San Diego County Water Authority
Our Region's Trusted Water Leader

SUBREGIONAL NATURAL COMMUNITY CONSERVATION PLAN/ HABITAT CONSERVATION PLAN

2021 ANNUAL REPORT

Prepared March 2022

2021 Annual Report

San Diego County Water Authority Subregional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP)

MARCH 2022

Prepared for:

U.S. FISH AND WILDLIFE SERVICE

and

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Prepared by:

SAN DIEGO COUNTY WATER AUTHORITY

and

DUDEK

REPORT CERTIFICATION

I certify under penalty of perjury that, to the best of my knowledge, after appropriate inquiries of all relevant persons in the preparation of this report, the information submitted here is true, accurate, and complete.

Summer Adleberg _____ 06/27/2022

Summer Adleberg,
Principal Water Resources Specialist

Date

CWA Project No.	65013	SDCWA Project Name	San Diego County Water Authority Subregional NCCP/HCP 2021 Annual Report
SDCWA ENV No.	TBD	SDCWA Contract ID/Task No.	061904/26
Associated Permits	2810-2011-001-05; TE03216A-0		

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Acronyms and Definitions

Acronym/Abbreviation	Definition
USACE	U.S. Army Corps of Engineers
B.O.	Biological Opinion
BRR	biological resources report
BSRA	Biologically Significant Resource Area
Caltrans	California Department of Transportation
CBI	Conservation Biology Institute
CCP	Comprehensive Conservation Plan
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CER	Crestridge Ecological Reserve
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
CSP	Carryover Storage Project
EDI	Earth Discovery Institute
EHC	Endangered Habitats Conservancy
EIR	environmental impact report
EIS	environmental impact statement
ESP	Emergency Water Storage Project
FCF	flow control facility
First Aqueduct	First San Diego Aqueduct
FRS	flow regulatory structure
HCP	Habitat Conservation Plan
HMA	Habitat Management Area
I-15	Interstate 15
IA	Implementing Agreement
mg	million gallon(s)
MHPA	City of San Diego Multi-Habitat Protection Area
MMA	Managed Mitigation Area
MND	Mitigated Negative Declaration
MSCP	Multiple Species Conservation Program
NCCP	Natural Community Conservation Plan
O&M	operation and maintenance
P1	Pipeline 1
P2	Pipeline 2
PAMA	Pre-Approved Mitigation Area
PAMP	Preserve Area Management Plan
Plan	Natural Community Conservation Plan/Habitat Conservation Plan
Refuge	San Diego National Wildlife Refuge Complex
ROW	right-of-way
Second Aqueduct	Second San Diego Aqueduct
USFWS	U.S. Fish and Wildlife Service
VCMWD	Valley Center Municipal Water District
Water Authority	San Diego County Water Authority

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1 Introduction

This document provides an update on the status of the San Diego County Water Authority's (Water Authority) Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP or Plan) Preserve Area properties and Covered Activities that occurred during the reporting period of January 1 through December 31, 2021.

1.1 NCCP/HCP Background

Multiple species conservation planning is a concept envisioned in the federal Endangered Species Act under Section 10(a)(1)(B), which describes HCPs. The process began to function more effectively as a means to address and work with federal and state listed species with the adoption of the Natural Community Conservation Planning Act of 1991 and the listing of the coastal California gnatcatcher (*Polioptila californica californica*) as threatened under the federal Endangered Species Act in 1993. Over the past two decades, a number of multi-species HCPs and NCCPs have been adopted and permitted in the San Diego region.

The Water Authority's Board of Directors approved a multi-species NCCP/HCP on December 8, 2010. The Plan became effective on December 30, 2011, concurrent with issuance of Federal Incidental Take Permit No. TE03216A-0 and Natural Community Conservation Plan Permit 2810-2011-001-05 (both permits expire on December 30, 2066). The Water Authority's Plan has two primary principles: conservation of multiple species and their habitats by establishing a series of interconnected habitat preserves at a regional landscape scale, and providing a streamlined method for the Water Authority to comply with the state and federal Endangered Species Acts.

The Water Authority's Plan provides a framework under which the Water Authority may perform specific activities associated with their infrastructure and land holdings (referred to as "Covered Activities") that occur within an approximate 992,000-acre Plan Area. The Plan Area encompasses the Water Authority's Service Area and lands that extend northward into Riverside County within a 1-mile area on either side of the First San Diego Aqueduct (First Aqueduct) and Second San Diego Aqueduct (Second Aqueduct), as well as a 1-mile area on each side of the right-of-way (ROW), and exterior boundaries of other facilities within San Diego County that are outside the Service Area boundary. Covered Activities are organized into three primary categories: Capital Improvement Program (CIP) projects for construction and expansion of facilities, operation and maintenance (O&M) of existing facilities, and Preserve Area management activities.

Three types of impacts are defined by the Plan: (1) permanent impacts, (2) one-time temporary impacts, and (3) repeated temporary impacts. Permanent impacts result from Covered Activities that cause removal of habitat that cannot be mitigated on-site through revegetation and other restoration efforts. The Plan requires off-site mitigation to compensate for permanent impacts. Off-site mitigation ratios for permanent impacts are selected based on vegetation community tier and location of impacts and mitigation relative to Biologically Significant Resource Areas (BSRAs) (refer to Tables 6-6 and 6-7 of the Plan). Temporary impacts result from Covered Activities that do not disturb or remove vegetation root stock or that can be mitigated on-site through revegetation and other restoration efforts. One-time temporary impacts refer to impacts that will be allowed to return to a fully restored status. Repeated temporary impacts refer to impacts that will occur more frequently than the time period in which the impact area is scheduled to return to a fully restored status.

The Plan requires restoration and revegetation of one-time temporary impacts at a 1:1 ratio. While repeated temporary impacts will also be subject to restoration and revegetation, these impacts will be mitigated off-site similar to permanent impacts given that any restoration and revegetation efforts would be compromised by a future activity. Given the extent of the permit term (i.e., 55 years) and uncertainty associated with implementation of future activities, the Water Authority maintains discretion in determining whether temporary impacts should be considered one-time or repeated temporary impacts. Detailed guidelines for permanent and temporary impacts are provided in Section 6.5.1.4.2 of the Plan.

1.1.1 Elements of the Plan and Implementing Agreement

The Water Authority's Implementing Agreement for the San Diego County Water Authority Natural Community Conservation Plan/Habitat Conservation Plan (IA) with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) describes the elements of the Plan and requirements that must be met to maintain the Plan, federal permit, and take authority. The Water Authority's Plan includes coverage for 63 special-status species. Three additional species, Orcutt's grass (*Orcuttia californica*), Munz's onion (*Allium munzii*), and vernal pool fairy shrimp (*Branchinecta lynchi*), have the potential to be impacted when Water Authority activities are proposed in Riverside County and would require a Major Amendment to the NCCP/HCP permits to be included as covered by the Plan.

The Water Authority has entered into agreements with USFWS, CDFW, and the County of San Diego to manage more than 1,920 acres of natural habitat lands (Habitat Management Areas [HMAs], which compose the Preserve Area) in San Diego County to provide habitat-based mitigation for its past projects and provide mitigation credit for its future projects and operations. The Water Authority previously entered into similar agreements with other entities to manage 1,147 acres of other conserved mitigation lands (Managed Mitigation Areas [MMAs]) that compose part of the environmental baseline of conserved lands but are excluded from the Plan's Preserve Area. Pursuant to Section 2820, subdivision (b)(9) of the California Fish and Game Code, the Water Authority must "ensure that implementation of mitigation and conservation measures on a plan basis is roughly proportional in time and extent to the impact on habitat or Covered Species authorized under the Plan." As a result, for purposes of the NCCP/HCP, "rough step" proportionality will be determined pursuant to Section 6.5.1.2 of the NCCP/HCP. If CDFW provides written notification that rough step proportionality on a plan basis has not been met, then the Water Authority will (1) regain rough step proportionality within 45 days; or (2) enter into an agreement with CDFW within 45 days, which will set a course of action to expeditiously regain rough step proportionality.

Acquisitions of land will be formally credited toward the obligations set forth in the NCCP/HCP when USFWS and CDFW (collectively referred to in this report as the Wildlife Agencies) approve the acquisition and agree that it meets the goals of the Plan, will be permanently dedicated, and will be managed in perpetuity. The Plan's Preserve Area includes lands acquired before issuance of the permits that the Wildlife Agencies have agreed may be credited toward the obligations of the NCCP/HCP.

The Water Authority has sole responsibility for ensuring management of the HMAs in perpetuity. However, the Wildlife Agencies have committed to manage some of the HMAs covered in the NCCP/HCP (Crestridge, San Miguel, and Rancho Cañada) and they are responsible for preparing and implementing management plans for those areas.

The NCCP/HCP requires that, within 2 years of the dedication of land to the Preserve Area, the Water Authority will ensure that a Preserve Area Management Plan (PAMP) is prepared unless it is an area that the Wildlife Agencies have committed to manage.

1.1.2 Plan Area Monitoring and Reporting

The Wildlife Agencies will review the annual monitoring report to confirm compliance with the terms of the permits and effectiveness of management of the Preserve Areas. An annual meeting will be held, potentially in conjunction with an annual public meeting for other conservation plans within the Plan Area.

Compliance Monitoring will track impacts of Covered Activities, mitigation measures (including stay ahead and rough step commitments), and conditions of coverage to document that the habitat conservation strategies are being implemented in accordance with permit conditions. The annual monitoring report will include documenting the types, amounts, and locations of impacts; the offsetting mitigation; and the significant conditions of coverage undertaken during the reporting period.

Effectiveness Monitoring will evaluate the success of management activities to address specific habitat and Covered Species objectives in the Preserve Area during the reporting period. Adaptive management recommendations will be provided, as necessary, to improve the effectiveness of the Plan.

Validation Monitoring will be used to help preserve managers (and the Wildlife Agencies) verify if the Plan's assumed causal linkages between management actions and predicted results or expected future conditions outlined in the conservation analysis are supported.

Annual reporting will verify that:

- Habitat losses and take of Covered Species by Covered Activities allowed under the permits issued for the Plan are not exceeded;
- Avoidance and minimization measures are implemented in accordance with the Plan;
- Off-site and on-site mitigation measures are completed in accordance with the Plan;
- Consistent and complete documentation of all actions is provided pursuant to the Plan; and
- Consolidated record of any amendments to the Plan, permits, or IA is provided.

In addition, the annual reporting will include the incremental and aggregate habitat losses and incidental take of Covered Species (estimated or documented) that occurred under the Plan, including:

- Acres of impact to each habitat type by project;
- Whether the habitat was permanently lost, or temporarily degraded and/or restored;
- List and quantification of Covered Species potentially or known to be affected;
- The HMA credits/acres (used and remaining) in a ledger-type accounting format by habitat types, and any conservation/mitigation bank augmentations (Appendix A of this annual report);
- Confirmation that specified treatments resulted in expected habitat characteristics;
- Documentation of field personnel training conducted at the start of each project;
- Analysis/discussion of any Changed Circumstance addressed;
- Analysis/discussion of any Unforeseen Circumstance identified and/or addressed;
- Description and location of Covered Activities (aggregated for each reporting year for O&M Covered Activities);

- Date or period during which Covered Activities occurred and expected completion dates (if not within the reporting year);
- A description of approved, funded CIP projects and their anticipated impacts for the subsequent 2 years;
- A detailed account of funding used during the reporting year and funding committed for the following year; and
- Any project review actions made to determine Plan consistency.

1.2 Previous Revisions and Amendments to the Plan

Changes to the Plan are expected to occur during the 55-year permit term. Expected modifications to the Plan range from clerical (non-substantive) changes with no effect on the Plan commitments (conditions of coverage) to amendments that constitute minor or major changes to the Plan's commitments/conditions of coverage. Clerical changes may address corrections to the text and maps, updates to species' and vegetation communities' information, or revisions to adaptive management procedures. More substantive changes that could initiate amendments include, but are not limited to, adding Water Authority activities not currently covered by the Plan, increasing the level of authorized take of Covered Species, extending Plan coverage to newly listed species or designated critical habitat, expanding the geographic region of Plan coverage, moving species currently not proposed for coverage to the Covered Species list, and approving Covered Activities within the Major Amendment Area portion of Riverside County (see Section 8.0 of the Plan).

No formal revisions or amendments have been made to the Plan to date. However, several clarifications have been discussed with the Wildlife Agencies since finalization of the Plan. Clarifications to the Plan discussed during previous reporting periods are summarized in Appendix B of this annual report. Chapter 4 of this annual report provides a summary of updates for the current reporting period.

1.3 Annual Report Summary

Plan objectives 5.1 through 5.3 (see Section 6.1.2.5 of the Plan) identify the requirement to provide the Wildlife Agencies an annual report summarizing impacts, mitigation, conservation, and management/monitoring occurring under the Plan, and to ensure that each annual report includes information identified in Section 6.12.1 of the Plan. This annual report covers the period of January 1 through December 31, 2021.

Table 1-1 summarizes cumulative impacts associated with CIP and O&M Covered Activities implemented to date, including those occurring during the reporting period. Cumulative impacts are updated as projects reach completion and actual, as-built impacts are tallied. Cumulative impacts reported herein may decrease from cumulative impacts reported in previous annual reports given that as-built impacts may be less than those estimated during the pre-construction phase in California Environmental Quality Act (CEQA) documents or pre-activity survey forms. Impacts resulting from Covered Activities will be mitigated in accordance with the Plan.

