Diego sedge		FWM
Carpobrotus edulis	iceplant*		DEV, DH, CSS-D, NNV
Centaurea melitensis	tocalote*		DEV, DH, CSS, CSS-D
Chorizanthe fimbriata	fringed spineflower		CSS
Claytonia sp.	miner's lettuce		CSS
Clematis sp.	virgin's bower		CSS
Cortaderia jubata	pampas grass*		CSS, NNV
Crassula argentea	jade plant*		DEV, DH
Cylindropuntia prolifera	coast cholla		CSS
Cynara cardunculus	artichoke thistle*		DH
Cyerus eragrostis	tall flat sedge		NNV
Dichelostemma capitatum	blue dicks		NNG, CSS
Dudleya pulverulenia	chalk lettuce		CSS
Encelia californica	California encelia		CSS, CSS-D

Species Name	Common Name	Status	Habitat
Eriogonum fasciculatum	California buckwheat		CSS, CSS-D
Eriophyllum confertifolium	golden yarrow		CSS, CSS-D
Erodium sp.	cranesbill*		DEV, DH, CSS-D
Ferocactus viridescens	San Diego barrel cactus	CRPR 2B.1	CSS
Festuca myuros	rattail sixweeks grass*		CSS-D, NNV
Foeniculum vulgare	sweet fennel*		CSS-D, DH
Fraxinus uhdei	shamel ash*		NNV
Gallium angustifolium	narrow leaved bedstraw		CSS
Glebionis coronaria	crown daisy*		DEV, DH
Pseudognaphalium bioletti	two-color rabbit tobacco		CSS
Pseudognaphalium californicum	California everlasting		CSS
Heliotropium curassavicum	salt heliotrope		UC
Heteromeles arbutifolia	toyon		CSS-RD
Hirschfeldia incana	short-pod mustard*		DH, CSS-D, NNV
Hordeum murinum	seaside barley*		DH, CSS-D
Hypochaerus glabra	smooth cat's ear*		DH, CSS-D
Isocoma menziesii	goldenbush		CSS
Isocoma menziesii var. *decumbens*	decumbent goldenbush	CRPR 1B.2	DH
Iva hayesiana	San Diego marsh-elder	CRPR 2B.2	FWM
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	CRPR 4.2	FWM
Lactuca serriola	prickly lettuce*		DEV, DEH, CSS-D
Lepidum nitidum	shining peppergrass		DH, CSS-D, CSS
Lupinus hirsutissimus	stinging lupine		CSS
Lysimachia arvensis	scarlet pimpernel*		CSS-D, CSS
Malosma laurina	laurel sumac		CSS, CSS-RD
Marah macrocarpus	chilicothe		CSS, CSS-D
Medicago polymorpha	bur clover*		DH, CSS-D
Melilotus alba	white sweetclover*		NNG, DH
Mesembryanthemum nodiflorum	slender-leaf iceplant		DEV, DH
Mimulus aurantiacus	coast monkey flower		CSS
Mirabilis laevis	California four o'clock		CSS
Muhlenbergia microsperma	littleseed muhly		CSS
Nicotiana glauca	tree tobacco*		CSS-D, DH
Oenothera sp.	evening primrose		CSS
Opuntia littoralis	coast prickly-pear		CSS
Opuntia ficus-indica	prickly-pear*		DEV, CSS
Oxalis pes-caprae.	wood sorrel*		DH, NNV, CSS-D
Pennisetum setaceum.	fountain grass*		DH, CSS-D, CSS
Phacelia sp.	phacelia		CSS
Phoenix canariensis	Canary Island date palm*		NNV

Species Name	Common Name	Status	Habitat
Plantago major	Common plantain*		NNV
Pluchea odorata.	salt marsh fleabane		FWM
Polypogon monspeliensis.	annual beard grass*		NNV
Psilocarphus brevissimus	woolly marbles		DH
Quercus dumosa	Nuttall's scrub oak	CRPR 1B.1	CSS-RD
Rhus integrifolia	lemonadeberry		CSS, CSS-RD, CSS-D
Ribes speciosum	fuschia-flower gooseberry		CSS-RD
Rumex crispus	curly dock*		HW
Salsola tragus	Russian thistle*		DH, CSS-D
Salvia apiana	white sage		CSS
Salvia mellifera	black sage		CSS, CSS-RD
Sambucus mexicana	blue elderberry		CSS
Schinus terebinthifolius	Brazilian pepper*		DEV, NNV
Silybum marianum	milk thistle*		CSS, NNV
Sisyrinchum bellum	blue eyed grass		CSS
Sisymbrium sp.	hedge mustard*		CSS-D, NNV
Solanum xanti	chaparral nightshade		CSS
Sonchus asper	spiny sowthistle*		DH, NNV, CSS-D
Sonchus oleraceus	common sowthistle*		CSS-D
Stellaria pallida	chickweed*		CSS-D, NNV
Stephanomeria virgata	wreath plant		CSS
Stipa sp.	needlegrass		CSS
Stipa millacea	smilo grass*		NNV
Toxicodendron diversilobum	poison oak		POC, CSS
Typha dominensis	cattail		FWM
Washingtonia robusta	Mexican fan palm*		DEV, NNV
Xanthium strumarium	cocklebur*		HW

*Non-native

Habitat Codes: CSS = Coastal Sage Scrub, -B = Baccharis-Dominated, -RD = Rhus-Dominated, -D = Disturbed, DEV = Developed, DH = Disturbed Habitat, FWM = Freshwater Marsh, HW = Herbaceous Wetland, MFS = Mule Fat Scrub, NNG =non-native Grassland, NNV=Non-Native Vegetation. POC = Poison Oak Chaparral

California Rare Plant Rank (CRPR)

List 1A = Plants Presumed Extinct in California; List 1B = Plants Rare, Threatened or Endangered in California and Elsewhere;
List 2 = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere;
List 3 = Plants About Which We Need More Information, A Review List; List 4 = Plants of Limited Distribution, A Watch List

State Rank and CRPR is followed by threat code (e.g., State Rank S2.2 or CRPR 1B.2)

.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 = Fairly endangered in California (20-80% occurrences threatened)

.3 = Not very endangered in California (<20% of occurrences threatened)

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APPENDIX B: SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR

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Species		Status			Habitat Associations/ Life Form/ Blooming Period	Potential to Occur On Site	Observed
Common Name	**Scientific Name**	**Federal**	**State**	**CRPR/ MSCP**			
Plants							
San Diego	*Acanthomintha ilicifolia*	FT	SE	1B.1/ MSCP	Chaparral, Coastal sage scrub, Valley and foothill grassland, vernal pools, clays/annual herb/April-June	Low: little appropriate habitat in steep canyons. Would have been observed if present.	No
San Diego adolphia	*Adolphia californica*	None	None	2B.1	Chaparral, Coastal sage scrub, Valley and foothill grassland in western San Diego, clays/shrub/December-April	Low: while found south of Mission Valley and to the north would have been seen if present.	No
Shaw's agave	*Agave shawii*	None	None	2B.1/ MSCP	Maritime succulent scrub, coastal bluff scrub, coastal scrub/perennial leaf succulent/September-May	Very Low: coastal species.	No
San Diego ambrosia	*Ambrosia pumila*	FE	None	1B.1/ MSCP	Chaparral, Coastal sage scrub, Valley and foothill grassland, vernal pools, clays/perennial herb/June-September	Very Low: generally found in flatter areas of valley bottoms. Would have been seen if present.	No
Aphanisma	*Aphanisma blitoides*	None	None	1B.2/ MSCP	Coastal bluff scrub, Coastal sage scrub, sandy soils/annual herb/April-May	Low: high affinity to coastal bluffs	No
South Coast Saltbush	*Atriplex pacifica*	None	None	1B.2	Coastal bluff scrub, Coastal sage scrub, playas/annual herb/March-October	Low-Moderate: site within range of species and has some suitable habitat.	No
Golden snake cactus	*Bergerocactus emoryi*	None	None	2B.2	Closed-cone coniferous forest, chaparral, coastal scrub, sandy soils/ perennial stem succulent/May-June	Very low: not found in City canyons. Most recent detections in Otay and on Point Loma. Would have been detected if present.	No
Orcutt's brodiaea	*Brodiaea orcuttii*	None	None	1B.1/ MSCP	Closed-cone coniferous forest. chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools, mesic and clay soils/ perennial bulbiferous herb/May-July	Low: historically found within canyons of San Diego, but few recent observations. Surveys were timed to detect the species if present	No