Table 1-1. Summary of Vegetation Community/Land Cover Impacts – CIP and O&M Covered Activities

Vegetation Community/ Land Cover	Cumulative Impacts All Reporting Periods (Acres)[a]			Maximum Allowable Loss (Acres)[b]	Remaining Allowable Loss (Acres)[c]
	Permanent	Temporary (Repeated)	Temporary (One-time)		
Mitigation Required					
Upland Habitats – Tiered					
Chaparral I	—	—	0.23	88.30	88.01
Chaparral III	0.14	0.15	9.32		
Chaparral Subtotal	*0.14*	*0.15*	*9.55*		
Coniferous Forest I	—	—	—	0.00	0.00
Coniferous Forest II	—	—	—		
Coniferous Forest Subtotal	—	—	—		
Grasslands I	—	—	—	56.30	51.54
Grasslands III	0.16	4.60	5.12		
Grasslands Subtotal	*0.16*	*4.60*	*5.12*		
Coastal Sage-Scrub I	—	—	—	150.50	142.40
Coastal Sage-Scrub II	2.45	5.65	22.52		
Coastal Sage-Scrub Subtotal	*2.45*	*5.65*	*22.52*		
Upland Habitats – Non-Tiered					
Chaparral, Montane/Trans-montane	—	—	—	0.00	0.00
Coastal	—	—	—	0.00	0.00
Oak Woodland and Forest	—	—	—	25.30	25.30
Sage Scrub, Montane/ Trans-montane	—	—	—	0.00	0.00
Wetland Habitats – Tiered					
Aquatic, Freshwater I	—	—	—	1.50	1.50
Aquatic, Freshwater II	—	—	—		
Aquatic, Freshwater III	—	—	—		
Aquatic, Freshwater Subtotal	—	—	—		
Aquatic, Marine I	—	—	—	0.00	0.00
Aquatic, Marine II	—	—	—		
Aquatic, Marine Subtotal	—	—	—		
Riparian I	0.562	—	0.132	45.00	44.22
Riparian II	0.215	—	0.128		
Riparian Subtotal	*0.777*	—	*0.480*		
Wetland I	—	—	—	6.50	6.50
Wetland II	—	—	—		
Wetland Subtotal	—	—	—		

Table 1-1. Summary of Vegetation Community/Land Cover Impacts – CIP and O&M Covered Activities

Vegetation Community/ Land Cover	Cumulative Impacts All Reporting Periods (Acres)[a]			Maximum Allowable Loss (Acres)[b]	Remaining Allowable Loss (Acres)[c]
	Permanent	Temporary (Repeated)	Temporary (One-time)		
Wetland Habitats – Non-Tiered					
Riparian (Disturbed)	—	—	—	0.00	0.00
Totals (Mitigation or Restoration Required)	**3.53**	**10.40**	**37.67**		
Mitigation Not Required					
Agricultural	0.02	—	15.36	618.00	617.98[d]
Disturbed/Developed	0.96	10.25	38.32	N/A	N/A
Exotic Landscapes	0.19	-	1.68	N/A	N/A
Totals (Mitigation Not Required)	**1.17**	**10.25**	**55.36**		

Notes:

[a] Cumulative impact totals may vary from previous annual reports given that as-built impacts may vary from pre-construction estimates in CEQA documents or pre-activity survey forms.

[b] Maximum allowable loss acreages taken directly from the Water Authority's 10(a)(1)(B) incidental take permit for the Plan (USFWS 2011).

[c] Permanent and temporary (repeated) impacts are deducted from the maximum allowable loss acreages to determine remaining allowable loss for each vegetation community. One-time temporary impacts are not deducted because these impacts will be restored and revegetated with performance criteria and will not be impacted again by Covered Activities in the future. Thus, one-time temporary impacts will not result in loss of vegetation community acreage.

[d] Only permanent impacts to agricultural habitat (i.e., permanent conversion of agricultural land) are deducted from the maximum allowable loss acreage. Temporary impacts (including repeated and one-time) would not preclude reestablishment of agricultural habitat suitable to provide habitat for Covered Species.

[e] N/A=not applicable. Impact limits are not provided for these land cover types.

No CIP Covered Activities were completed and closed out during the 2021 reporting period. One CIP Covered Activity was initiated during the 2021 reporting period and was ongoing at the end of the 2021 reporting period: the Hauck Mesa Storage Reservoir Project. One CIP Covered Activity initiated during the 2020 reporting period remained ongoing at end of the 2021 reporting period: the Mission Trails Flow Regulatory Structure II and Flow Control Facility Project.

Six O&M Covered Activities that occurred during the reporting period are addressed in this report. All six activities were initiated and completed during the reporting period. None of the activities resulted in temporary or permanent impacts to habitat or Covered Species.

This annual report also provides updates for establishment and management of HMAs identified in the NCCP/HCP. During the 2021 reporting period, the Water Authority continued with the design phase of the San Luis Rey HMA Restoration Project, initiating development of construction plans and specifications. Design progress has enabled an update of planned mitigation acreages for this project, which are reflected in this report. Additional detail regarding the status and management actions undertaken on HMAs is summarized in Chapter 3.

Other updates presented in this annual report include general plan implementation updates (Chapter 4) and compliance updates related to existing USFWS-issued Biological Opinions (B.O.s) (Chapter 5).

2 Covered Activities and Compliance Monitoring

As noted in Chapter 1 of this annual report, the monitoring program associated with the Plan (Section 6.12.1) includes three components: Compliance Monitoring, Effectiveness Monitoring, and Validation Monitoring. This chapter addresses Compliance Monitoring, which includes tracking the type, location, and amount of impacts from Covered Activities, and the implementation of avoidance and minimization measures employed, including general and specific conditions of coverage as identified in the Plan. Compliance Monitoring provides a record of habitat conservation strategies being implemented in accordance with Permit conditions. The two other components of a monitoring program—Effectiveness Monitoring and Validation Monitoring—are addressed in Chapter 3 of this annual report.

2.1 CIP Covered Activities

The CIP, adopted in 1989 and substantially revised by the 2002 Regional Water Facilities Master Plan and updated in the 2013 Regional Water Facilities Optimization and Master Plan, is intended to "provide the necessary facilities for a safe, reliable, and operationally flexible water storage, treatment, and delivery system" (Water Authority 2004). The CIP includes activities associated with, but not limited to, buried pipelines with above-ground hydraulic structures and access roads; pump stations, flow control facilities (FCFs), and metering facilities; and water treatment and storage facilities of various sizes. Existing Projects (i.e., projects that have already been approved/permitted by the Wildlife Agencies), Planned Projects (i.e., known projects that have not been approved/permitted by the Wildlife Agencies), and Future Projects (i.e., projects and/or activities that were not designated as CIP budgeted projects at the time of Plan approval but are consistent with Covered Activities described in Section 5.0 of the Plan) are covered by the Plan.

During the 2021 reporting period, construction of one new CIP Covered Activity was initiated and construction of one CIP Covered Activity remained ongoing (Table 2-1; Figure 2-1). Table 2-2 shows projected impacts to vegetation communities resulting from the CIP Covered Activity initiated during the 2021 reporting period, based on the project's CEQA documentation and pre-activity survey reports prepared to date; project-specific impacts are detailed below in respective sections dedicated to the individual projects. Table 2-2 also summarizes off-site and on-site mitigation obligations planned for this initiated Covered Activity, which will be confirmed with as-built data after completion of the project. Impacts to Covered Species suitable habitat are presented in Appendix C for wildlife species and Appendix D for plant species.

The Plan requires the Water Authority to demonstrate compliance with measures to avoid, minimize, and mitigate impacts to Covered Species and their habitats resulting from Covered Activities. The Plan includes appropriate, environmentally sound approaches to reduce effects to Covered Species and their habitats, including specific policies for protecting vernal pools, narrow endemic species, and breeding birds. Appendix E identifies the avoidance and minimization measures specific to Plan conformance that were identified for the CIP Covered Activity initiated during the 2021 reporting period.

The following subsections provide summaries of the CIP Covered Activities completed, ongoing, and initiated during the 2021 reporting period, including impacts associated with each project. For the Covered Activities that have (or are expected to have) permanent or repeated temporary impacts, project-specific tables are presented that identify the location of impacts and mitigation relative to BSRAs, which dictate the mitigation ratio required under the Plan. As-built impacts are summarized for completed projects while impacts for ongoing projects are projections based on project design plans.

Table 2-1. CIP Covered Activities – Active Construction Phase January 1 through December 31, 2021

Project Name	Project Tracking Number	Project Start Date (Month/Year)	Project End Date (Month/Year)
Mission Trails Flow Regulatory Structure II and Flow Control Facility Project	C0603	January 2020	Ongoing
Hauck Mesa Storage Reservoir Project	N0504	March 2021	Ongoing

Table 2-2. Summary of Projected Impacts and Mitigation Requirements for CIP Covered Activities Initiated during the Reporting Period[a]

Vegetation Community/ Land Cover	Projected Impacts for Covered Activities Initiated during Reporting Period			Projected Off-Site Mitigation Requirements		Project On-Site Mitigation Requirements
	Permanent	Temporary (Repeated)	Temporary (One-time)	Off-Site Mitigation Ratio[b]	Required Off-Site Mitigation (Acres)[c]	
Upland Habitats						
Tier I Upland Habitats						
(none)	—	—	—	—	—	—
Tier II Upland Habitats						
Diegan Coastal Sage Scrub	0.10	—	0.49	2:1	0.20	0.49
Tier III Upland Habitats						
Southern Mixed Chaparral	0.11	—	0.19	1:1	0.11	0.19
Tier IV Upland Habitats						
Extensive Agriculture (Row Crops, Pastures)	0.02	—	0.11	N/A	N/A	N/A
Disturbed Habitat	—	—	0.42	N/A	N/A	N/A
Bar Ground	—	—	0.04	N/A	N/A	N/A
Urban/Developed	0.64	—	0.15	N/A	N/A	N/A
Wetland Habitats						
Tier I Wetland Habitats						
(none)	—	—	—	—	—	—

Table 2-2. Summary of Projected Impacts and Mitigation Requirements for CIP Covered Activities Initiated during the Reporting Period[a]

Vegetation Community/ Land Cover	Projected Impacts for Covered Activities Initiated during Reporting Period			Projected Off-Site Mitigation Requirements		Project On-Site Mitigation Requirements
	Permanent	Temporary (Repeated)	Temporary (One-time)	Off-Site Mitigation Ratio[b]	Required Off-Site Mitigation (Acres)[c]	
Tier II Wetland Habitats						
(none)	—	—	—	—	—	—
Tier III Wetland Habitats-						
(none)	—	—	—	—	—	—
Grand Totals[d]	**0.88**	—	**1.39**	—	**0.31**	**0.68**

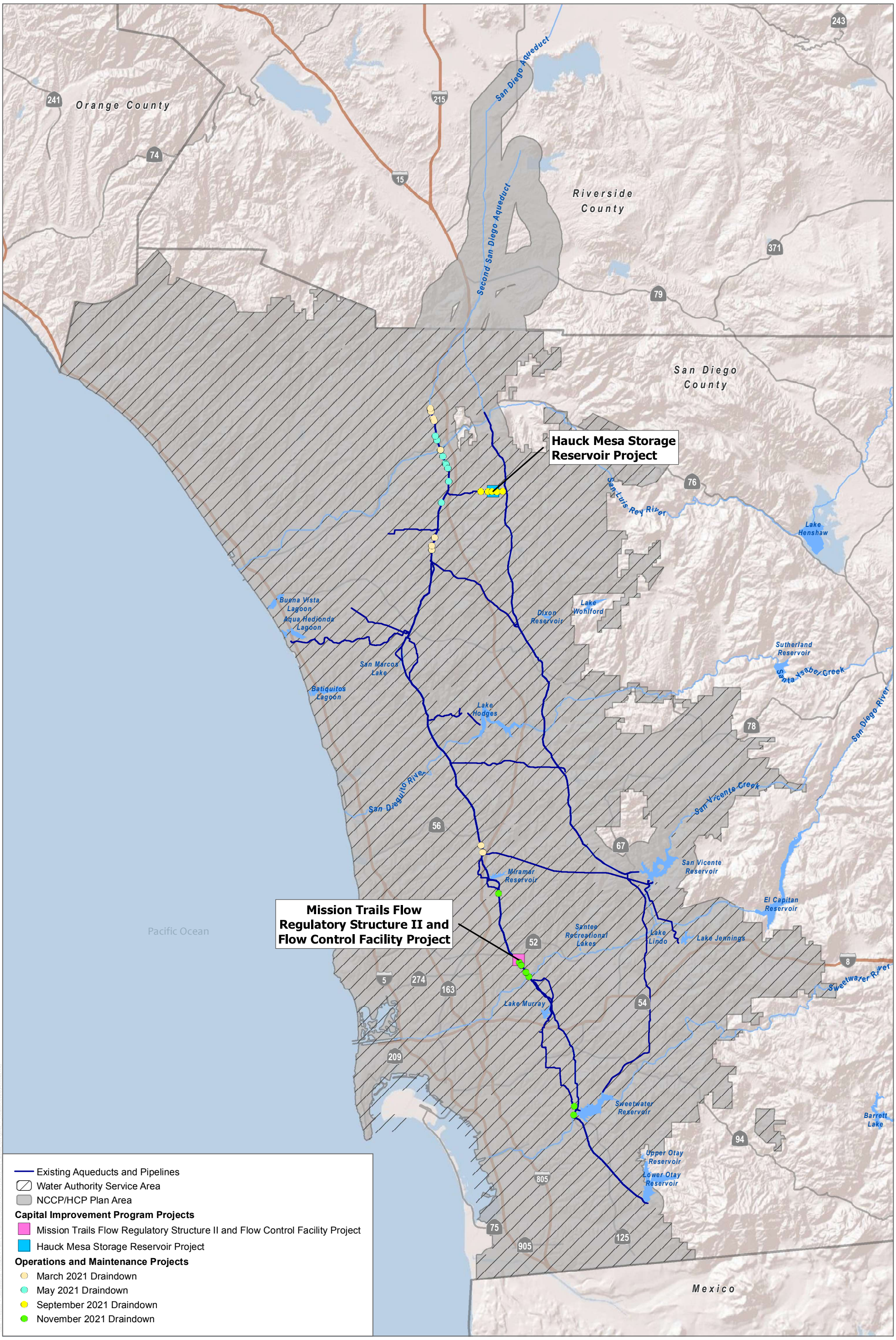
Notes:
N/A = not applicable; Source: AECOM 2018a; Dudek 2021a

[a] Projected impacts and mitigation requirements for CIP Covered Activities initiated but not completed during the reporting period only. Impacts and mitigation requirements do not include as-built information for Covered Activities completed in the reporting period. See Section 2.1.1 for summary of Covered Activities completed in reporting period. For impacts resulting from O&M Covered Activities, see Section 2.2.

[b] In accordance with Tables 6-6 and 6-7 of the Plan, mitigation ratios depend on the location of impacts and mitigation relative to BSRA. Project-specific tables in the following subsections identify location of impacts and mitigation relative to BSRA, which are the basis for the mitigation ratios presented in this table. Mitigation for these projects is planned to occur at mitigation sites within the BSRA.

[c] Off-site mitigation is required for permanent and temporary (repeated) impacts; one-time temporary impacts do not require off-site mitigation (unless restoration efforts do not meet performance criteria).

[d] Totals may not add due to rounding.



SOURCE: Esri World Shaded Relief 2021; SanGIS 2021; SDCWA 2021

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0 15,000 30,000 Feet

FIGURE 2-1

Location of Covered Activities

San Diego County Water Authority 2021 NCCP/HCP Annual Report

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2.1.1 Completed CIP Covered Activities

No CIP Covered Activities were completed during the 2021 reporting period.

2.1.2 CIP Covered Activities Ongoing During Reporting Period

Mission Trails Flow Regulatory Structure II and Flow Control Facility Project (C0603) (Existing Project)

The Mission Trails Flow Regulatory Structure II and Flow Control Facility Project commenced in January 2020 and remained ongoing at the end of the reporting period, with anticipated completion in summer of 2022. The project entails work at several locations along and adjacent to the Second Aqueduct alignment in Mission Trails Regional Park in the City of San Diego. This is listed as an "existing project" in the NCCP/HCP because it was authorized pursuant to B.O. 2007-B-14/2007-F-22, predating the NCCP/HCP. An EIR was prepared for the project in 2006, pre-dating the NCCP/HCP, to construct an 18 mg below-ground flow regulatory structure (FRS), above-ground appurtenant structures, inlet and outlet tunnel pipeline, and tunnel pipeline connections to the aqueduct pipes. Construction of the pipeline tunnels and associated infrastructure was complete in 2010, but construction of the FRS component was deferred pending additional planning to determine the facility's appropriate capacity. Subsequent planning work indicated that a 5 mg FRS was appropriate and identified the need to construct an FCF downstream of the proposed FRS. The Water Authority prepared an addendum to the EIR in July 2019 to address these minor changes in the project (AECOM 2019a).

During construction in the 2021 reporting period, it was determined that the corridor of vegetation clearing necessary to install the electrical conduit would need to be wider than was analyzed in the 2019 addendum, 40 feet instead of 5 feet, as a result of constructability concerns with the original narrower corridor, and relocated to the eastern side of the Second Aqueduct ROW alignment instead of the western side, as previously assumed. The widened and relocated alignment were within the project's impact area assumed in previous environmental documentation and was determined to not result in new impacts or increase the severity of previously identified impacts. It was also determined that the construction work area for the FRS II tank installation could be reduced. The Water Authority prepared an addendum to the EIR in February 2021 to address these minor changes in the project (Dudek 2021b). These changes resulted in a net change of +1.41 acres of temporary impacts; there were no changes to the previously assumed permanent impacts as determined in the 2019 EIR addendum (Dudek 2021a).

The original project was covered by the 2007 B.O., but in the time that lapsed between completion of the first construction phase and planning for the second phase, the Water Authority identified the potential presence of two species listed pursuant to the federal ESA that were not provided coverage by USFWS in the 2007 B.O. These species, the Quino checkerspot butterfly (*Euphydryas editha quino*) and coastal California gnatcatcher, are Covered Species under the NCCP/HCP but were not covered by the 2007 B.O. because, at the time, on-site habitat was recovering from the 2003 Cedar Fire and was determined by USFWS to be unsuitable for these species such that the project construction would not have an impact on the species. To simplify the project's agency coordination needs, the Water Authority elected to cover the project and its impacts on sensitive species under the NCCP/HCP.

The primary component of the remaining project phase is the approved FRS II, which consists of a 5 mg buried concrete reservoir, inlet and outlet piping, emergency overflow pipe and outfall, electrical conduit, and appurtenant facilities for system operation. FRS II is being constructed on a 12.78-acre parcel that the Water Authority acquired from the San Diego Unified School District for this project, located northeast of the Water

Authority's existing FRS I, and adjacent to the east side of the 130-foot-wide ROW for the Water Authority's Second Aqueduct. The reservoir consists of a cast-in-place concrete tank, connected to the previously completed pipeline tunnel. A layer of 3 to 5 feet of soil will be placed on top of the buried reservoir structure, with a gently undulating final grade to better blend in with surrounding land of the park and reduce the facility's visual impact to trail users. This layer will be vegetated with a native plant mix. A gravel maintenance apron will be constructed around the perimeter of the reservoir's roof, connecting to two roof hatches provided for equipment access to the interior of the structure. Portions of the FRS II site were disturbed during construction of the pipeline tunnel, but much of the impact area will represent new disturbance.

The entire Clairemont Mesa Boulevard park entrance area has been used for staging and will be for the duration of construction. Construction trailers and other support facilities that do not have to be on the portal or FRS II sites are within this staging area, as well as parking for crew/engineering vehicles to minimize individual vehicles on park roads. An additional staging area was graded on the FRS II site for stockpiling of excavated soil, and other equipment and materials. Park roads used for access were widened during the construction of the pipeline and no new road enhancements were required for the current phase of the project. Crushed rock has been placed on park access roads to minimize erosion damage and stabilize the surface for heavy trucks.

As required by the NCCP/HCP, protocol surveys for Quino checkerspot butterfly were conducted during the 2019 flight season, prior to the commencement of project construction. Surveys were negative, therefore, no impacts to this Covered Species are identified pursuant to the NCCP/HCP. The Water Authority assumed occupancy of coastal California gnatcatcher in suitable habitat within the project area pursuant to the NCCP/HCP, rather than performing protocol surveys, based on recent incidental observations and general knowledge of coastal California gnatcatcher presence within Mission Trails Regional Park. To avoid potential impacts to coastal California gnatcatcher, all vegetation was removed in January 2020, prior to the start of the nesting season, and work has continued uninterrupted to date as required by the mitigation measures for the project.

The 2019 EIR addendum identified high potential for presence of the NCCP/HCP covered species Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*) (hereafter referred to as target species) at the main FRS II site and the tunnel portal connection sites. In accordance with conditions of coverage for these target species in the NCCP/HCP, exclusion fence was installed and thereafter project biologists implemented trapping and relocation programs prior to vegetation clearing at these work areas in January 2020 at the FRS II site and the south tunnel portal connection/FCF site. Additional exclusion fence installation and trapping and relocation at the north tunnel portal connection site occurred prior to vegetation clearing in August 2020.

The project site was also identified to have high potential for western spadefoot toad (*Spea hammondii*) at the main FRS II site. As such, exclusion fence was installed and thereafter a western spadefoot toad trapping and relocation program was conducted at the FRS II site in January 2020 to minimize the potential for construction conflicts pursuant to the Water Authority's NCCP/HCP. One western spadefoot toad was detected on January 16, 2020 and two Coronado skink (*Eumeces skiltonianus interparietalis*) were detected on January 28, 2020, both of which were released off-site. No western spadefoot toads were detected on the site at any other time.

The project entails impacts on U.S. Army Corps of Engineers (USACE) and CDFW jurisdictional waters. As such, the Water Authority obtained permits from the aforementioned agencies to document expected impacts and set forth mitigation requirements. Specifically, the USACE issued a Letter of Permission on October 29, 2019 (SPL-2019-00526-PJB) and CDFW deemed the project's Notification of Lake and Streambed Alteration was complete by operation of law (No. 1600-2019-0130-R5).

Pre-activity surveys were completed in December 2019 and August 2020 prior to the start of vegetation clearing and ground disturbance at different work locations to confirm site conditions and appropriate avoidance, minimization, and mitigation measures (AECOM 2020). Pre-activity surveys completed during the reporting period occurred during February 2021 and April 2021 prior to the start of vegetation clearing and ground disturbance at the conduit work area and the energy dissipater work area, respectively. The pre-activity surveys concluded habitat conditions remained the same as documented in the addendum.

The pre-activity surveys confirmed conditions in the project area remain similar to those reported in the addendum, and the project is not expected to result in impacts to Covered Species beyond those reported in the addendum. In addition to those discussed above, Covered Species impacts identified in the 2019 EIR addendum include impacts to habitat assumed occupied by Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), coastal (western) whiptail (*Aspidoscelis tigris stejnegeri*), Coronado skink, coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillii*), coastal rosy boa (*Lichanura trivirgata roseofusca*), (northern) red diamond (*Crotalus ruber ruber*), San Diego ringneck snake (*Diadophis punctatus similis*), California horned lark (*Eremophila alpestris californica*), grasshopper sparrow (*Ammodramus savannarum*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), San Diego black-tailed jack rabbit (*Lepus californicus bennettii*), Dulzura pocket mouse, northwestern San Diego pocket mouse, and San Diego desert woodrat. These impacts remained unchanged due to the project changes identified in the 2021 EIR addendum.

On May 19, 2021, a common raven (*Corvus corax*) nest was discovered on the project site, specifically within the FRS II that was currently being constructed. The nest was located within scaffolding associated with the construction of the 5 mg water tank. After the initial observation, a 100-foot avoidance buffer was established and biological monitoring of the nest occurred during routine spot check visits and full-time when construction activities occurred adjacent to the nest. It was determined the nest would need to be removed due to upcoming concrete pouring of the tank roof. As required by federal law, Water Authority applied for a Special Purpose Permit from the USFWS to remove the nest. USFWS granted authorization on June 5, 2021 (No. MBPER0014196), however, during USFWS review of the Special Purpose Permit application for removal of the nest, the raven nest was predated, likely by a racoon (*Procyon lotor*). Thereafter the nest was determined to be inactive and was removed from the scaffolding and dispersed outside the project site.

On September 16, 2021, an individual adult barn owl (*Tyto alba*) was observed by construction crews flying into the FRS II tank and perching at the very top of the southwest corner of the tank structure. The construction crew contacted Water Authority construction management personnel who mobilized a Dudek biologist to the site. The Dudek biologist observed no evidence that the owl was injured or had been in the structure for a long period of time (i.e., no feathers, whitewash, pellets). Since the tank is an open structure, it was determined that the owl should be able to freely leave on its own accord. The next day the owl was not observed in the tank and has not been observed to date since.

Impacts to plant Covered Species were not identified in the 2019 EIR addendum or the 2021 EIR addendum. The 2006 biological report and EIR identified impacts on two sensitive plant species, variegated dudleya (*Dudleya variegata*) and San Diego thorn-mint (*Acanthomintha ilicifolia),* both of which are NCCP/HCP narrow endemic species. As required by the NCCP/HCP and because surveys associated with the addendum in 2018 were conducted outside of the flowering season, AECOM conducted surveys during the 2019 spring blooming season. These spring rare plant surveys did not identify any plant Covered Species within the project footprint. Plant Covered Species were also surveyed for during the pre-activity survey in December 2020; no impacts are anticipated based on the updated survey.

Based on species observations and an assessment of on-site habitat, the project's impacts represented an impact on 15 covered wildlife species, as listed in Appendix C. Appendix E of this annual report identifies the avoidance and minimization measures specific to the Plan that were identified for the project.

Anticipated impacts based on the addendums are tallied below in Table 2-3. As-built impacts will be calculated at completion of construction.