Species		Status			Habitat Associations/ Life Form/ Blooming Period	Potential to Occur On Site	Observed
Common Name	Scientific Name	Federal	State	CRPR/ MSCP			
Lewis sun cup	*Camissonia lewisii (Camissoniopsis lewisii)*	None	None	3	Coastal bluff scrub, cismontane woodland, coastal dunes, Coastal sage scrub, Valley and foothill grassland, sandy or clay soils/annual herb/March-June	Moderate: site within range of species and has some suitable habitat. Found recently in Mission Trails.	No
Southern tarplant	*Centromadia parryi australis*	None	None	1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/ annual herb/May-November	None: no suitable habitat and site is too far south of known range.	No
San Diego sand aster	*Corethrogyne (Lessingia) filaginifolia incana*	None	None	1B.1	Coastal bluff scrub, chaparral, coastal scrub/perennial herb/June-September	Low: habitat present and within species' range but should have been detected if present in alignments.	No
Western dichondra	*Dichondra occidentalis*	None	None	4.2	Chaparral, cismontane woodland, Coastal sage scrub, Valley and foothill grassland/perennial herb/March-May	Low: generally not found in city canyons and would have been detected if present	No
San Diego button-celery	*Eryngium aristulatum parishii*	FE	SE	1B.1/ MSCP	Coastal scrub, valley and foothill grassland, vernal pools, mesic soils/ annual / perennial herb/April-June	Low: mostly restricted to vernal pools. Little suitable habitat present	No
Coast barrel cactus	*Ferocactus viridescens*	None	None	2B.1/ MSCP	Chaparral, Coastal sage scrub, Valley and foothill grassland, vernal pools/shrub/May-June	Detected at two locations during surveys	Yes
Orcutt's hazardia	*Hazardia orcuttii*	None	ST	1B.1	Chaparral (maritime), coastal scrub, often clay/ perennial evergreen shrub/August-October	None: Coastal species. Site too far inland.	No
Graceful tarplant	*Holocarpha virgata elongata*	None	None	4.2	Coastal sage scrub, cismontane woodland, chaparral valley and foothill grassland/annual herb/August-November	Moderate: within range and one recently detected further up canyon from SD # 7.	No
Decumbent goldenbush	*Isocoma menziesii decumbens*	None	None	1B.2	Chaparral, coastal scrub, sandy, often in disturbed areas/perennial shrub/April-November	In DH in access to SD 1 and 4.	Yes
San Diego marsh-elder	*Iva hayesiana*	None	None	2B.2	Marshes and swamps, playas/perennial herb/April-October	Planted in storm water detention basin east of SD #2	Yes

Species		Status			Habitat Associations/ Life Form/ Blooming Period	Potential to Occur On Site	Observed
Common Name	Scientific Name	Federal	State	CRPR/ MSCP			
Southwestern spiny rush	*Juncus acutus* ssp. *leopoldii*	None	None	4.2	Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes, and swamps (coastal salt)/perennial rhizomatous herb/(March)May-June	Planted in storm water detention basin east of SD #2.	Yes
Robinson pepper grass	*Lepidium virginicum robinsonii*	None	None	4.3	Chaparral, coastal scrub/annual herb/January-July	Low: pepper grass found was common L. nitidum.	No
California box-thorn	*Lycium californicum*	None	None	4.2	Coastal bluff scrub, coastal scrub/ perennial shrub/(December) March, June-August	None: More coastal and would have been detected if present.	No
Small flowered microseris	*Microseris douglasii platycarpha*	None	None	4.2	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools, clay soils/annual herb/March-May	Low: little suitable habitat and now found more peripheral to central San Diego.	No
Willowy monardella	*Monardella linoides viminea (Monardella viminea)*	FE	SE	1B.1/ MSCP	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland, alluvial ephemeral washes/perennial herb/June-August	Low: suitable habitat at SD #5 but not detected in alignment or access.	No
California spine flower	*Mucronea californica*	None	None	4.2	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland, sandy soils/annual herb/March-July (August)	Low: only recently known from Point Loma.	No
San Diego goldenstar	*Muilla clevelandii (Bloomeria clevelandii)*	None	None	1B.1/ MSCP	Chaparral, coastal scrub, valley and foothill grassland, vernal pools, clay soils/perennial bulbiferous herb/April-May	Low: typically found ion grasslands on flat lands not steep canyon sides.	No
Little mousetail	*Myosurus minimus apus*	None	None	3.1	Valley and foothill grassland, vernal pools (alkaline)/annual herb/March-June	None: no vernal pools	No
Spreading navarretia	*Navarretia fossalis*	FT	None	1B.1	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/April-June	None: no vernal pools or other suitable habitat	No
Prostrate navarretia	*Navarretia prostrata*	None	None	1B.1/ MSCP	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools, mesic soils/annual herb/April-July	None: no vernal pools or other suitable habitat	No

Species		Status			Habitat Associations/ Life Form/ Blooming Period	Potential to Occur On Site	Observed
Common Name	Scientific Name	Federal	State	CRPR/ MSCP			
California adder's tongue fern	*Ophioglossum californicum*	None	None	4.2	Chaparral, valley and foothill grassland, vernal pools (margins), mesic soils/ perennial rhizomatous herb/(December)January-July	Low: Little suitable habitat. Most recent sighting at Mission Trails.	No
Snake cholla	*Opuntia parryi serpentine (Cylindropuntia californica var. californica)*	None	None	1B.1/ MSCP	Coastal sage scrub, chaparral, shrub (stem succulent)/April-May	Low: Generally found south of location.	No
Orcutt grass	*Orcuttia californica*	FE	SE	1B.1/ MSCP	Vernal pools/annual herb/April-August	None: No vernal pools present.	No
Golden-rayed pentachaeta	*Pentachaeta aurea (Pentachaeta aurea ssp. aurea)*	None	None	4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland valley and foothill grassland/annual herb/March-July	Low to moderate: fairly wide-ranging species easily overlooked.	No
Brand's phacelia	*Phacelia stellaris*	None	None	1B.1	Coastal dunes, Coastal sage scrub/annual herb/March-June	None: very coastal distribution in San Diego County.	No
Cooper's rein orchid	*Piperia cooperi*	None	None	4.2	Chaparral, cismontane woodland valley and foothill grassland/perennial herb/March-June	Low: Not found locally in central San Diego. Most recently at Mission Trails.	No
San Diego mesa mint	*Pogogyne abramsii*	FE	SE	1B.1/ MSCP	Vernal pools/annual herb/April-June	None: no vernal pools	No
Santa Catalina Island currant	*Ribes viburnifolium*	None	None	1B.2	Chaparral, cismontane woodland/ perennial evergreen shrub/February-April	None: Found near coat. Would have been detected.	No
Mesa club moss	*Selaginella cinerascens*	None	None	4.1	Chaparral, coastal scrub/ perennial rhizomatous herb	Detected in open sage scrub on hillsides within study area but not in alignments. Species was not mapped.	Yes
Rayless ragwort	*Senecio aphanactis*	None	None	2B.2	Chaparral, cismontane woodland, coastal scrub, sometimes alkaline soils/annual herb/January-April (May)	Low: Ranges from San Diego County to Bay Area but rarely seen locally.	No

Species		Status			Habitat Associations/ Life Form/ Blooming Period	Potential to Occur On Site	Observed
Common Name	**Scientific Name**	**Federal**	**State**	**CRPR/ MSCP**			
San Diego sunflower	*Viguiera laciniata (Bahiopsis laciniate)*	None	None	4.3	Chaparral, coastal scrub/perennial shrub/February-June (August)	Observed at serval locations in study areas including at SD #s 1, 2, 4, and 5.	Yes

Status:

MSCP = Covered species in the Multiple Species Conservation Plan

Federal:

FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
FSC = Federal Species of Concern

State:

SE = State Endangered
ST = State Threatened
SR = State Rare

California Rare Plant Rank (CRPR):

List 1A = Plants Presumed Extinct in California
List 1B = Plants Rare, Threatened or Endangered in California and Elsewhere
List 2 = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3 = Plants About Which We Need More Information, A Review List
List 4 = Plants of Limited Distribution, A Watch List

State Rank and CRPR is followed by threat code (e.g., State Rank S2.2 or CRPR 1B.2):

.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened)

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APPENDIX C: POTENTIAL FOR NARROW ENDEMICS TO OCCUR

Potential or Narrow Endemic Plant Species to Occur		
Species	**Status***	**Potential to Occur**
San Diego thornmint (*Acanthomintha ilicifolia*)	FT/SE CRPR List 1B.1 MSCP	Low. Grassy openings in chaparral or sage scrub, or near vernal pools, with friable or broken clay soils are the preferred habitat of this annual species. Blooming period is April to June. Little appropriate habitat on site.
Shaw's agave (*Agave shawii*)	--/-- CRPR List 2.1 MSCP	None. This succulent shrub is found in Coastal sage scrub and Maritime Succulent Scrub, often on volcanic soils. Blooming period is September to May. Would likely have been observed if present.
San Diego ambrosia (*Ambrosia pumila*)	FE/-- CRPR List 1B.1 MSCP	Low. Creek beds, seasonally dry drainages, and floodplains are preferred habitat but have also been found in Disturbed Habitat. Blooming period is June to September. No records of this species in the Project vicinity.
Aphanisma (*Aphanisma blitoides*)	--/-- CRPR List 1B.2 MSCP	None. Found in sandy, alkaline areas in coastal shrubland and bluffs. Blooming period is April to May. No records of this species in the Project vicinity.
Coastal dunes milk vetch (*Astragalus tener* var. *titi*)	FE/SE CRPR List 1B.1 CA Endemic MSCP	None. Habitat for this annual is coastal dunes and sandy places along the coast. Blooming period is March to May. No suitable habitat was present on site.
Encinitas baccharis (*Baccharis vanessae*)	FT/SE CRPR List 1B.1 CA Endemic MSCP	None. Occurs in southern maritime and southern mixed chaparral in northern San Diego County. Species would likely have been observed if present.
Otay tarplant (*Deinandra conjugens*)	FT/SE CRPR List 1B.1 MSCP	Low. Occurs from Sweetwater Reservoir area south to the Mexican border. Blooming period is May to June. Not observed during surveys.
Short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*)	--/SE CRPR List 1B.1 CA Endemic MSCP	Very low. Open areas and sandstone bluffs of chamise chaparral or Torrey pine forest. No suitable habitat present.
Variegated dudleya (*Dudleya variegata*)	--/-- CRPR List 1B.2 MSCP	Low. Found in openings in sage scrub and chaparral, isolated rocky substrates in open grasslands, and a proximity to vernal pools and mima mound topography. Blooming period is May to June. While some rocks are present within sage scrub few openings exist to support species.
San Diego button-celery (*Eryngium aristulatum* ssp. *parishii*)	FE/SE CRPR List 1B.1 MSCP	None. Occurs in vernal pools and marshes; no suitable habitat on site.
Prostrate navarretia (*Navarretia fossalis*)	FT/-- CRPR List 1B.1 MSCP	None. Occurs in vernal pools and marshes; no suitable habitat on site.