Table 2-3. Mission Trails Flow Regulatory Structure II and Flow Control Facility Project Impact Summary[a]

Vegetation Community/Land Cover	Temporary Impacts One-Time (Acres)	Permanent Impacts (Acres)
Diegan Coastal Sage Scrub II	4.95	1.23
Coastal Sage-Chaparral Scrub II	3.71	0.28
Mulefat Scrub II	0.01	—
Chamise Chaparral (Granitic) III	0.09	0.01
Southern Mixed Chaparral III	9.01	0.02
Non-native Grassland III	1.45	0.11
Urban/Developed IV	3.85	0.06
Totals[b]	**23.13**	**1.70**

Notes:

[a] Impact acreages presented herein are based on *the Mission Trails FRS II EIR Addendum 2* (AECOM 2019b) and *Mission Trails FRS II EIR Addendum 3* (Dudek 2021b)

[b] Totals may not add due to rounding.

Most impacts for this project are considered temporary, one-time impacts pursuant to the NCCP/HCP, with the exception of the FRS II[1], access road improvements and a concrete pad near the FRS II associated with the FRS II outlet shaft, and the FCF access areas. Temporary impacts include Diegan coastal sage scrub (Tier II), coastal sage chaparral scrub (Tier II), mulefat scrub (Tier II), chamise chaparral (granitic) (Tier III), southern mixed chapparal (Tier III), non-native grassland (Tier III), and urban/developed land (Tier IV). Permanent impacts include Diegan coastal sage scrub (Tier II), coastal sage chaparral scrub (Tier II), chamise chaparral (granitic) (Tier III), southern mixed chaparral (Tier III), and non-native grassland (Tier III). The project would result in impacts to City of San Diego Multi-Habitat Planning Area lands outside the Water Authority ROW, so there are BSRA impacts. As-built impacts will be calculated at completion of construction.

The Water Authority obtained permits for minor temporary and permanent impacts to USACE and CDFW jurisdictional resources in three drainages that intersect with various work areas. The project's anticipated impacts on jurisdictional resources are shown in Table 2-4. Impacts at the northernmost drainage, referred to as Drainage 1 in the permit applications, commenced the 2020 when vegetation clearing and earthwork began at the north tunnel connection work area. During the 2021 reporting period work commenced at the two other drainages, Drainage 2 and Drainage 4, as crews cleared vegetation and excavated a trench for installation of the electrical conduit. Additional clearing occurred at Drainage 2 to prepare the site for construction of the FRS II overflow pipe outfall structure, which is planned to occur during the 2022 reporting period. As-built impacts will be calculated at completion of construction.

[1] The finished ground surface above the FRS II structure is considered a permanent impact. However, upon the completion of construction, the finished ground surface will include topographic contouring to resemble natural conditions to the greatest extent feasible and will be revegetated with native species to blend in with surrounding areas of the park.

Table 2-4. Mission Trails Flow Regulatory Structure II and Flow Control Facility Project Jurisdictional Waters Impact Summary[a]

Vegetation Community/Land Cover	Temporary Impacts (Acres)	Permanent Impacts (Acres)
Diegan Coastal Sage Scrub II/Mulefat Scrub II	0.167	<0.01[b]
Totals	**0.167**	**<0.01**

Notes:

[a] All impacts are non-wetland waters, and have been characterized by their underlying vegetation community based on NCCP/HCP mitigation obligation. Impact acreages presented herein are based on the *FRS II Jurisdictional Delineation Report* (AECOM 2019b). Since Diegan coastal sage scrub and mulefat scrub have differing mitigation ratios pursuant to the NCCP/HCP, impacts will be categorized based on as-built conditions at the completion of construction.

[b] Permanent impact on Diegan coastal sage scrub/mulefat scrub is 0.0006, as calculated by GIS.

In July 2021, the Water Authority prepared and submitted to the Wildlife Agencies the Flow Regulatory Structure II and Ancillary Facilities Habitat Revegetation Plan (FRS II Revegetation Plan). The Water Authority issued an addendum to this plan in October 2021, and the plan was approved by the Wildlife Agencies in November 2021. At the end of the 2021 reporting period, the Water Authority was preparing to initiate restoration of the project area cleared for installation of the electrical conduit, which includes irrigation, container planting, and hydroseeding pursuant to the FRS II Revegetation Plan and addendum, and is planned for the beginning of the 2022 reporting period. Remaining areas still in use by the FRS II construction contractor will be restored following project completion and contractor demobilization.

2.1.3 CIP Covered Activities Initiated During Reporting Period

Hauck Mesa Storage Reservoir Project (N0504)

The Hauck Mesa Storage Reservoir Project commenced in April 2021 and remained ongoing at the end of the reporting period, with anticipated completion in fall 2022. The project entails constructing a new FRS reservoir to replace an existing above-ground water tank located in the unincorporated community of Valley Center in northern San Diego County. The purpose of the project is to provide surge protection along with service reliability and efficiency in the Valley Center area against outage events that could impede daily operation of the Valley Center Pump Station, which is approximately 0.75 mile west of the site.

The proposed cylindrical FRS reservoir will be 80 feet in interior diameter, 83 feet in exterior diameter, and approximately 66 feet in height above the ground surface, with a volume of 2.1 million gallons. This will replace the existing cylindrical tank, which is 40 feet in exterior diameter and 73 feet tall. The proposed FRS reservoir will connect to the Water Authority's existing Valley Center Pipeline (VCP) using a 42-inch-diameter inlet steel pipe and 42-inch-diameter outlet steel pipe. An underground flow-control facility (FCF) will be constructed southeast of the FRS, providing the mechanism by which the reservoir levels and VCP flows are controlled, and a new valve vault will be constructed south of the reservoir, housing the valves that control the inlet and outlet flow to the reservoir from VCP. North of the tank site, the project entails improving an existing access road that connects Lavender Point Lane to the existing water tank. The existing dirt access road will be regraded and paved, and a guardrail will be installed on the downslope side of the road due to the steep nature of the terrain. The improved access road will be 16 feet wide, with a minimum 1-foot area on each side of the road for drainage improvements, for a total width of 18 feet. The project also entails trench-based installation of a new underground 30-inch-diameter overflow pipe west of the proposed FRS reservoir. The pipe will discharge to a new approximately 1,600 square-foot rip rap energy dissipater

located in a disturbed area approximately 250 feet west of the FRS reservoir, which currently features a small amount of rip rap upstream of two existing 24-inch-diameter corrugated metal pipe culverts positioned beneath the Water Authority access road.

Most construction work and staging areas are within Water Authority right-of-way (ROW). The exception to this is the limited grading northwest of the tank site, which is outside Water Authority ROW. One small off-site staging area would occur on disturbed land adjacent to Lavender Point Lane where it intersects with the project-related access road, approximately 650 feet west of the existing tank site. Additional staging is planned to occur in the northwest corner of the tank site.

A Mitigated Negative Declaration (MND) was prepared for the project in 2015, to construct a 1.1 mg above-ground FRS (Dudek 2015). Subsequent planning work indicated that a larger FRS (2.1 mg) and other minor project design changes were appropriate to maximize water storage capabilities, and identified the need to construct an emergency overflow pipe and access road improvements. The purpose of the proposed changes were to maximize water storage capabilities, enhance safety of access to the tank site for operations and maintenance crews, and meet current code requirements. The Water Authority prepared an addendum to the MND in October 2018 to address these minor changes in the project (AECOM 2018a).

The 2018 MND addendum identified high potential for presence of the NCCP/HCP covered species Dulzura pocket mouse, northwestern San Diego pocket mouse, and San Diego desert woodrat (hereafter referred to as target species) within the overflow pipe work area. In accordance with conditions of coverage for these target species in the NCCP/HCP, Dudek biologists implemented two trapping and relocation programs prior to vegetation clearing. During previous trapping efforts on other Water Authority projects, repeat captures of certain target species individuals indicated the exclusion fencing was not entirely effective at keeping small mammal individuals from re-entering the work area. As a result, it was determined the best approach to minimize impacts to the species, while avoiding unnecessary time expenditure and stress on the small mammal individuals, was to conduct a 1-night trapping effort the night before vegetation clearing and grubbing activity. Once the vegetation is cleared, follow-up trapping efforts have not found the target small mammal species within work areas.

The Water Authority contacted the NCCP/HCP implementing agencies (USFWS and CDFW) via email on July 16, 2021 in advance of the trapping program; David Mayer from CDFW and Eric Porter from USFWS confirmed receipt of the notification on July 16, 2021 and July 19, 2021, respectively. The first trapping and relocation program was conducted in late July 2021 prior to clearing and grubbing of the overflow pipe area. The second trapping and relocation program was conducted in late September 2021 due to a need for additional temporary laydown and staging space adjacent to the overflow pipe work area. After installation of wildlife exclusion fence at the subject work areas and before commencement of clearing and grubbing activities, AECOM conducted trapping for 1 night (the night before clearing and grubbing occurred). Traps were set each day in the early evening and then checked the following morning (generally between 7 and 8 a.m.). During the first trapping effort, three Dulzura pocket mice were captured. During the second trapping effort, two Dulzura pocket mice were captured. All small mammals captured were identified to species, held in traps while clearing was being conducted, and released in a safe, vegetated location immediately outside the exclusion fence.

Due to project design refinements after the preparation of the 2018 MND addendum, it was identified that additional staging space would be needed for construction of the project. As such, it was identified that a field office complex for the Water Authority Construction Management team would located within Water Authority right-of-way at the intersection of Jay Way and Rodriguez Road, adjacent to the existing Valley Center Pump Station. It was also identified that additional staging space would be needed near the tank site for the contractor's field office complex.

The Water Authority field office complex is a new addition to the project; however, the site is entirely disturbed and devoid of natural vegetation. The contractor field office complex is a new addition to the project; however, the site was surveyed in 2017 as it was part of the 300-foot buffer study area assumed in the 2018 MND addendum and was entirely disturbed and devoid of natural vegetation. The disturbed sites are minor additions to the project in terms of NCCP/HCP compliance and the Water Authority determined it did not warrant revising the 2018 MND addendum. Additional project design refinements after preparation of the 2018 MND addendum entail a minor addition of permanent impact acreage compared to the impacts anticipated in the 2018 MND addendum due slight adjustments to the improved access road and a minor extension of the tank site in the southeastern limits of the site. Impacts based on the updated project footprint are tallied below in Table 2-4. The resulting impacts do not affect sensitive habitat types beyond those identified in the 2018 MND addendum.

Pre-activity surveys were completed in January 2021 (at the Water Authority field office complex), March 2021 (at the contractor field office complex) and April 2021 (remainder of the project site [tank site, access road, overflow pipe corridor, etc.), prior to the start of ground disturbance at the respective locations to confirm site conditions and appropriate avoidance, minimization, and mitigation measures (Dudek 2021a). The pre-activity surveys concluded habitat conditions remained the same as documented in the 2018 MND addendum. No Covered Species were observed during the other pre-activity surveys.

The pre-activity survey confirmed conditions in the project area remain similar to those reported in the 2018 MND addendum, and the project is not expected to result in impacts to Covered Species beyond those reported in the 2018 MND addendum. Covered Species impacts identified in the 2018 MND addendum include impacts to habitat assumed occupied by Belding's orange-throated whiptail, coastal (western) whiptail, Dulzura pocket mouse, northwestern San Diego pocket mouse, and San Diego desert woodrat. Based on species observations and an assessment of on-site habitat, the project's impacts represented an impact on five covered wildlife species, as listed in Appendix C. Impacts to plant Covered Species were not identified in the 2018 MND addendum nor observed during the pre-activity surveys. Appendix E of this annual report identifies the avoidance and minimization measures specific to the Plan that were identified for the project.

Anticipated impacts based on the addendum are tallied below in Table 2-5. As-built impacts will be calculated at completion of construction.

Table 2-5. Hauck Mesa Storage Reservoir Project Impact Summary[a]

Vegetation Communities and Land Cover Types	NCCP/HCP Tier	Temporary Impacts		Permanent Impacts	
		Inside BSRA	Outside BSRA	Inside BSRA	Outside BSRA
Diegan Coastal Sage Scrub	II	—	0.49	—	0.10
Southern Mixed Chaparral	III	0.15	0.04	—	0.11
Extensive Agriculture (Row Crops, Pastures)	IV	—	0.11	—	0.02
Disturbed Habitat	IV	—	0.42	—	—
Bare Ground	IV	—	0.04	—	—
Urban/Developed	IV	—	0.15	—	0.64
	Totals	**0.15**	**1.24**	**—**	**0.88**

Notes:

[a] Impact acreages presented herein are based on *Hauck Mesa Storage Reservoir Pre-Activity Survey Reports* (Dudek 2021a).

[b] Totals may not add due to rounding.

Temporary impacts include Diegan coastal sage scrub (Tier II), southern mixed chapparal (Tier III), extensive agriculture (row crops, pastures) (Tier IV), disturbed habitat (Tier IV), bare ground (Tier IV), and urban/developed land (Tier IV). Permanent impacts include Diegan coastal sage scrub (Tier II), southern mixed chaparral (Tier III), extensive agriculture (row crops, pastures) (Tier IV), and urban/developed land (Tier IV). A small amount of temporary impacts occur in County of San Diego Multiple Species Conservation Plan Pre-Approved Mitigation Area (PAMA) lands that are outside the ROW, so the project would have temporary BSRA impacts. There would be no permanent BSRA impacts.

2.2 Operation and Maintenance Covered Activities

O&M Covered Activities are described in Section 5.2 of the Plan. O&M Covered Activities are associated with various existing and/or planned facilities and include, but are not limited to, regrading of access roads; fire clearance around surface structures; pipeline inspections; valve and pipeline section replacements; pipeline, tank, and reservoir drainage into natural waterways to allow for interior inspection and work; and cathode/anode renewal. The majority of O&M Covered Activities are anticipated to occur in developed and disturbed areas around existing facilities.

Six O&M Covered Activities were implemented and completed during the 2021 reporting period (Table 2-6; Figure 2-1). No impacts on vegetation communities and land cover types resulting from O&M Covered Activities occurred during the 2021 reporting period, as shown below in Table 2-7. Appendix F identifies avoidance and minimization measures implemented for each O&M Covered Activity conducted during the 2021 reporting period.

Table 2-6. O&M Covered Activities Implemented January 1 through December 31, 2021

Project Name	Project Tracking Number	Project Start Date (Month/Year)	Project End Date (Month/Year)
Routine Maintenance Activities (CDFW Permit No. 1600-2019-0153-R5)	Various	Various	Various
March 2021 Draindown	R0307	March 2021	March 2021
May 2021 Draindown	R0307	May 2021	May 2021
September 2021 Draindown	N0504	September 2021	September 2021
November 2021 Draindown	101-15201	November 2021	November 2021
ROW Tree Trimming and Removal	Various	Various	Various

Table 2-7. Summary of Projected Impacts and Mitigation Requirements for O&M Covered Activities Initiated during Reporting Period[a]

Vegetation Community/ Land Cover	Projected Impacts for Covered Activities Initiated during Reporting Period (Acres)			Projected Off-site Mitigation Requirements		On-site Mitigation Requirements (Acres)
	Permanent	Temporary (Repeated)	Temporary (One-time)	Off-site Mitigation Ratio[b]	Required Off-site Mitigation (Acres)[c]	
Upland Habitats						
(none)	—	—	—	N/A	—	—
Wetland Habitats						
(none)	—	—	—	N/A	—	—
Grand Totals	**—**	**—**	**—**		**—**	**—**

Notes:
N/A = not applicable

[a] Projected impacts and mitigation requirements for O&M Covered Activities initiated during the reporting period only.

[b] In accordance with Tables 6-6 and 6-7 of the Plan, mitigation ratios depend on the location of impacts and mitigation relative to BSRAs. Project-specific tables in the following subsections identify location of impacts and mitigation relative to BSRAs, which are the basis for the mitigation ratios presented in this table. Mitigation for these projects is planned to occur at mitigation sites within the BSRA.

[c] Off-site mitigation is required for permanent and temporary (repeated) impacts; one-time temporary impacts do not require off-site mitigation (unless restoration efforts do not meet performance criteria).

The following subsections provide summaries of the O&M Covered Activities implemented during the 2021 reporting period.

2.2.1 Routine Maintenance Activities (CDFW Permit No. 1600-2019-0153-R5)

As discussed in greater detail in Section 4.5 below, the Water Authority operates under a programmatic lake and streambed alteration agreement from CDFW for routine maintenance activities that have the potential to impact the bed, bank, and channel of CDFW-regulated waters, including activities such as minor repairs to inline structures, clearing culverts, and regrading access roads.

During the 2021 reporting period, the Water Authority conducted routine maintenance activities to remove sediment, non-native vegetation (weeds), and debris from existing culverts and Arizona crossings in ROW zones A1N, A2N, A2DIV, A2DEL, A2MMV, A2SDR, A2SWR, OLV, RAM, and VCP, as classified in Attachment B2 of the agreement, for a total of 148 culverts and Arizona crossings. Appendix I of this report includes data and information related to the culverts and Arizona crossings where routine maintenance work occurred in 2021. Pursuant to the agreement, since these activities maintained the existing baseline condition, no notice to CDFW over and above the annual reporting required by the NCCP/HCP is required. The activities did not involve vegetation clearing or earth disturbance outside of the permitted baseline maintenance areas as described in the permit (i.e., within existing culverts) and resulted in no impacts to habitat or Covered Species. The Water Authority implemented their Implementation Manual for Project Operations & Maintenance, which incorporates NCCP/HCP compliance measures into the O&M Policies, Procedures, and Practices manual.

2.2.2 March 2021 Draindown (R0307)

This activity entailed draining water from Pipeline 5 to conduct maintenance-related pipeline and facilities inspections. The draining occurred at a total of 12 structures along the pipeline alignment located in Fallbrook, Twin Oaks Valley, and Rancho Penasquitos. The activities did not involve vegetation clearing or earth disturbance and resulted in no impacts to habitat or Covered Species.

2.2.3 May 2021 Draindown (R0307)

This activity entailed draining water from Pipeline 5 to conduct maintenance-related pipeline and facilities inspections. The draining occurred at a total of 10 structures along the pipeline alignment located in Fallbrook, Bonsall, and Twin Oaks Valley. The activities did not involve vegetation clearing or earth disturbance and resulted in no impacts to habitat or Covered Species.

2.2.4 September 2021 Draindown (N0504)

This activity entailed draining water from Pipeline 2A to conduct maintenance-related pipeline and facility improvements associated with the Hauck Mesa Storage Reservoir Project. The draining occurred at a total of five structures along the pipeline alignment located in Valley Center. The activities did not involve vegetation clearing or earth disturbance and resulted in no impacts to habitat or Covered Species.

2.2.5 November 2021 Draindown (101-15201)

This activity entailed draining water from Pipeline 4BII and 4EI to conduct maintenance-related pipeline and facilities inspections. The draining occurred at a total of seven structures along the pipeline alignments in Scripps Ranch, Mission Trails Regional Park, Spring Valley, and at the Sweetwater Dam. The activities did not involve vegetation clearing or earth disturbance and resulted in no impacts to habitat or Covered Species.

2.2.6 ROW Tree Trimming and Removal

Three tree-removal projects occurred in March and June 2021. For the three individual projects, a total of 27 trees were removed in residential areas of the Cities of Escondido and Poway. Trees removed included Mexican fan palm (*Washingtonia robusta*), queen palm (*Syagrus romanzoffiana*), olive (*Olea* sp.), liquid amber (*Liquidambar styraciflua*), pine (*Pinus* sp.), ash (*Fraxinus* sp.), pepper (*Schinus* sp.), carrotwood (*Cupaniopsis anacardioides*), and silk oak (*Grevillea robusta*) trees. Within five days prior to each removal project, and arborist performed surveys to evaluate habitat and determine if active nests were present. Two of the three surveys concluded that the project sites were within urban landscaped areas with no sensitive habitat present. In addition, no nests were detected, and no nesting activity was observed at these sites; therefore, work proceeded as scheduled. One project was originally scheduled to occur in April 2021, the pre-activity survey detected two active nests. This project was rescheduled for June 2021; the survey conducted prior to the activity found no nests or nesting activity and the work proceeded as scheduled.

2.3 Near-Term Planned Covered Activities and Other CIP Projects

In accordance with reporting requirements of the Plan (Section 6.12.1), this section describes approved and funded CIP Covered Activities scheduled for the next 2 years that may rely on the permits, and their anticipated impacts based on current available information. Eleven CIP Covered Activities are tentatively scheduled to commence during the 2022 and 2023 reporting periods, as shown in Table 2-8. During this 2-year look-ahead, the Water Authority could defer some projects, or add or accelerate project schedules as necessary to maintain service and meet member agencies' future water demands.

Several other CIP Covered Activities discussed in prior NCCP/HCP annual reports were previously planned to commence during the 2022 and 2023 reporting periods; however, due to changes to the Water Authority's CIP budget and schedule, these projects are now anticipated to commence in future reporting periods. These projects are not included in Table 2-8, but descriptions are provided in Section 2.3.5 below for tracking purposes. Note: The future projects described in Section 2.3.5 are tentative and are not an exhaustive list of projects scheduled to commence during future reporting periods (2024 through 2026).

Environmental analysis has been performed for some of the planned future projects, enabling a listing of estimated impacts in Table 2-8. Impacts from the other projects will be determined as environmental review is undertaken and will be reported in subsequent NCCP/HCP annual reports. The vegetation communities and Covered Species that would be impacted by any CIP Covered Activities implemented will be confirmed during pre-activity surveys, and will be reported in subsequent annual reports. Subsections with a brief description of the planned projects are provided below for the projects with completed CEQA documents and/or completed biological resources reports, as well as other projects for which initial details are available. The Water Authority has other projects in the planning stage that are not anticipated to require NCCP/HCP compliance due to their location in developed areas and lack of potential impacts to Covered Species and their habitat. As additional information on those projects is made available, the Water Authority will continue to consider compliance needs and proceed as appropriate.

Table 2-8. Summary of Near-Term Planned CIP Projects

CIP Project	Tentative Projected Start Date	Projected Impacts (Acres)		
		Permanent Impacts	Temporary Impacts (Repeated)	Temporary Impacts (One-Time)
CIP Covered Activities				
Dulin Road Erosion Control (Q0226)	Spring 2022	TBD		
First Aqueduct Treated Water Tunnels Rehabilitation Project (Q0238)	Winter 2022	TBD[a]		
San Luis Rey Habitat Management Area Restoration (H0202)	TBD	0.67[b]	—	1.48[b]
Pipeline 5 Relining, Twin Oaks Valley Road to Crossover Pipeline Turnout (R0317)	Summer 2022	<0.01[c]	—	3.10[c]

Table 2-8. Summary of Near-Term Planned CIP Projects

CIP Project	Tentative Projected Start Date	Projected Impacts (Acres)		
		Permanent Impacts	Temporary Impacts (Repeated)	Temporary Impacts (One-Time)
Southern First Aqueduct Structures Rehabilitation Project (Q0211)	Summer 2022	0.02[d]	—	4.68[d]
Helix 9 FCF (Q0317)	Spring 2023	TBD		
San Diego 5A/5B FCF (Q0322)	Summer 2023	TBD		
FCF Seismic Improvements (Q0339)	Summer 2023	TBD		
Ramona Pipeline Replace Buried Isolation Valves (Q0335)	Fall 2023	TBD		
Poway 5 FCF (M0402)	Fall 2023	TBD		

Notes:

[a] This project is subject to CEQA compliance; the Water Authority prepared an MND and released it for public review in November 2021. The Water Authority Board of Directors adopted the MND in February 2022. The environmental impact analysis was performed prior to detailed design and relied on conservative assumptions of work area impacts, for the purposes of CEQA disclosure. Once design has been conducted and prior to commencing construction the Water Authority will obtain an accurate estimate of planned permanent and temporary impacts in a pre-activity survey report in compliance with the NCCP/HCP.

[b] Acreage based on *Final Mitigated Negative Declaration and Initial Study/Environmental Checklist, San Luis Rey Habitat Management Area Restoration Project, Fallbrook, California* (AECOM 2018b); permanent impacts include Tier IV orchards and vineyards and extensive agriculture (row crops, pastures); temporary impacts include Tier I southern cottonwood-willow riparian forest and Tier II arrowweed scrub and Arundo scrub; all temporary impacts are associated with grading in the southeastern corner of the site that is proposed to lower the surface elevation relative to the depth to groundwater/water table and expand the site's active floodplain farther north, which is necessary to support riparian plant species; the HMA site as a whole is considered a BSRA since it is a part of the Water Authority's preserve system.

[c] Acreage based on Biological Resources Report, North Twin Oaks Valley Road to Crossover Pipeline Turnout (Dudek 2022), which is in draft form and has not yet been submitted to the Wildlife Agencies; permanent impacts include Tier IV bare ground associated with the replacement and relocation of a structure within an existing bare ground maintenance pad/access; temporary impacts include Tier I coast live oak woodland and southern arroyo willow riparian forest, Tier II coastal sage scrub (Diegan), Tier III non-native grassland and southern mixed chaparral, and Tier IV urban/developed land, bare ground, and disturbed.

[d] Acreage based on *Biological Resources Report of the Southern First Aqueduct Structures and Rehabilitation Project* (Dudek 2021c); permanent impacts include Tier II coastal sage scrub (Diegan), Tier I southern coast live oak riparian forest, and Tier IV bare ground and eucalyptus/non-native vegetation; temporary impacts include Tier I coast live oak woodland, southern coast live oak riparian forest, and southern sycamore woodland, Tier II coastal sage scrub (Diegan), mulefat scrub, and southern willow scrub, Tier III non-native grassland, southern mixed chaparral (granitic), riparian (disturbed), and non-vegetated floodplain, channel, lakeshore fringe, and Tier IV urban/developed land, bare ground, disturbed, eucalyptus/non-native vegetation, and ornamental.

Dulin Hill Erosion Control (Q0226)

The project would repair and extend existing water bars, and revegetate a steep slope along the Second Aqueduct alignment just south of the San Luis Rey River to stabilize the slope and protect the aqueduct from erosion and scour. Project design was ongoing at the end of the 2021 reporting period. Construction is anticipated to commence in summer 2022.

First Aqueduct Treated Water Tunnels Rehabilitation Project (Q0238)

The northern segment of the First Aqueduct features three pipeline tunnels referred to as the Lilac Tunnel, Red Mountain Tunnel, and Oat Hills Tunnel, in vicinity of the unincorporated communities of Lilac and Valley Center. During inspection of the tunnels, multiple defects and groundwater infiltration were identified in all three tunnels.

The Water Authority is in the early design phase of a project to repair and rehabilitate these facilities. Current planning indicates the rehabilitation is likely to occur using multiple methods including spray-on polymer and slip lining. Both methods would require the construction of access portals to gain interior access to the pipeline and tunnels. Currently, the project is not anticipated to impact jurisdictional resources. During the 2021 reporting period, the Water Authority prepared an MND and released it for public review in November 2021; the MND was finalized in February 2022.