Potential or Narrow Endemic Plant Species to Occur		
Species	**Status***	**Potential to Occur**
Snake cholla (*Opuntia californica* var. *californica*)	--/-- CRPR List 1B.1 MSCP	Very low. Occurs in chaparral and Coastal sage scrub from Point Loma south to Chula Vista and Baja. Would have been observed if present.
California Orcutt grass (*Orcuttia californica*)	FE/SE CRPR List 1B.1 MSCP	Low. Occurs in vernal pools and marshes; little suitable habitat on site.
San Diego mesa mint (*Pogogyne abramsii*)	FE/SE CRPR List 1B.1 CA Endemic MSCP	None. Occurs in vernal pools and marshes; marsh on site not suitable.
Otay Mesa mint (*Pogogyne nudiuscula*)	FE/SE CRPR List 1B.1 MSCP	None. Occurs in vernal pools on Otay Mesa; no suitable habitat on site.

*Refer to Appendix B for a listing and explanation of status and sensitivity codes

APPENDIX D: ANIMAL SPECIES OBSERVED

Species Name	Common Name	Habitat
Invertebrates		
	bee	CSS
Adelpha bredowii californica	California sister	RW-D
Apodemia virgult	Behr's metalmark	CSS
Anthocharis sara	Sara orangetip	CSS
Coenonympha tullia california	California ringlet	NNG
Pepsis sp.	tarantula hawk	CSS
Plebejus acmon	acmon blue	CSS
Vanessa annabella	west coast lady	CSS
Fish		
Gambusia affinis	mosquito fish	FWM
Amphibians		
Pseudacris cadaverina	California tree frog	FWM
Reptiles		
Aspidoscelis hyperythra beldingi	orange-throated whiptail	NNV, DH
Sceloporus occidentalis longipes	Great Basin fence lizard	CSS, DEV
Birds		
Aphelocoma californica	scrub jay	ORN, CSS
Buteo jamaicensis	red-tailed hawk	flyover
Buteo lineatus	red-shouldered hawk	EW
Callipepla californica	California quail	CSS
Calypte anna	Anna's hummingbird	CSS
Carduelis psaltria	lesser goldfinch	NNV
Carpodacus mexicanus	house finch	DEV, NNV
Chamaea fasciata	wrentit	CSS
Corvus corax	common raven	flyover
Dendroica coronata	yellow-rumped warbler	RW-D
Icterus cucullatus	hooded oriole	NNV
Melospiza melodia	song sparrow	CSS
Mimus polyglottos	northern mockingbird	NNV
Pipilo crissalis	California towhee	CSS
Pipilo maculatus	spotted towhee	CSS
Polioptila californica californica	coastal California gnatcatcher (SSC, FT)	CSS
Psaltriparus minimus	bushtit	CSS
Selasphorus rufus.	rufous hummingbird	CSS
Stelgidopteryx serripennis	northern rough-winged swallow	flyover
Toxostoma redivivum	California thrasher	CSS

Species Name	Common Name	Habitat
Zonotrichia leucophrys	white-crowned sparrow	CSS

SSC: California Species of Special Concern
FT: Federal-listed as Threatened

APPENDIX E: SPECIAL STATUS ANIMAL SPECIES WITH POTENTIAL TO OCCUR

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Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	**Scientific Name**	**Federal**	**State**	**MSCP**			
Invertebrates							
San Diego fairy shrimp	*Branchinecta sandiegoensis*	FE	None	covered	Found in Vernal pools among Mima mounds in CSS.	None: no vernal pools and only poling water was in drainages.	No
Monarch Butterfly	*Danaus plexippus plexippus* California overwintering population	TP	None		Native habitats, landscaping, backyards.	Low: only a few overwintering sites occur in San Diego. Most monarch are resident and not migratory in San Diego.	No
Quino checkerspot butterfly	*Euphydryas editha quino*	FE	None		Found on ridges and mesa tops in grasslands or openings in shrublands (e.g., fire breaks, near dirt roads) supporting dot-seed plantain host plant.	None: outside of known range and USFWS survey area.	No
Riverside fairy shrimp	*Streptocephalus woottoni*	FE	None	covered	Found in deeper vernal pools and ponds.	None: No vernal pools or ponds.	No
Reptiles							
Silvery legless lizard	*Anniella pulchra pulchra*	None	SSC		Occurs in areas with loose soil, particularly in sand dunes and or otherwise sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.	Moderate: in the because of the wide variety of microclimates present.	No

Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	**Scientific Name**	**Federal**	**State**	**MSCP**			
Southwestern pond turtle	*Clemmys marmorata pallida*	None	SSC	covered	Found largely in permanent water, particularly deep ponds with muddy substrates and abundant logs, rocks, or submerged vegetation for cover. Generally, native upland habitat nearby for overwintering.	None: No open ponding areas on site or in vicinity.	No
Orange-throated whiptail	*Cnemidophorus hyperythrus (Aspidoscelis hyperythra beldingi)*	None	None	covered	Open Coastal sage scrub, chaparral and often in brushy patches on stream terraces and other sandy areas.	Two detected but highly likely in most of areas studied	Yes
San Diego banded gecko	*Coleonyx variegatus abbottii*	None	SSC		Found in open scrub habitats and woodlands, often in association with rock outcrops from sea level to 4,000 ft.	Very Low: no rock outcrops present on sites.	No
Northern red diamond rattlesnake	*Crotalus ruber ruber*	None	SSC		Occurs in Coastal sage scrub and chaparral with abundant rocky outcrops.	Low: no noticeable rock outcrops on site.	No
San Diego horned lizard	*Phrynosoma coronatum blainvillei (Phrynosoma blainvillii)*	None	SSC	covered	Inhabits open sage scrub where it preys upon carpenter and other native ants.	Low: Urban situation reduces native ant populations because of presence of Argentine ants.	No
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	None	SSC		Found in Coastal sage scrub, chaparral, riparian, grasslands, and agricultural fields. Prefers open habitat with friable or sandy soils, burrowing rodents for food, and enough cover to escape being preyed upon	Low: Some suitable habitat found on site, but soil not friable and limited cover in terms of rock outcroppings	No

Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	**Scientific Name**	**Federal**	**State**	**MSCP**			
Western spadefoot toad	*Scaphiopus hammondii*	None	SSC		Habitats include Coastal sage scrub, chaparral, and grassland. with temporary pools for breeding and friable soils for burrowing.	Low: water in creek likely too polluted for species to use. Few flat areas to allow ponding.	No
Two stripe garter snake	*Thamnophis hammondii*	None	SSC		Found along permanent creeks and streams but also around vernal pools and along intermittent streams. Rarely found in upland scrub habitats relatively far from permanent water.	Moderate: nearest reported sightings are from MCAS Miramar. Drainage on at SD #s 1-3 runs permanently.	No
South Coast garter snake	*Thamnophis sirtalis novum*	None	SSC		Found in north County watersheds. Prefers riparian areas with willows and mule fat.	Low: not known from the vicinity and limited habit.	No
Birds							
Cooper's hawk	*Accipiter cooperi*	None	None	covered	Occurs in oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests	Low: minimal habitat in these canyons. May use trees in yards and stets above canyons.	No
Tricolored blackbird	*Agelaius tricolor*	None	SSC/ Candidate-Endangered	covered	Freshwater marsh for breeding; grasslands and agriculture for foraging	Low: detention basin has no open water, limited nesting, and no foraging area.	No
Rufous-crowned sparrow	*Aimophila ruficeps canescens*	None	None	covered	Coastal sage scrub and chaparral – typically with prominent rock outcrops	Moderate to High: open sage scrub or chaparral is preferred.	No
Grasshopper sparrow	*Ammodramus savannarum*	None	SSC		Open grasslands of intermediate height and density	None: no suitable habitat occurs on the sites.	No

Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	Scientific Name	Federal	State	MSCP			
Bell's sage sparrow	*Amphispiza belli belli*	BCC	None		Prefers semi-open habitats with evenly spaced shrubs 3-6 ft tall in dry chaparral and Coastal sage scrub.	Low: no records of the Sage Sparrow from isolated canyons within the City of San Diego	No
Burrowing owl	*Athene cunicularia hypugea*	None	SSC	covered	Open grasslands, agricultural fields	None: no suitable habitat Grasslands on SD5 are on a slope near trees and unsuitable.	No
San Diego cactus wren	*Campylorhynchus brunnicapillus couesi (Campylorhynchus brunneicapillus sandiegensis)*	None	SSC	covered	Cactus patches in Coastal sage scrub/chaparral	None: no large patches of cactus within the study area	No
Northern harrier	*Circus cyaneus hudsonius*	None	SSC	covered	Marshes, agricultural fields, grasslands	Low: while marsh present no fields or grasslands in vicinity.	No
Yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT	SE		Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.	Very Low: exceedingly rare bird not seen in urban areas. Little habitat present on site.	No
Yellow warbler	*Dendroica petechia brewsteri (Setophaga petechia)*	BCC	SSC		Breeding restricted to riparian woodlands	Low: little native riparian woodland in the study area.	No
White-tailed kite	*Elanus caeruleus*	NA	FP		Riparian woodlands and oak or sycamore groves adjacent to grassland	Very low: No suitable combination of habitats present.	No
Southwestern willow flycatcher	*Empidonax trailii extimus*	FE	SE	covered	Riparian thickets, woodlands, and forests	None: no habitat present	No

Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	Scientific Name	Federal	State	MSCP			
Horned lark	*Eremophila alpestris actis*	None	None		grasslands and agriculture for foraging and breeding	None: no suitable habitat present.	No
Prairie falcon	*Falco mexicanus*	BCC	None		Shrubby habitats and grasslands	Low: little suitable habitat for the species.	No
American peregrine falcon	*Falco peregrinus anatum*	BCC	FP		Open grasslands, agricultural fields especially near water	Very Low: no suitable habitat present.	No
Yellow-breasted chat	*Icteria virens*	None	SSC		Riparian woodlands, primarily in the coastal lowland but will also use the foothill zone	Low: little native riparian woodland present.	No
Loggerhead shrike	*Lanius ludovicianus*	BCC	SSC		Grassland, open sage scrub, chaparral, and desert scrub	Low: suitable habitat is very steep	No
Coastal California gnatcatcher	*Polioptila californica californica*	FT	None	covered	Coastal sage scrub, occasional in chaparral	Detected at all SD locations	Yes
Bank swallow	*Riparia riparia*	None	ST		Low areas along rivers, streams, ocean coasts, or reservoirs.	Low: streams are narrow and have no easily accessible banks suitable for the species	No
Least Bell's vireo	*Vireo bellii pusillus*	FE	SE	covered	Riparian scrub and woodlands	None: little willow-dominated habitat which is its preference.	No

Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	**Scientific Name**	**Federal**	**State**	**MSCP**			
Mammals							
Pallid bat	*Antrozous pallidus*	None	SSC		Often in mountainous or rocky areas near water. Roosts in caves, mines, bridges, crevices, abandoned buildings, and trees	Low: little roosting or foraging habitat in alignments. Has declined in coastal and urban areas and is now restricted to East County and some larger open space areas on the urban edge.	No
Dulzura California pocket mouse	*Chaetodipus californicus femoralis*	None	SSC		Forages on seeds of forbs, grasses, and shrubs in Coastal sage and arid scrubs with sandy or gravelly soil.	Low to Moderate: habitat components present.	No
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	None	SSC		Occupies shrublands that vary from sparse desert shrublands to dense coastal scrub. It tends to be more abundant where rocks or shrubs provide cover	Low: as few rocks are present in the canyon slopes which have been significantly modified.	No
Mexican long-tongued bat	*Choeronycteris mexicana*	None	SSC		Found in deciduous, semi-arid scrub and coniferous forests. Roosts in caves or abandoned buildings during the day.	Low: little foraging habitat in area.	No
Greater western mastiff bat	*Eumops perotis californicus*	None	SSC		Chaparral and oak woodland with coast live oaks and in arid, rocky areas. Roosts on or in buildings, trees, tunnels, and crevices in cliffs	Low: no oak-lined riparian or rocky chaparral present so little foraging habitat for species.	No
Mountain lion	*Felis concolor*	NA	NA	covered	Wide-ranging species lives in mountains and hill country. Sometimes it comes down to suburban areas.	None: area too urban to support species.	No

Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	Scientific Name	Federal	State	MSCP			
Western red bat	*Lasiurus blossevillii*	None	SSC		Red bats will most likely be found in the forest roosting under leaves	Low: no forest habitat.	No
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	None	SSC		Found in open Coastal sage scrub and chaparral with associated grassland.	Low: hillsides too steep and have little suitable habitat in areas.	No
San Diego desert woodrat	*Neotoma lepida intermedia*	None	SSC		Found in open chaparral and Coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca	Low: typically builds nests in shrublands among rock outcroppings. No rock outcrops present and no nests detected during surveys.	No
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	None	SSC		Mostly occurs in desert; roosts in rock outcrops	Low: no rock outcrops on sites. Sites are all relatively coastal.	No
Big free-tailed bat	*Nyctinomops macrotis*	None	SSC		Rocky areas; by day, roosts in rocky cliffs, sometimes caves, buildings, or tree holes	Low: City canyons area not particularly rocky habitats. Most nearby buildings are homes, and few trees occur along the alignments to provide roosting.	No
Southern mule deer	*Odocoileus hemionus fuliginatus*	NA	NA	covered	The mule deer lives throughout the western United States, including the deserts. It may migrate in response to rainfall.	Low: while adaptable moving through suburban areas, no sign was detected and none were seen.	No

Species		Status			Habitat Associations	Potential to Occur On Site	Observed
Common Name	Scientific Name	Federal	State	MSCP			
Pacific pocket mouse	*Perognathus longimembris pacificus*	FE	SSC		Fine or sandy soils with sparse Coastal sage scrub or disturbed grassland within 2.5 miles of Ocean	Very low: no suitable soil and too far from coast.	No
American badger	*Taxidea taxus*	None	SSC	covered	Open plains, grasslands, fields, and pastures, occasionally on edges of woods	None: Not found in urban or suburban areas, no evidence and no burrows detected.	No

Status:

MSCP = Covered species in the Multiple Species Conservation Plan

Federal:

BCC = Bird of Conservation Concern
FE = Federal Endangered
FT = Federal Threatened
TP = Proposed Threatened

State:

FP = Fully Protected
SE = State Endangered
SSC = Species of Special Concern
ST = State Threatened

APPENDIX F: SITE PHOTOGRAPHS

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Storm Drain 1



Photos Storm Drain 1 and Access

Figure 1: Photo Guide – SD 1.



Photo SD 1.1: Overview of SD 1 access from Shawn Ave (taken from across canyon)



Photo SD 1.2: Looking south along the access from Shawn Ave. The subshrubs in the grass on the west side of the path are the CRPR 1B.2 decumbent goldenbushes which need to be avoided.



Photo SD 1.3: Looking North into the area of SD 1 along the access to SD 1.



Photo SD 1.4: Looking down the alignment for SD 1 from the backyard fence above the SD on the east side of the canyon. CSS along slopes above SD 1.



Photo SD 1.5: Looking northeast at the existing SD 1 outfall which is mostly buried and barely functional and well above the start of jurisdictional portion of the drainage.



Photo SD 1.6: Looking upstream from the start of jurisdiction in the drainage. The access can be pushed into this area to avoid impacts to wetlands.



Photo SD 1.7: Looking at the start of jurisdiction in the drainage.



Photo SD 1.8: Looking downstream from the work area where the drainage enters a Mexican fan palm cluster.

Storm Drain 2



Figure 2: Photo Guide – SD 2.



Photo SD 2.1: Looking northeast at overview of SD 2 alignment through CSS and CRPR 4.2 San Diego sunflower.



Photo SD 2.2: Looking west at access to SD 2 from the top of the ramp off the Stonecrest Village Trail. Access is along the southern edge of the detention basin and up the canyon.



Photo SD 2.3: Looking east down the access path in the canyon for SD 2 showing narrow channel and palms with ice plant and CSS above the channel.



Photo SD 2.4: Looking south down SD 2 alignment past CSS and with poison oak at the bottom above the palm-lined channel.



Photo SD 2.5: Looking north up SD 2 alignment.



Photo SD 2.6: Looking northeast at existing SD 2 outfall that is broken and not functioning with water flowing over it.



Photo SD 2.7: Looking downstream from SD 2 work area at the edge of the northern side of the palms.

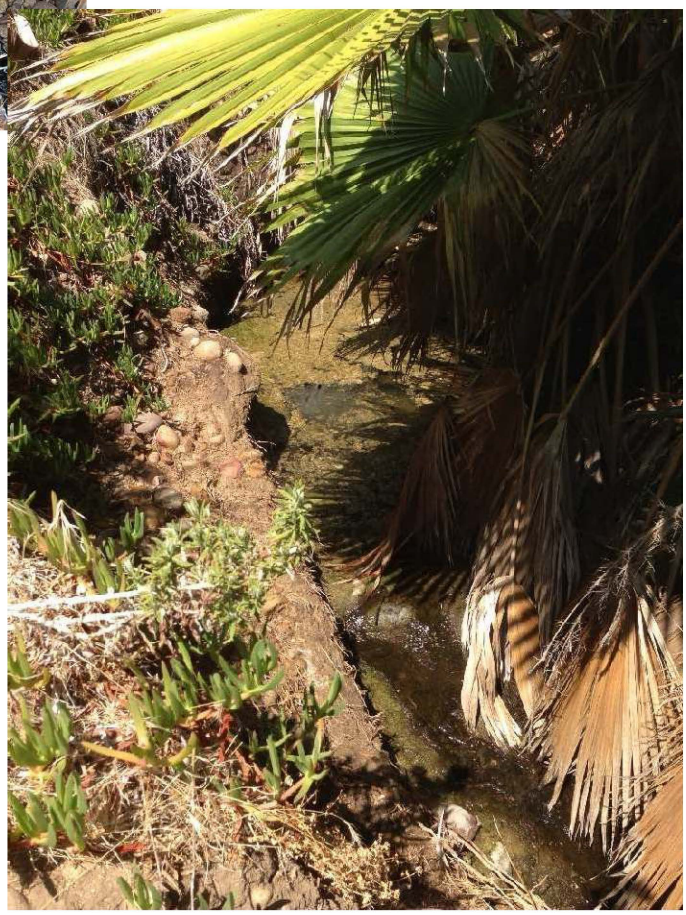


Photo SD 2.8: Looking upstream from SD 2 work area at the edge of the southern side of the palms.