San Luis Rey Habitat Management Area Restoration (H0202)

The project entails establishment and restoration of wetland and upland habitat within a property owned by the Water Authority adjacent to the San Luis Rey River that currently supports row crop production. The project would require excavating soil from the southeast portion of the site to lower the surface elevation relative to the depth to groundwater/water table and expand the site's active floodplain (first flood terrace) farther north, which is necessary to support riparian plant species. The property is identified in the Water Authority's NCCP/HCP and Programmatic Master Plan Permit as a wetland establishment project to serve as habitat-based mitigation credits that are needed for future Water Authority projects and activities that have an impact on native habitat and associated Covered Species.

The Water Authority adopted an MND in August 2018 to satisfy CEQA requirements for the project. Since adoption of the NCCP/HCP, the Water Authority has incorporated minor adjustments to the HMA boundaries, detail on the physical alteration of the site required to develop the habitat preserve, and a change in the target vegetation communities' composition (AECOM 2018b), which were addressed in the MND relative to what was covered for the project in the NCCP/HCP environmental impact report/environmental impact statement (EIR/EIS). The project itself would provide mitigation for all acreage-based temporary impacts to sensitive vegetation communities, and no additional mitigation would be required. No mitigation is needed for the project's permanent impacts because these impacts only occur on non-sensitive land cover types.

The Water Authority submitted permit applications to the USACE and CDFW in February 2021 for authorization of impacts on jurisdictional waters. CDFW issued a Streambed Alteration Agreement effective February 10, 2022. The Water Authority's letter of permission pursuant to the Programmatic Master Plan Permit (PMPP) for compliance with Section 404 of the U.S. Clean Water Act is still under review with the USACE. The construction schedule for the project has been delayed while the Water Authority coordinates with Rainbow Municipal Water District, who controls the water rights on the property. Additional information related to the San Luis Rey HMA is included in Section 3.5 below.

Pipeline 5 Relining Twin Oaks Valley Road to Crossover Pipeline Turnout (R0317)

The project would reline an approximately 5,000-foot span of Pipeline along the Second Aqueduct in unincorporated San Diego County north of the City of San Marcos. Relining is performed by installing sections of welded steel liners inside the existing pipeline, with most activity occurring underground. Worker and equipment access to the interior of the pipe requires excavation of pits around sections of pipe and removing pipe material to establish temporary portals, which typically are sited at the location of existing aboveground pipeline structures that are removed and replaced as part of the project. Four temporary portals have been identified for this project, referred to as Portal 1 through Portal 4, from north to south. The project is exempt from CEQA as a repair of existing facilities. Design is currently underway and a biological resources technical report for NCCP/HCP compliance was being drafted at the end of the 2021 reporting period. Construction is anticipated to commence in Summer 2022.

Southern First Aqueduct Structures Rehabilitation Project (Q0211)

The project would entail rehabilitation, maintenance, replacement, and abandonment of existing pipeline facilities along an approximately 21-mile stretch of the First Aqueduct. The Water Authority performed a condition assessment of the existing concrete pipeline structures and mechanical equipment in 2015. Based on this assessment, 110 facilities in this southern reach of the First Aqueduct (from south of the Hubbard Hill overflow to the San Vicente Reservoir Tunnel) were identified for rehabilitation or abandonment, consisting of 54 structures on P1 and 56 structures on P2. The project aims to rehabilitate certain structures and facilities and extend their service life by 50 years; facilities no longer in use will be abandoned. Rehabilitation or replacement would include work on concrete vaults, structure tops and entry hatches, floors, valves, pipeline nozzles, ventilation features, piping, and ladders. Where needed, existing maintenance aprons around existing structures would be improved by minor regrading; addition of gravel base; and, in certain locations near channels, placing rip-rap along channel banks for stabilization and to prevent erosion from damaging structures.

The project is exempt from CEQA as a repair of existing facilities, but it is subject to NCCP/HCP compliance as a Covered Activity. The Water Authority conducted biological resource field reconnaissance surveys in August, September, and October 2020 and finalized a Biological Resource Report for the project in early 2021. The report includes applicable avoidance and minimization measures to reduce biological resource impacts, pursuant to the NCCP/HCP. The project is also anticipated to have impacts to non-wetland waters and riparian vegetation. An application (SPL-2021-00233-MAL) was submitted to USACE under the Water Authority's Programmatic Master Permit (SPL-2012-00106-PJB) in early 2021. A notification (EPIMS 18996) was submitted to CDFW in accordance with the conditions of the Water Authority's Programmatic Routine Operations & Maintenance Agreement (1600-2019-0153-R5) on April 28, 2021. Construction is anticipated to commence in summer 2022.

Helix 9 FCF (Q0317)

Project details are not yet available. Construction is anticipated to commence in spring 2023.

San Diego 5A/5B Flow Control Facility – Hydro Demo (Q0322)

The project entails replacement of the existing San Diego 5A/5B FCF with a new FCF. The site is on the south side of Miramar Reservoir, adjacent to the City of San Diego's Miramar Water Treatment Plant. Construction is anticipated to commence in summer 2023.

FCF Seismic Improvements (Q0339)

The Water Authority supplies water to its member agencies through metered connections inside its flow control facility structures. These essential facilities are required to remain in operation during and after seismic events. In 2020, a structural consultant analyzed and assessed the seismic risk of each flow control facility. Seismic vulnerabilities were identified in eight masonry flow control facilities A structural consultant will perform a more detailed analysis of these eight flow control facilities and design improvements to mitigate these seismic vulnerabilities. The complete scope of the work to retrofit these structures is expected by October 2022 with construction starting in August 2023. The retrofit work is expected to complete before August 2025.

Ramona Pipeline Replace Buried Isolation Valves (Q0335)

The Water Authority supplies water to three member agencies through the Ramona Pipeline, which runs the Second Aqueduct in Del Sur in the west to the terminus in Poway in the east. The pipeline is located in an easement north of Camino del Sur and then under Rancho Bernardo Road and Espola Road. The Water Authority has determined multiple valves at flow control facilities along the alignment are deteriorating and need to be replaced with readily accessible valves. The project will replace fourteen directly buried valves with new valves in vaults. The work will impact traffic and may occur during aqueduct shutdowns due to these valve locations and water delivery needs. The design is scheduled to complete by June 2023, and construction is scheduled to complete by November 2024.

Poway 5 FCF (M0402)

Project details are not yet available. Construction is anticipated to commence in fall 2023.

Future Planned CIP Covered Activities (2024 through 2027)

Pipeline 5 Relining to San Luis Rey (R0310)

The scope of this project is currently being developed. However, construction methods and project implementation are anticipated to be the same as previous Water Authority pipeline relining projects. The Water Authority anticipates CEQA compliance for this work activity will be addressed by a categorical exemption since the work consists of maintenance and repair, and minor alterations of existing public facilities that will not result in any expansion of use beyond existing conditions. Construction is anticipated to commence in 2024.

Pipeline 4 EI/II Structures (Q0224)

The project entails rehabilitation of, and access improvements at, two existing Water Authority aboveground or at-grade aqueduct pipeline ancillary structures, both of which are located in southern San Diego County. The northern of the two is situated along Pipeline 4E1, in a drainage approximately 0.5 mile north of Sweetwater Dam. The second project site is situated along Pipeline 4E2, in Salt Creek approximately 0.5 mile west of Lower Otay Reservoir.

The Water Authority performed vegetation mapping and botanical surveys of these sites in May 2018, along with USFWS protocol surveys for least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) during the 2018 breeding season. The Water Authority anticipates CEQA compliance for this work activity will be addressed by a categorical exemption. However, if during project development it is determined an exemption is not applicable, a single MND covering one or both sites will be prepared. Construction is anticipated to commence in 2027.

Crossover Pipeline Bypass Pipeline (R0309)

This project would replace a section of the existing Crossover Pipeline where it crosses beneath and runs adjacent to Interstate 15 (I-15) north of Escondido. The Crossover Pipeline is a 66-inch pre-stressed concrete cylinder pipe, approximately 7.5 miles long, constructed in the 1960s. The pipeline connects the Second Aqueduct's untreated water system near the Twin Oaks Valley Water Treatment Plant to a structure on the First Aqueduct south of Hubbard Hill, providing untreated water to the cities of Escondido, Poway, and San Diego, as well as the Ramona Municipal Water District, Vista Irrigation District, and Helix Water District. The segment proposed for replacement begins on Deer Springs Road west of the I-15, travels along southeasterly to cross the I-15, then continues south adjacent to

N. City Centre Parkway to a point just north of the Frontage Road overpass. The Water Authority plans to realign this segment and abandon the existing facility rather than reline the pipe or replace it in place. Preliminary stages of project design was underway during the 2021 reporting period. The project is subject to CEQA and the Water Authority plans to commence environmental impact review and prepare an MND during 2022. Construction is anticipated to commence in summer 2024.

3 Mitigation and Effectiveness/ Validation Monitoring

This chapter describes the use of HMAs for mitigation and summarizes the two other components to a monitoring program—Effectiveness Monitoring and Validation Monitoring—at the established HMAs.

As noted in Chapter 1, the Water Authority has agreements with entities to manage an additional 1,147 acres of other conserved mitigation lands or MMAs (Figure 3-1). The MMAs provide significant contributions to regional San Diego conservation planning efforts that the Water Authority obtained and conveyed to other NCCP/HCP participants as part of its ESP mitigation. The lands contribute to the baseline of regional preserve lands and conservation of Covered Species by protecting contiguous blocks of suitable habitat within which Covered Species are known to occur or have the potential to occur. The MMAs will not be reported on in this document as the Water Authority cannot use these lands as mitigation for Covered Activities and the MMAs are not part of the Plan's Preserve Area.

The Water Authority compensates for impacts to Covered Species and loss of their habitat by deducting credits from its upland and wetland HMAs established for this use (Figure 3-1). The use of mitigation credits (acres) for permanent impacts will require the permanent withdrawal of credits (Table 3-1). Where on-site habitat enhancement and restoration are expected to mitigate temporary impacts, the Water Authority will ensure sufficient credits remain in one or more HMAs to provide off-site mitigation should the enhancement or restoration not meet the performance criteria (Water Authority 2010).

The Plan's biological mitigation approach is habitat based. All of the vegetation communities/land covers (habitat types) known to occur within the Plan Area are grouped into tiers deemed to have similar ecological values, based on scarcity within the region (see Appendix G), Covered Species diversity, environmental sensitivity, and other considerations. Impacts to habitats caused by Covered Activities will be mitigated with the same habitat or biologically equivalent or higher quality habitat. Wetland habitats are separated from upland habitats because of the qualitative and regulatory differences attributed to wetlands.

The Plan requires that impacts from Covered Activities are fully compensated by providing the required acres of appropriate mitigation credits from the HMAs. This is achieved by augmenting the Preserve Area (and qualifying mitigation acres) through acquisition of additional Preserve Area land within the Plan Area, or by acquiring credits in other approved conservation/wetland banks within the Plan Area (after notifying the Wildlife Agencies of the intent to use this option). Before implementation of each Covered Activity, the Water Authority will demonstrate that the Plan has those habitat (credit) acres available, or how the required compensating habitat will be obtained. Impact acres and mitigation acres are tracked to confirm that they are in "rough step" and that conservation commitments are being met (Table 3-2) (Water Authority 2010).

Table 3-1 provides a summary of the initial credits by vegetation community/land cover type, cumulative credits withdrawn through the 2021 reporting period, and remaining credits for each HMA. Detailed ledger sheets for the Crestridge, San Miguel, and Manchester HMAs are also included in Appendix A. Appendix H provides a summary of the Covered Species known to occur in each HMA and which HMAs have suitable habitat for Covered Species. Appendix H also notes whether any management actions were taken for each species at a particular HMA.

Table 3-2 tracks how many acres "ahead" the Water Authority is regarding mitigation credits. Table 3-2 also notes the anticipated impacts for the next 2 years (2022–2023) and indicates the Water Authority is approximately 630 acres ahead in meeting their mitigation obligations.

Table 3-3 tracks the progress of revegetation of temporary impacts. Revegetation efforts have only been initiated for completed Covered Activities; revegetation for Covered Activities that are ongoing will commence following completion of the activity. The on-site revegetation of one-time temporary impacts is subject to performance criteria. Revegetation efforts must meet performance standards within 3 to 5 years (depending on site-specific conditions) to be considered successful. If revegetation of one-time temporary impacts fails to meet performance criteria within 3 to 5 years, off-site mitigation may be considered at the Water Authority's discretion. During the 2021 reporting period, the Water Authority identified an off-site mitigation need for one area on the Pipeline 3 Desalination Relining San Marcos to Twin Oaks Valley Water Treatment Plant project that was not meeting success criteria after an extended 6-year maintenance and monitoring program.