Storm Drain 3

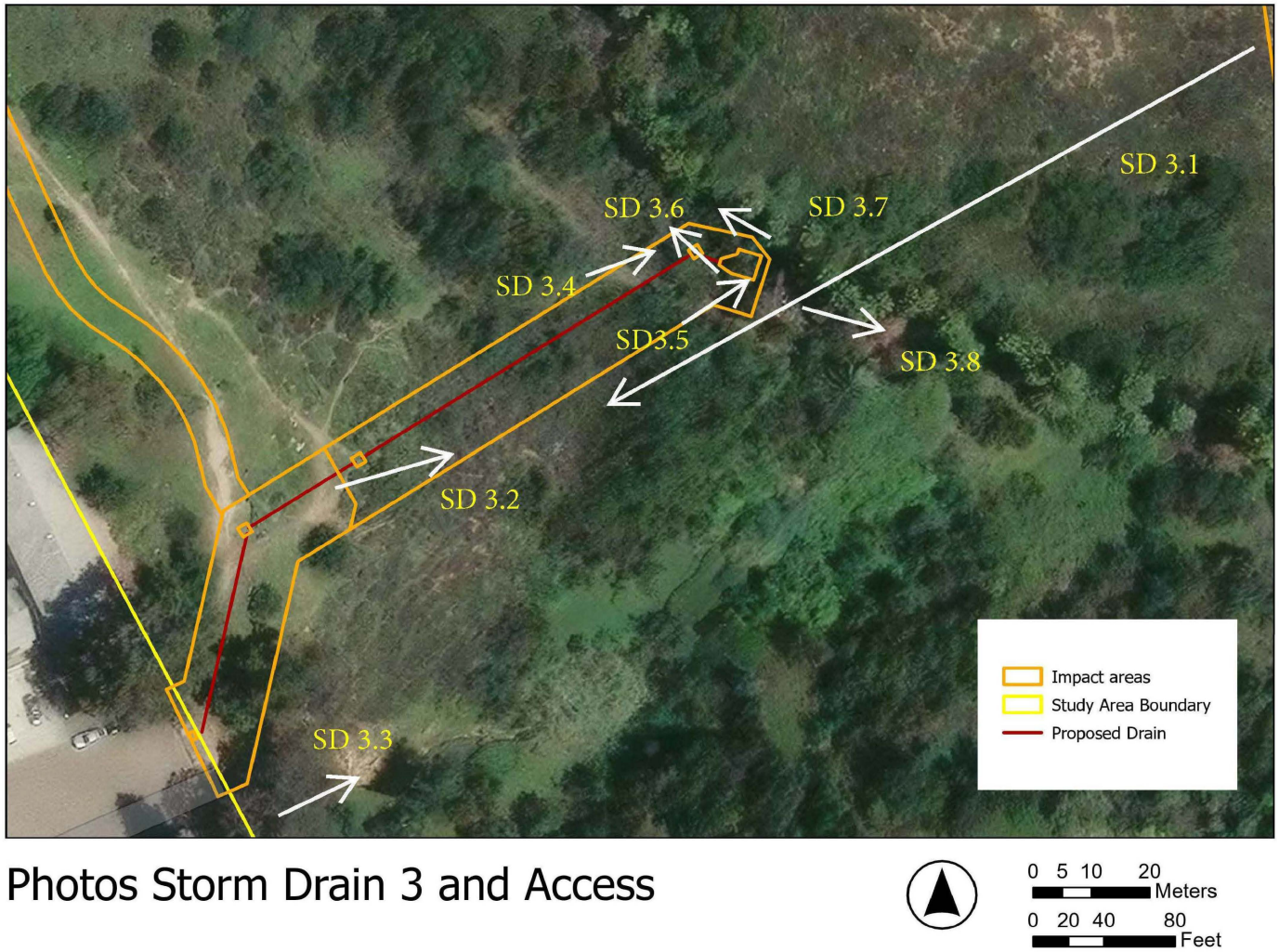


Figure 3: Photo Guide – SD 3.



Photo SD 3.1: Looking across to SD 3 access and alignment with Shawn Ave above and blowout of SD visible.

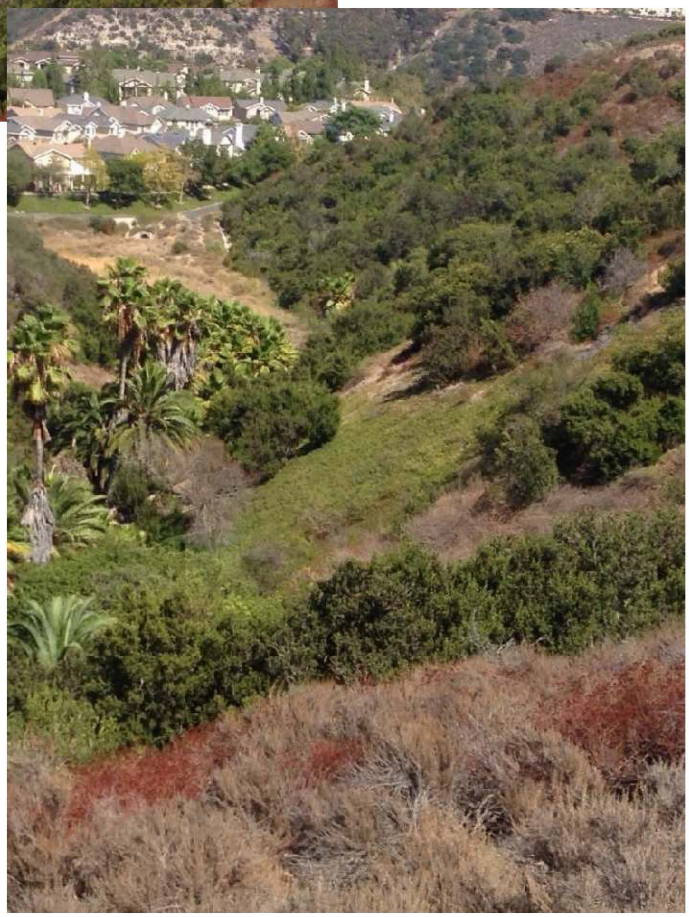


Photo SD 3.2: Looking east along the canyon past the new SD 3 alignment which passes through the CSS at the bottom of the photo.



Photo SD 3.3: Looking at old SD 3 alignment from above the blowout below Shawn Ave.



Photo SD 3.4: Flagging tape outlines outfall of proposed SD 3 above channel (palm).



Photo SD 3.5: Looking north across the channel down from the section proposed for the SD 3 outfall. Palm debris prevented access to the drainage from above.



Photo SD 3.6: Looking upstream into mass of palm debris covering the creek below proposed SD 3 outfall.



Photo SD 3.7: Looking upstream along drainage past some palm debris with water flowing on north side of channel.

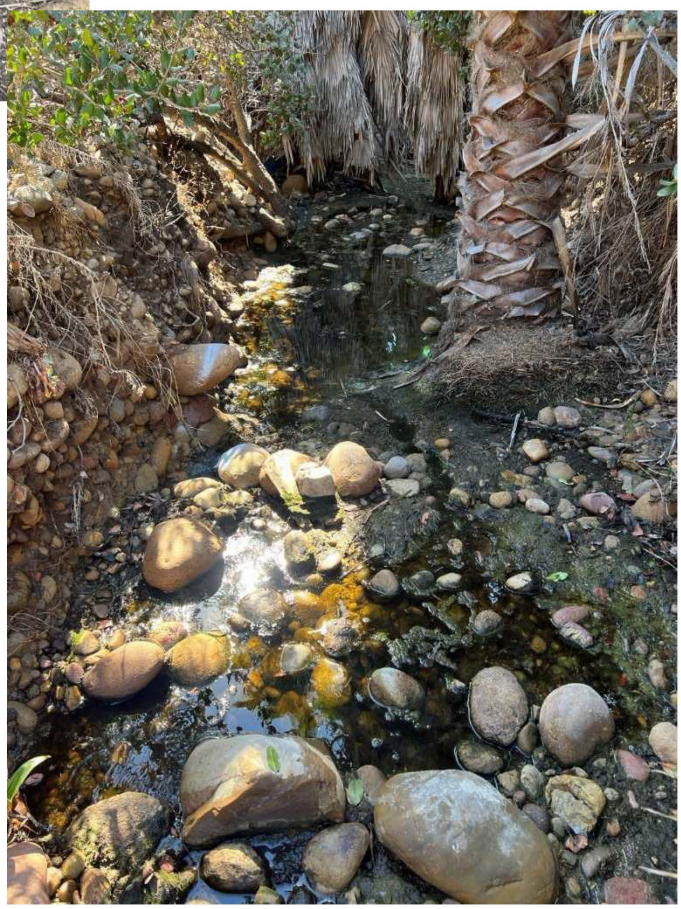


Photo SD 3.8: Looking downstream along drainage past some palms with water flowing on north side of channel.