Table 3-1. HMA Credit Status by Vegetation Community[a]

Tier	Vegetation Type	Crestridge HMA			San Miguel HMA			Rancho Cañada HMA			Projected San Luis Rey River HMA[b]			Manchester HMA			Total Preserve Area[c]		
		Initial Credits	Deductions to Date	Available Credits	Initial Credits	Deductions to Date	Available Credits	Initial Credits	Deductions to Date (CSP)[d]	Contributed Conservation Acres	Initial Credits Proposed	Deductions to Date	Available Credits	Initial Credits	Deductions to Date	Available Credits	Total Initial Credits	Total Deductions to Date	Total Available Credits[e]
Upland Habitats																			
I	Chaparral I	24.80	2.98	21.82	–	–	–	–	–	–	–	–	–	–	–	–	**24.80**	**2.98**	**21.82**
	Coastal	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Coniferous Forest I	–	–	–	–	–	–	–	–	–	–	–	–	0.01	0.00	0.01	**0.01**	**0.00**	**0.01**
	Grasslands I	–	–	–	16.00	8.02	7.98	–	–	–	–	–	–	–	–	–	**16.00**	**8.02**	**7.98**
	Oak Woodland and Forest	–	–	–	–	–	–	29.60	16.97	12.63	12.06	–	12.06	–	–	–	**41.66**	**16.97**	**12.06**
	Coastal Sage-Scrub I	233.65	233.65	0.00	–	–	–	–	–	–	–	–	–	–	–	–	**233.65**	**233.65**	**0.00**
II	Coniferous Forest II	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Coastal Sage-Scrub II	–	–	–	1,034.00	563.04	470.96	162.38	0.00	162.38	9.08	–	9.08	0.50	0.00	0.50	**1,205.96**	**563.04**	**480.04**
	Sage-Scrub, Montane/ Trans-montane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
III	Chaparral III	–	–	–	132.00	34.10	97.90	83.74	76.14	7.60	–	–	–	–	–	–	**215.74**	**110.24**	**97.90**
	Chaparral, Montane/ Trans-montane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Grasslands III	–	–	–	–	–	–	67.25	0.00	67.25	–	–	–	0.10	0.00	0.10	**67.35**	**0.00**	**0.10**
IV	Agricultural	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Disturbed/Developed	2.60	0.00	2.60[f]	–	–	–	8.27	0.00	8.27	–	–	–	–	–	–	**10.87**	**0.00**	**2.60**
	Exotic Landscapes	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
Wetland Habitats																			
I	Aquatic, Marine I	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Riparian I	–	–	–	–	–	–	34.70	17.86	16.84	20.03[g]	0.00	20.03	–	–	–	**54.73**	**17.86**	**20.03**
	Wetland I	–	–	–	–	–	–	–	–	–	–	–	–	5.57	5.57	0.00	**5.57**	**5.57**	**0.00**
II	Aquatic, Freshwater II	–	–	–	1.00	0.00	1.00	–	–	–	–	–	–	–	–	–	**1.00**	**0.00**	**1.00**
	Aquatic, Marine II	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Riparian II	–	–	–	3.00	0.00	3.00	–	–	–	0.38	0.00	0.38	1.40	1.40	0.00	**4.78**	**1.40**	**3.38**
	Wetland II	–	–	–	–	–	–	4.07	4.07	–	––	–	–	–	–	–	**4.07**	**4.07**	**0.00**
III	Aquatic, Freshwater III	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Riparian (Disturbed)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**0.00**	**0.00**	**0.00**
	Total	**261.05**	**236.63**	**24.42**	**1,186**	**605.16**	**580.98**	**390.01**	**115.04**	**274.97**	**41.55**	**0.00**	**41.55**	**7.58**	**6.97**	**0.61**	**1,886.19**	**963.80**	**646.92**

Notes:

[a] Deductions to date and available credits may vary from previous annual reports given that actual mitigation requirements based on as-built impacts may vary from pre-construction estimates in CEQA documents or pre-activity survey forms. Deductions to date include reserve credits for ongoing and near-term projects. Totals may not sum due to rounding.

[b] San Luis Rey HMA credits reflect updated mitigation planning and design performed during the 2021 reporting period.

[c] The Preserve Area includes lands acquired before issuance of the permits that the Wildlife Agencies have agreed may be credited toward the obligations of the NCCP/HCP. These debits are included in the "Deductions to Date" column.

[d] As discussed in Section 6.8.1.3 of the Plan, this acreage was allocated to mitigate biological impacts associated with the Carryover Storage Project (CSP). The remaining approximately 275 acres of sensitive vegetation communities that supports Covered Species have been committed to the Preserve Area as an "additional contribution to conservation" by the Water Authority, and may not be used as credit for NCCP/HCP impacts (see Table 6-11 in the Plan).

[e] The Total Available Credits column for the Preserve Area excludes the Rancho Cañada Contributed Conservation Acres as these acres cannot be debited further.

[f] This acreage is proposed for restoration and credit (not presently available).

[g] This acreage includes 8.9 acres of enhancement.

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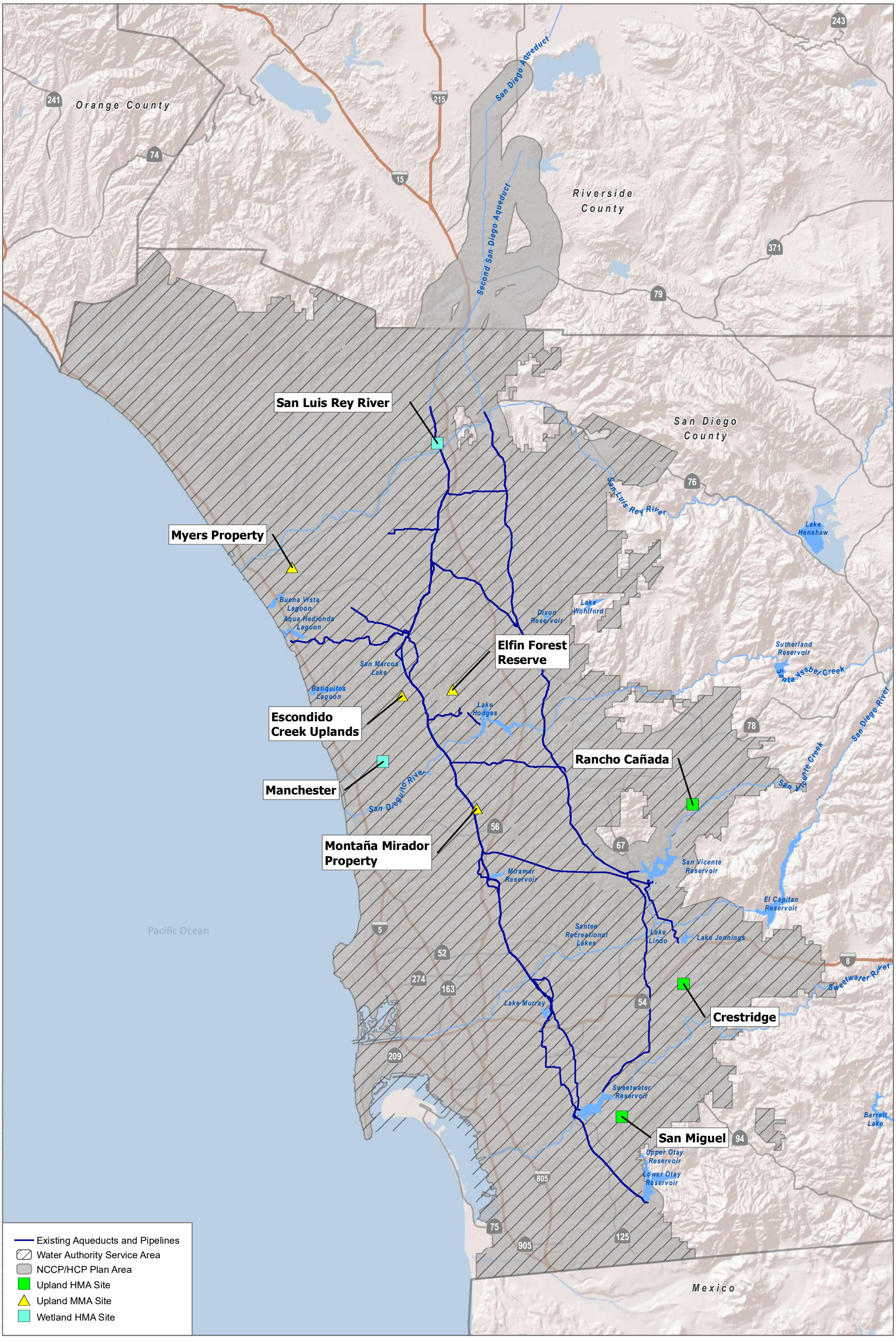

SOURCE: Esri World Shaded Relief 2021; SanGIS 2021; SDCWA 2021

DUDEK

0 15,000 30,000 Feet

FIGURE 3-1

Location of Habitat Management Areas (HMAs) and Mitigation Management Areas (MMAs)

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Table 3-2. Rough Step Assessment: Vegetation Communities/Land Covers[a]

Tier	Vegetation Community/ Land Cover Type	Total Available Credits[b]	Expected Mitigation Needs (2022-2023)[c]	Reserved Credits for Temporary Impacts[d]	Credits Reserved by Tier	Acres Ahead by Tier
Upland Habitats						
I	Chaparral I	21.82	—	0.23	0.23	41.64
	Coastal	0.00	—	0.00		
	Coniferous Forest I	0.01	—	0.00		
	Grasslands I	7.98	—	0.00		
	Oak Woodland and Forest I	12.06	—	0.00		
	Coastal Sage-Scrub I	0.00	—	0.00		
II	Coniferous Forest II	0.00	—	0.00	5.85	474.19
	Coastal Sage-Scrub II	480.04	0.003	5.85[e]		
	Sage-Scrub, Montane/ Trans-montane	0.00	—	0.00		
III	Chaparral III	97.90	—	0.03	1.56	96.44
	Chaparral, Montane/ Trans-montane	0.00	—	0.00		
	Grasslands III	0.10	—	1.53		
IV	Agricultural	0.00	—	0.00	0.00	2.60
	Disturbed/Developed	2.60	—	0.00		
	Exotic Landscapes	0.00	—	0.00		
Wetland Habitats						
I	Aquatic, Marine I	0.00	--	0.00	0.16	19.87
	Riparian I	20.03	0.006	0.15		
	Wetland I	0.00	—	0.00		
II	Aquatic, Freshwater II	1.00	—	0.00	0.05	5.31
	Aquatic, Marine II	0.00	—	0.00		
	Riparian II	4.36	—	0.05		
	Wetland II	0.00	—	0.00		
III	Aquatic, Freshwater III	0.00	—	0.00	0.00	0.00
	Riparian (Disturbed)	0.00	—	0.00		
	Total	**648.79**	**0.009**	**7.84**	—	**640.05**

Notes:

[a] The rough step assessment may vary from previous annual reports given that actual mitigation requirements based on as-built impacts may vary from pre-construction estimates in CEQA documents or pre-activity survey forms.

[b] The total available credits accounts for all deductions to date, including deductions associated with Covered Activities initiated in 2020. The Total Available Credits column excludes the Rancho Cañada Contributed Conservation Acres as these acres cannot be debited further.

[c] This column represents the total expected mitigation needed based on the CEQA planning document or, for CEQA-exempt projects, the biological resources report. The mitigation need shown here entails expected impacts related to the planned Southern First Aqueduct Structures Rehabilitation Project (Q0211).

[d] If revegetation efforts for temporary impacts are unsuccessful, credits will be withdrawn from the appropriate HMA; based on acreages shown in Table 3-3.

[e] Temporary impacts within the ROW on the Nob Hill Improvements Project have been mitigated off-site and are not tracked as part of the rough step assessment.

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Table 3-3. Summary of Ongoing and Completed On-site Revegetation of Temporary Impacts

Project[a]	Restoration Tracking Number	Revegetation Start (Month/Year)	Vegetation Community Requiring On-site Revegetation	On-site Revegetation within BSRA (Acres)	On-site Revegetation outside BSRA (Acres)	Total Acres of On-site Revegetation	Completion (Month/Year)[b]
Ongoing Revegetation Efforts							
La Mesa to Sweetwater Pipeline Urgent Repair at Slaughterhouse Canyon (Q5219)	Q5219	03/2017	Coastal Sage-Scrub II	—	0.01	0.01	Ongoing
			Grassland III	—	0.07	0.07	
Nob Hill Pipeline Improvements Project (C0721)	H0537	04/2017	Coastal Sage-Scrub II	0.08	3.68[c]	3.76[c]	Ongoing
			Southern Willow Scrub II	—	<0.001	<0.001	
			Chaparral III	0.01	—	0.01	
Pipeline 4 Relining at Lake Murray (R0306)	R5306	05/2017	Coastal Sage-Scrub II	0.10	1.91	2.01	Ongoing
			Grassland III	—	0.10	0.10	
Pipeline 3 Relining Project Lake Murray to Sweetwater Reservoir (R0209)	R5214	08/2018	Coastal Sage-Scrub II	0.10	0.70	0.80	Ongoing
			Grassland III	—	0.40	0.40	
Moosa Canyon Erosion Control Project (Q0209)	Q5209	12/2018	Riparian I	0.05	0.08	0.13	Ongoing
			Riparian II	—	0.05	0.05	
			Coastal Sage-Scrub II	—	0.03	0.03	
			Grassland III	0.05	0.16	0.21	
Pipeline 5 Relining Project Delivery Point to Sage Road (R0307)	R5307	07/2019	Coastal Sage Scrub II	—	1.04	1.04	Ongoing
Pipeline 4 Emergency Repair at Red Mountain Reservoir (R0283)	R5307	11/2019	Coastal Sage Scrub II	—	0.03	0.03	Ongoing
			Southern Mixed Chaparral III		0.02	0.02	
Northern First Aqueduct Structures and Lining Rehabilitation (Q0204)	Q5204	01/2020	Riparian I	—	0.02	0.02	Ongoing
			Coastal Sage Scrub II	—	1.90	1.90	
			Grassland III	—	0.75	0.75	
			Ongoing Revegetation Totals	**0.39**	**10.95**	**11.34**	
Completed NCCP/HCP Revegetation Efforts							
Pipeline 4 Vent Replacement Project (San Marcos Vent Modifications) (K0305)	H0533	5/2014	Coastal Sage-Scrub II	—	1.17	1.17	11/2018
			Chaparral III	—	0.15	0.15	
Pipeline 3 Relining Sweetwater to Lower Otay Reservoir (R0211/R0212)	H0534	8/2014	Coastal Sage-Scrub II	0.20	2.10	2.30	06/2019
			Grassland III	0.10	4.10	4.20	
Pipeline 4 Relining State Route 52 to Lake Murray (R0274)	H0528	7/2013	Coastal Sage-Scrub II	0.69	1.31	2.00	06/2019
			Grassland III	0.20	0.50	0.70	
Pipeline 3 Desalination Relining San Marcos to Twin Oaks (K0304)	H0535	01/2015	Chaparral I	0.05	0.18	0.23	06/2021[d]
			Coastal Sage-Scrub II	0.24	2.18	2.42	
			Grassland III	0.69	0.50	1.19	
Pipeline 3 Urgent Repair at Maler Road (Q0220)	Q5220	03/2016	Coastal Sage-Scrub II	—	0.27	0.27	04/2021
			Completed Revegetation Totals	**2.17**	**12.46**	**14.63**	

Notes:
N/A=not applicable

[a] Revegetation efforts have only been initiated for completed Covered Activities. Revegetation for Covered Activities that are ongoing will commence following completion of the activity. Revegetation efforts summarized in this table include revegetation of both one-time and repeated temporary impact areas.