Storm Drain 4

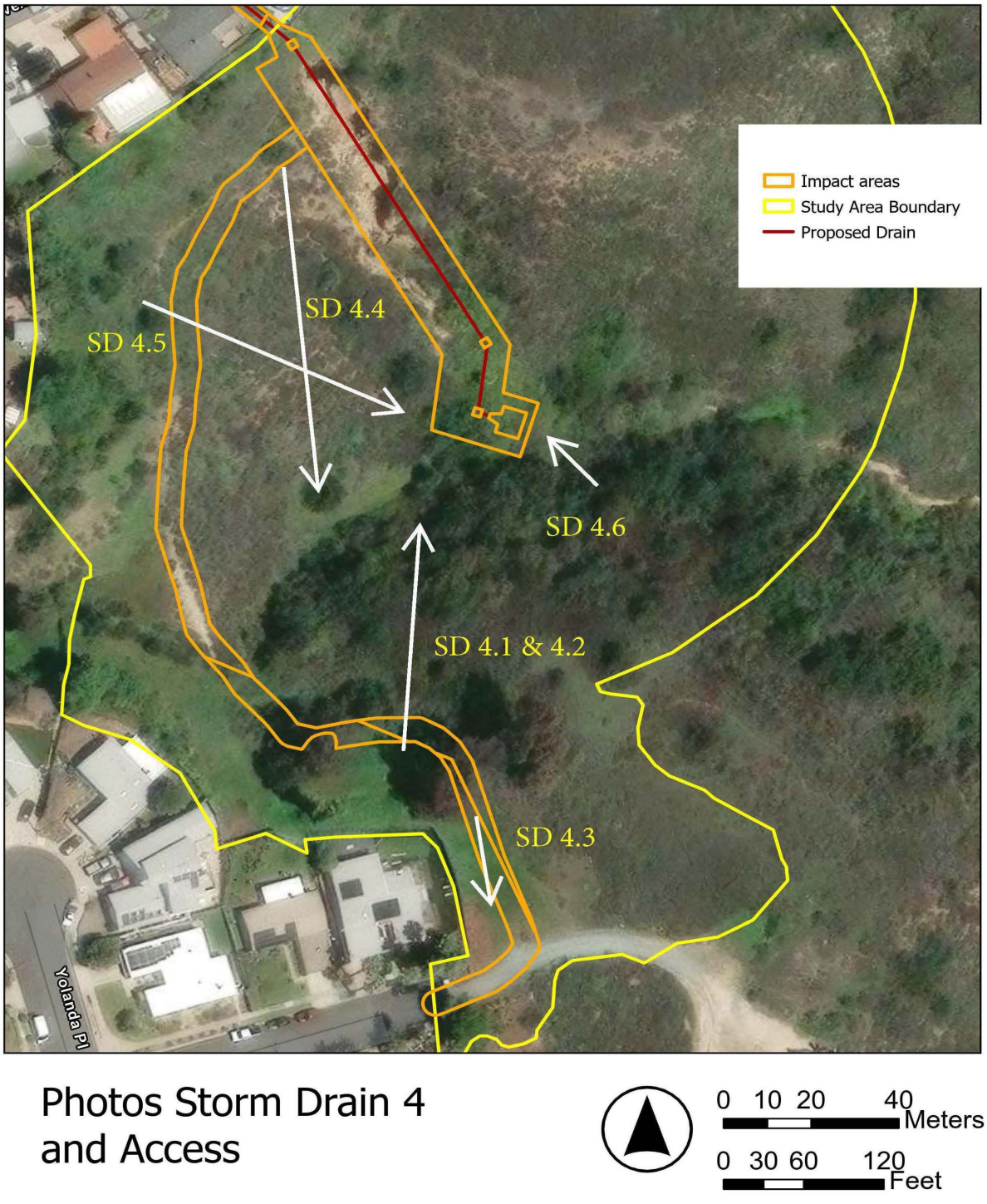


Figure 4: Photo Guide – SD 4.





Photos SD 4.1 and 4.2: North-facing overview of SD 4 before and after SD blowout.



Photo SD 4.3: looking south along the access from Yolanda Ave. The subshrubs in the access path are the CRPR 1B.2 decumbent goldenbush which need to be avoided.



Photo SD 4.4: Access Path to SD 4.

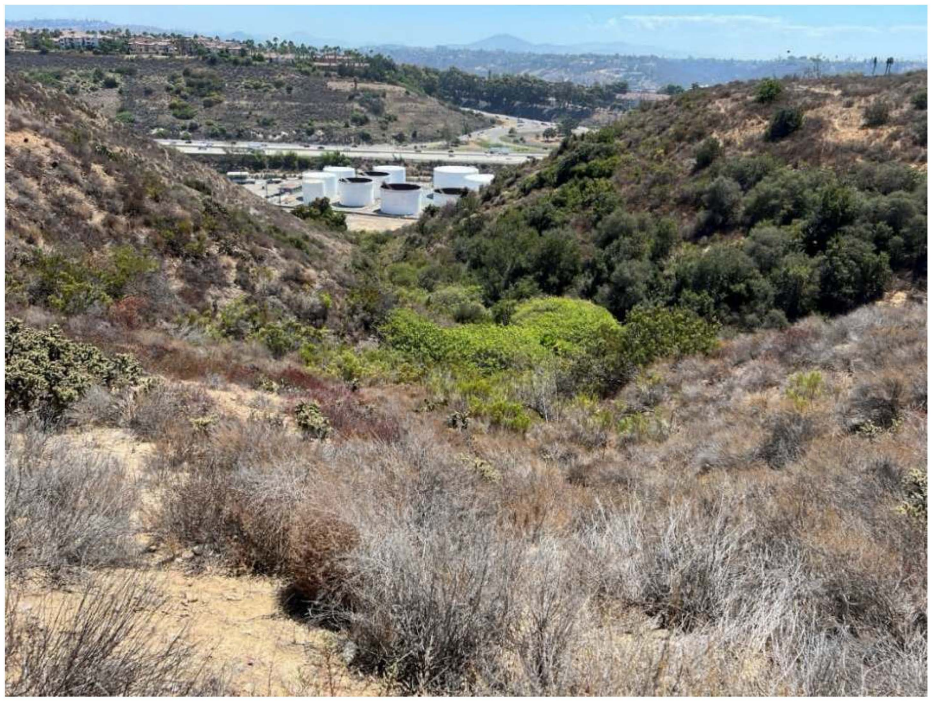


Photo SD 4.5: Looking east at vegetation types along the alignment which include CSS in front and NNV (Brazilian pepper) at bottom of canyon of the proposed outfall. The slope on the right supports Scrub Oak Chaparral.



Photo SD 4.6: Beneath the Brazilian pepper the cobble and soil from the blowout are strewn along the canyon floor in a chaotic manner.

Storm Drain 5



Figure 5: Photo Guide – SD 5.

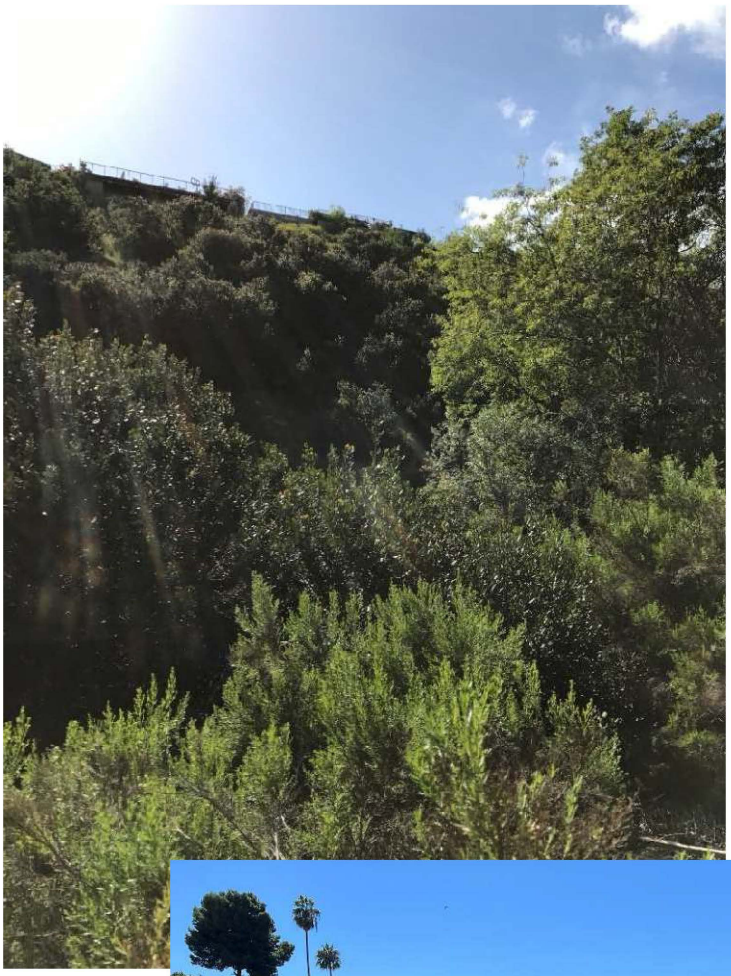


Photo SD 5.1: Overview of the slope of SD 5 in Ruffin Canyon. Alignment passes from left of the tree, turns behind the tree and then up the slope through the lemonade berry-dominated CSS.

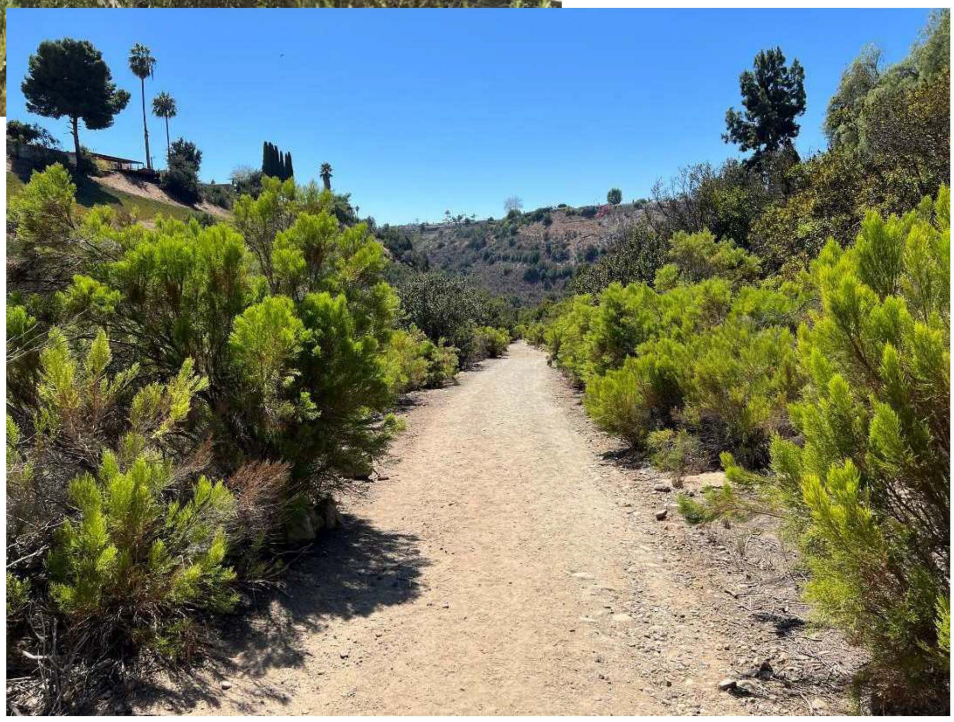


Photo SD 5.2: Access to SD 5 is off the western terminus of Shawn Ave down the Shawn Canyon Trail. This picture was taken just west Shawn Ave.



Photo SD 5.3: Looking west down the Shawn Canyon Trail where the creek crosses the trail.



Photo SD 5.4: Looking north along Ruffin Canyon Trail. Ruffin Canyon Creek turns west (left) out of the trail and then heads south parallel to the Ruffin Canyon Trail.



Photo SD 5.5: Looking north along the Ruffin Canyon Trail showing algae and some water on the right. The alignment peels off the trail in the upper left.



Photo SD 5.6: Looking northwest along the alignment on the lower slope after the access heads west off Ruffin Canyon Trail. The alignment heads up slope though the lemonade in the middle to upper left.

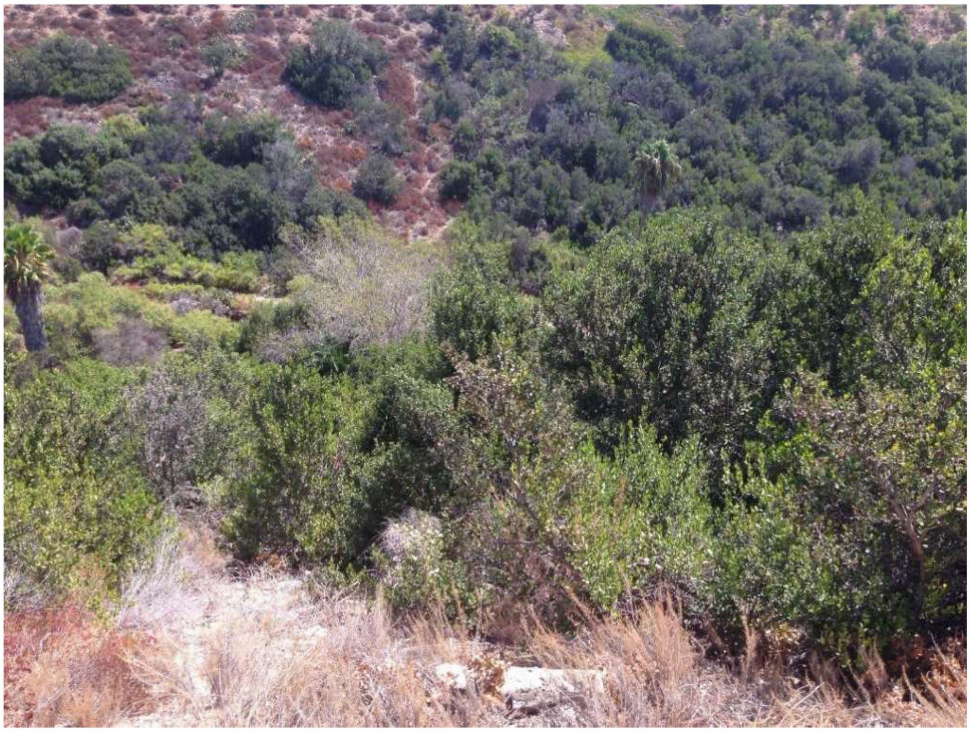


Photo SD 5.7: Looking down the alignment of SD 5 from the top of the canyon.



Photo SD 5.8: Exiting SD 5 outfall.

APPENDIX G: REPORT AUTHOR AND FIELD RESUMES

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DEREK LANGSFORD PHD, CSE

Project Manager

Experience Summary

Over 35 years of experience as an ecologist and over 25 years in government and consulting as a CEQA regulator, project manager, and group manager in San Diego. He has managed projects on behalf of federal, state, county, and municipal governments, water, school, college, and hospital districts, as well as numerous private clients. Participates in all biological aspects of projects including field surveys, habitat evaluations, data analysis, preparation of technical reports, wetland permitting applications and regulatory compliance, and mitigation, monitoring, and management plans. Key aspects of his experience include impact assessment in a wide range of biological resources, both wetland/riparian and upland, and in coastal, inland, and desert environments. He has negotiated project mitigation requirements for impacts to threatened and endangered species with federal and state wildlife agencies in the complex regulatory environment of San Diego County. Management capabilities include client liaison, budgeting, research, fieldwork scheduling and supervision of field biologists, agency liaison, scientific review, and quality control. He is a County of San Diego Approved Biologist and has extensive experience in the San Diego region.

Education

PH.D. IN ECOLOGY
University of California, Davis/SDSU
1996

B.SC. IN ECOLOGICAL SCIENCE
University of Edinburgh, Scotland
1985

Permits, Certifications, Training

- Certified Sr. Ecologist, Ecological Society of America, 2012- Present
- Approved Biological Consultant, County of San Diego, 1999– Present
- Certificate in GIS, Cuyamaca College 2013
- AED/CPR, March 2017
- 38-hr USACE Wetland Delineation Training Program, Richard Chinn, 2017
- CPESC Review & CESSWI Integrations Course, Michael Harding

Project Experience

OTAY 2ND PIPELINE PHASE 4 PROJECT
San Diego, CA | Rick Engineering Company / City of San Diego | 2022-2025.
Biological Project Manager for the 3.2-mile Otay 2nd Pipeline Phase 4 Project that extends from the County of San Diego (County) Community of Bonita to Telegraph Canyon Road in the City of Chula Vista. The alignment passes through areas of the County's MSCP Planning Area and City's MSCP Subarea and required a Biological Technical Report, Aquatic Resources Delineation Report, and a Revegetation Plan to restore temporary impacts.

WEST MISSION BAY DRIVE BRIDGE REPLACEMENT
Kleinfelder | San Diego, CA | 2018-Present
Primary Qualified Biologist (PQB) for the replacement of the current 4-lane bridge with two 3-lane bridges with bike lanes and sidewalks across the San Diego River Flood Control Channel. Managed preconstruction surveys in fulfillment of Coastal Development Permit and have overseen monitoring of light-footed Ridgway's rail, marine mammals and sea turtles, airborne noise and hydroacoustic sound during impact pile driving, monitoring of bird nests, weeding, and planting at two mitigation sites (Dog Beach and Pacific Highway). Also perform weekly checks of construction and mitigation sites. Prepare and provide QA/QC for weekly, monthly, and seasonal monitoring reports in satisfaction of project conditions and permits. Work performed for Kleinfelder Construction Services on behalf of the City of San Diego.

BIOLOGICAL SUPPORT FOR THE CITY OF SAN DIEGO ENGINEERING ON-CALL (INCLUDING RENEWAL)
Rick Engineering | San Diego, CA | 2015-Present
Acted as Project Manager, Lead Biologist, and Wetland Delineator. TDI provided biological resource surveys and reporting to Rick Engineering for various City of San DPW Diego projects which required vegetation mapping, rare plant surveys, jurisdictional delineation, biology reports, and Revegetation Plans.

- Maple Canyon Jurisdictional Determination and Biology Report Addendum 2018-2019
- Southcrest Green Infrastructure Improvements 2018
- Scripps Ranch Storm Drain Replacement Project - 2017
- Coast Blvd Walkway Improvements Project - 2016-2019
- Serra Mesa Storm Drain Replacement & Green Infrastructure Project - 2016-present
- Clairemont Mesa Storm Drain Replacement – 2018
- Sunset Cliffs Natural Park Building Removal – 2016-present
- Sunset Cliffs Natural Park Drainage Improvements – 2018-present

AS-NEEDED BIOLOGICAL CONSULTING SERVICES
City of Vista | Vista, CA | 2013-Present
Acted as project manager, senior biologist, and chief reviewer of reports.

Third-Party Review: Review to ensure compliance of the proposed projects and biological resource reports with the biologically related regulatory requirements of the City, State of California, and the federal government; that the studies followed state and federal, and industry-accepted methodologies; and to verify that all appropriate findings for the resources present on site are made.

- Emerald Drive - Subdivision
- Rancho Lomas Verdes – Major Subdivision
- Santa Fe Avenue – Persea multi-family
- Sycamore-Watson Condominiums

Biological Resource Reports: Biological Resource surveys and preparation of reports in satisfaction of regulatory requirements.

- Vista Grande Subdivision
- Monte Mar Center – Shopping Center
- Sunroad Plaza – Shopping Center

BUSINESS PARK DRIVE & POINSETTIA AVENUE PARCEL
Commercial Development Resources | Vista, CA | 2018-2019
Biology Project Manager. Biological survey and wetland delineation to determine edge centerline and bank of drainage feature in conservation area adjacent to site and from which City required setbacks for development. Prepared a Constraints Report of findings.

BIOLOGICAL CONSULTING SERVICES FOR THE VISTA TERRACE MARKETPLACE PROJECT
Black Lion Investment Group | Vista, CA | 2017-2019
Biology Project Manager. Biological Survey, Jurisdiction Delineation (JD), Biology and JD Report for this proposed Sprouts Market in north Vista. Proposed Project needed to culvert section of Buena Vista Creek which required wetland permits. Prepared applications and secured all wetland approvals, identified, and secured mitigation.

KEYSTONE VICTORY PARK PROJECT
Badiee Development | Vista, CA | 2015-2017
Biology Project Manager for biological resource surveys and processing of the project that prosed two concrete-tilt buildings on a 10.4-acre site off Keystone Way in the City of Vista. Performed vegetation mapping, rare plants surveys, census of Nuttall's scrub oak and California adolphia, prepared biology report, and identified mitigation in compliance with CEQA, and MHCP.

PORTSIDE PIER PROJECT
RECON Environmental | San Diego, CA | 2016-2017
Biology Project Manager. Field survey, biology report, and Essential Fish Habitat (EFH) assessment for the demolition of the existing restaurant and construction of the new Portside Pier complex of eateries on the North Embarcadero of San Diego Bay. Issues included effects on marine mammals and seas turtles of pile removal during demolition and driving for construction, effects on EFH, increase in shading of bay water, and bird collisions on glass surfaces. Work performed for RECON under their on-call Environmental contract with Port of San Diego.

JOSEDIEGO URIBE, MS

Staff Biologist

Experience Summary

Over 10 years of experience as an ecologist and over four years in government environmental services and consulting as a project manager and wildlife biologist in San Diego and Central Ohio. He has managed projects in California on behalf of federal clients, water districts, cities, and private clients. Participates in all biological aspects of projects including field surveys, habitat evaluations, data analysis, preparation of technical reports, regulatory compliance, and mitigation, monitoring, and management plans. He has over 20 years of experience in bird identification and has experience assisting in wetland delineations in California, Ohio, and Virginia. Management capabilities include client liaison, budgeting, research, fieldwork scheduling and supervision of field biologists, agency liaison, scientific review, and quality control.

Education

MS. IN ECOLOGY
San Diego State University
2022

B.A. IN INTERNATIONAL BUSINESS
San Diego State University
2009

Permits, Certifications, Training

- OSHA 30HR Construction Safety Training
- AED/CPR, May 2024
- Roadway Worker Protection (RWP) training -2025
- AED/CPR, March 2017
- PADI Open Water Diver and AAUS Research Diver - Present
- Qualified Pesticide Applicator Certificate 2011-2017
- Basic NEPA Workshop, 2013 - 2014
- Advanced CEQA Workshop & Practicum, 2014

Project Experience

Otay 2nd Pipeline Phase 4 Project - Compensatory Mitigation Site
San Diego, CA | Rick Engineering Company / City of San Diego | 2022-2025.
Biological consulting services for the 3.2-mile Otay 2nd Pipeline Phase 4 Project that extends from the County of San Diego (County) Unincorporated Community of Bonita at the Willow Street Bridge to Telegraph Canyon Road in the City of Chula Vista. The alignment passes through areas of the County's MSCP Planning Area and City's MSCP Subarea and would require biological monitoring and submittal of a biological technical report to confirm no sensitive resources (sensitive vegetation communities including wetlands and coastal sage scrub) were impacted.

Serra Mesa Storm Drain & Green Infrastructure Project
San Diego, CA | Rick Engineering Company / City of San Diego | 2022-2025.
Staff scientist providing biological consulting services to identify, map and monitor the natural and biological resources as well as the potential impacts to them for the proposed replacement of seven SD systems for the Serra Mesa Storm Drain & Green Infrastructure Project (Project) in the Serra Mesa Community of the City of San Diego (City), in support of the CEQA. Assisted in the writeup of Aquatic resource delineation report (ARDR).

Wetland Mitigation Plan for the La Media Road Improvement Project
San Diego, California| Otay Mesa, CA | City of San Diego | 2023-Ongoing.
Staff Biologist/Project Management support for the enhancement of vernal pool habitat, implementation of mitigation of a freshwater marsh, emergent wetland, and southern willow scrub habitats and area enhancement for burrowing owl breeding habitat due to impacts caused by the La Media Road Improvement. Assisted with on-site field supervisor activities during maintenance and construction activities as well as assist in schedule coordination and project logistics. Assisted with GIS mapping and GPS tracking of sensitive biological species, monitoring, and technical reports.

Vernal Pool Mitigation Plan for the La Media Road Improvement Project
San Diego, California| Otay Mesa, CA | City of San Diego | 2023-Ongoing.
Field Biologist/Project Management Support for the establishment, re-establishment, and enhancement of vernal pools as mitigation for 0.150 acre of impacts caused by the La Media Road Improvement. Assist with on-site field supervisor activities during maintenance and construction activities as well as assist in schedule coordination and project logistics. Assist with GIS mapping and GPS tracking of sensitive biological species, monitoring, and technical reports.

2024 MSCP Annual Report County of San Diego | 2024-2025.
Land Use Environmental Planner II/
Project Manager for the drafting of the 2024 Annual Report. The County of San Diego produces annual reports on the progress of the approved South County Subarea Plan. These include information about impacts, conservation, and land management within the County Subarea. Each year, a public workshop is held to present and summarize the progress of the MSCP for all the participating jurisdictions.

Rincon Reservation BIA Endangered Species Program | Valley Center, CA | Rincon Band of Luiseño Indians | 2022-Ongoing.
Biologist involved in the inventory, assessment and mapping and surveying for endangered species and invasive species and working to control invasive species when discovered at the Rincon Reservation Preserve. Species worked with include Arroyo Toad (survey), Argentine Ant (survey and manage), and American Bullfrog (survey and manage).

Lincoln Military Housing Brush Management Implementation 2023/2025
San Diego, CA | San Diego Family Housing | 2023/2025.

- Village of Serra Mesa Fence Line Brush Maintenance Project (2023/2025)
- Murphy Canyon Brush Management Implementation 2022, 2024
- Bayview Hills Paradise Valley Road Brush Maintenance (2023)

Sweetwater Park Construction Monitoring at the Chula Vista Bayfront
Chula Vista, CA | San Diego Unified Port District | 2023- 2024.
Biological monitor /Project Management Support. On-site field monitoring for bird and raptor nest surveys. Biomonitoring and environmental training of sensitive resources during and post construction.

Multiple habitat restoration projects 2023-2024. Assistant Project Management.

- Los Peñasquitos Lagoon Habitat Mitigation | Del Mar, CA | Los Peñasquitos Lagoon Foundation | 2023-2024.
- Deer Canyon Upland Mitigation Site | San Diego, CA | California Department of Transportation
- Deer Canyon East Mitigation Site - Phase II | San Diego, CA | SANDAG & Caltrans
- Anderprises Phase 2 | Otay Mesa, CA | SANDAG & Caltrans | 2023.
- Ecke Vernal Pool Mitigation Site | Carlsbad, CA | SANDAG & Caltrans | 2023.

West Mission Bay Drive Bridge Replacement Project
San Diego, CA | City of San Diego | 2022-2024.
Staff scientist assisting PQB in the project involving the replacement of the WMBD bridge with two new bridges with bike lanes and sidewalks across the San Diego River Flood Control Channel. Responsible for biological compliance, biological monitoring of (light-footed Ridgway's rail, marine mammal, Salt Marsh Bird's Beak), vegetation mapping, invasive species removal and reporting for bridge construction and mitigation implementation.

APPENDIX H: SERRA MESA STORM DRAIN & GREEN INFRASTRUCTURE LANDSCAPE PLAN

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