[b] On-site revegetation of temporary impacts is subject to performance criteria. Revegetation efforts must meet performance standards within 3 to 5 years (depending on site-specific conditions) to be considered successful. If revegetation fails to meet performance criteria within 3 to 5 years, off-site mitigation may be considered at the Water Authority's discretion.

[c] All temporary impacts within the ROW on the Nob Hill Improvements Project have been mitigated off-site and are not tracked as part of the rough step assessment.

[d] The multi-site Pipeline 3 Desalination Relining San Marcos to Twin Oaks Valley Water Treatment Plant restoration reached the end of its scheduled 5-year maintenance and monitoring term in summer of 2020, but maintenance and monitoring was extended for one year (2021) due to underperformance at one work area, Portal 1. As reported in the Year 6 restoration monitoring report (Dudek 2021d), excluding the bare area, Portal 1 exhibited adequate native cover (65% cover) at the end of Year 6. The bare area was reseeded in November 2020 and monitored throughout the growing season, but total native cover did not increase. Since the bare patch did not show signs of improving total native cover by the end of Year 6, the bare area (0.027 acre of coastal sage scrub (Tier II) outside BSRA) was removed from the total area restored at Portal 1, and will be mitigated as a permanent impact pursuant to the NCCP/HCP. With the exclusion of the bare area, Portal 1 restoration can be considered complete. The 0.027 acre of coastal sage scrub has been added to Table 3-2 above (see Reserved Credits for Temporary Impacts column).

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3.1 Crestridge HMA

The Crestridge HMA provides as-needed pre-approved mitigation lands for CIP project impacts. The multiple-parcel site is south of Interstate 8 at the eastern edge of the City of El Cajon in San Diego County (Figure 3-1). The Crestridge HMA and the adjacent Crestridge Ecological Reserve (CER) is owned by CDFW, who jointly manages both properties with the Endangered Habitat Conservancy. Diegan coastal sage scrub habitat composes approximately 90% of the site, with southern mixed chaparral composing approximately 9%. The Diegan coastal sage scrub habitat is of high quality, and the southern mixed chaparral has connectivity to larger expanses of chaparral northeast of the site. Disturbed areas account for 1% of the site (Table 3-1). Numerous sensitive plant species are known to occur within the scrub and chaparral habitats on-site. The large expanses of high-quality scrub and chaparral habitats also provide habitat for many sensitive wildlife species (Appendix H).

3.1.1 PAMP Development and Objectives

The CER, including the Water Authority portion (i.e., Crestridge HMA), is managed under the *Habitat Management and Monitoring Plan for the Crestridge Ecological Reserve – Final Administrative Draft* (CBI and EHC 2009). The management plan was written to comply with the County of San Diego Multiple Species Conservation Program (MSCP) guidelines for preserve management and includes an adaptive management component. The Crestridge HMA is managed together with the larger CER pursuant to the final habitat management plan.

3.1.2 Management and Monitoring Activities

In early 2021, the California Wildlife Foundation, at the request of CDFW, provided routine funding to Endangered Habitats Conservancy (EHC) to implement priority management activities on the CER. This management is applicable to the larger CER and is not specific to the Water Authority's credited portion. These activities continued throughout calendar year 2020 working in collaboration with Earth Discovery Institute; Conservation Biology Institute; California Department of Forestry and Fire; CDFW wardens; and a number of consultants, contractors, and volunteers. The major tasks performed and accomplishments attained at CER during 2021 are outlined below (Vinje, pers. comm., 2022)[2].

Covered Species Monitoring/Management

- San Diego thorn-mint (*Acanthomintha ilicifolia*) (Water Authority NCCP/HCP Covered Species): Management Strategic Plan rare plant monitoring protocol and targeted weed control.
- San Diego goldenstar (*Bloomeria clevelandii*) (Water Authority NCCP/HCP Covered Species): Management Strategic Plan rare plant monitoring protocol.

[2] Note the activities discussed herein occurred from January through October 2021 only. Details regarding activities performed in November and December 2021 will be discussed in next year's report.

Invasive Plant Control

- Treated nonnative grasses and forbs including: purple falsebrome (*Brachypodium distachyon*), field mustard (*Hirschfeldia incana*), tocalote (*Centaurea melitensis*), horehound (*Marrubium vulgare*), filaree (*Erodium botrys*), rattail fescue (*Festuca myuros*), milk thistle (*Silybum marianum*), castor bean (*Ricinus communis*), smooth cat's-ear (*Hypochaeris glabra*), tree tobacco (*Nicotiana glauca*), and stinkweed (*Dittrichia graveolens*), among others.
- Mapped invasive species before treatment, communicated with other land managers and herbicide applicators, organized and maintained the pesticide bin, cleaned and maintained spray equipment and the Intelli-Spray System, reviewed invasive plant treatment/strategies, attended the San Diego County Weed Management Area symposium, and continued pesticide application training and reporting.

Invasive Animal Control

- Treated gold spotted oak borer (*Agrilus auroguttatus*) affecting coast live oaks (*Quercus agrifolia*) and oak pit scale (*Asterolecanium* sp.) affecting Engelmann oaks (*Q. engelmannii*) in the oak grove near the Horsemill Road entrance.

Enhancement and Restoration

- Included staff and volunteer efforts at Pollinator Hill and in the grasslands, the oak grove, and near the Hubbell Kiosk and surrounding areas (Demonstration Garden, Interpretive Loop).
  - In the grasslands and Pollinator Hill, EHC land managers maintained and repaired irrigation lines and water basins; drilled (augured) holes for native container plants, installed the plants, and replaced and repaired plant protectors; surveyed for nonnative plants and assessed oak tree health; hand-weeded and mowed nonnative and competitive native plants. EHC staff maintained spiny redberry (Rhamnus crocea), purple needle grass (Stipa pulchra), goldenrod (Solidago velutina ssp. californica), and other native container plantings. EHC land managers cut up and removed dead oaks limbs and thinned/removed laurel sumac (Malosma laurina) and California sagebrush (Artemisia californica) encroaching on trails.
  - At the Hubbell Kiosk and surrounding areas EHC land managers controlled nonnative and competitive plants, watered native container plantings and maintained associated basins, maintained wildlife feeders, and installed a sun shade over the frog pond.
  - Volunteers maintained trails, installed container plants, maintained plant protectors, irrigated plants, repaired planting basins, and controlled nonnative and competitive plants in restoration areas.

Property Management

- EHC staff conducted property management activities in the following categories: public outreach/education, access control, dogs off-leash, enforcement/security, erosion control, facilities and general maintenance, fire and brush management, incidents, motorcycles, trails and roads, and trash removal.

3.2 Rancho Cañada HMA

The Rancho Cañada HMA, in conjunction with adjacent lands owned by CDFW, San Diego County Parks and Recreation, and the Bureau of Land Management, is an important core habitat conservation area. The property is situated between the coastal mesas and the mountains of the Peninsular Ranges in west-central San Diego County (Figure 3-1) and is part of a proposed network of open space under the MSCP. San Vicente Creek is the dominant and central feature of the property, and the property contains the creek channel, floodplain, and a portion of the hills to the northwest of the creek, which provide for local movement of wildlife. Continued acquisitions by other MSCP participants will further secure the movement of key wildlife species (e.g., migrating birds, coyote [*Canis latrans*], bobcat [*Lynx rufus*], mule deer [*Odocoileus hemionus*], and mountain lion [*Puma concolor*]) through this significant regional linkage.

The property has exceptional plant and wildlife habitat value due to the presence of San Vicente Creek and the diverse mosaic of vegetation communities, including non-native grassland, Diegan coastal sage scrub, chaparral, oak woodland, riparian forest, wetland, and intermittent stream habitats (Table 3-1). San Diego thornmint, a Covered Species, has been documented in the reserve in the past and is being monitored by annual focused surveys to confirm its status. A number of covered wildlife species are known, or reported, to occur on the property (Appendix H), including arroyo toad (*Anaxyrus* (= *Bufo*) *californicus*), coast (San Diego) horned lizard, Coronado skink, Belding's orange-throated whiptail, southern California rufous-crowned sparrow, and yellow warbler (*Dendroica petechia brewsteri*). In addition, the following wildlife species covered by the Plan have potential to occur within or adjacent to the Rancho Cañada HMA: (northern) red-diamond rattlesnake, Southern Pacific (southwestern) pond turtle (*Clemmys marmorata pallida*), least Bell's vireo, San Diego desert woodrat, and mountain lion.

The Water Authority funded the purchase of this 390-acre property to provide a significant, important habitat contribution by the Plan. Part of the property (115.04 acres) has been allocated to mitigate biological impacts associated with the Carryover Storage Project (CSP). However, approximately 275 acres of sensitive vegetation communities that supports Covered Species is committed to the Preserve Area as an "additional contribution to conservation" by the Water Authority, and will not be used as credit for mitigating Plan impacts.

3.2.1 PAMP Development and Objectives

CDFW took ownership of the Rancho Cañada HMA in December 2007 and partnered with California State Parks in 2013 to complete a draft Land Management Plan. State Parks prepared an MND for the Land Management Plan and circulated it for public review May 5 through June 3, 2015. The Land Management Plan was finalized and the Final MND was adopted in February 2016 (CDFW 2016).

3.2.2 Management and Monitoring Activities

Details on management and monitoring activities conducted in the 2021 reporting period were provided via email from CDFW staff (Price, pers. comm., 2022).

Covered Species Monitoring/Management

- Arroyo toad surveys were conducted in May and June 2021. CDFW staff observed no arroyo toad tadpoles in May and observed one arroyo toad metamorph in June. There was a lack of water within San Vicente Creek in 2021.

Invasive Plant Control

- Treated roadside mustards with herbicide along an approximately 2-mile-long roadway.
- Removed ten tree tobacco plants , four Mexican fan palms , one Canary Island date palm , and eight tamarisk (*Tamarix* spp.) and herbicide treated the stumps in the Water Authority mitigation area of San Vicente Creek.

3.3 San Miguel HMA (Conservation Bank)

The 1,186-acre San Miguel HMA is an existing conservation bank that is part of the larger 1,852-acre San Miguel Ranch conserved land, located in Chula Vista near Mother Miguel Mountain and San Miguel Mountain (Figure 3-1). The conservation bank is part of the San Diego National Wildlife Refuge Complex (Refuge) and is managed in accordance with the conservation banking agreement by USFWS staff for species covered by the MSCP, other federal endangered species, and specific species identified in the San Miguel Conservation Banking Agreement.

The San Miguel HMA supports a number of upland habitats that provide very high habitat value for sensitive species. In addition to high-quality coastal sage scrub, the site supports chamise and mixed chaparral, native (perennial) grasslands, riparian scrub/dry marsh, and seasonal ponds. Approximately 85% of the parcels consist of Diegan coastal sage scrub habitat. The remaining 15% consists of native (perennial) grassland, southern mixed chaparral, chamise chaparral, and riparian scrub/dry marsh. Several stock ponds and ephemeral drainages are also present (Table 3-1).

The site supports a rich species biodiversity, including a number of sensitive Covered Species (Appendix H). Numerous sensitive bird, reptile, and mammal species are known to occur within the HMA lands, as well as Quino checkerspot butterfly.

3.3.1 PAMP Development and Objectives

A PAMP has not been developed specifically for the San Miguel HMA. However, a Comprehensive Conservation Plan (CCP) and environmental Assessment (EA) for the entire Refuge, including the San Miguel HMA, was prepared and released for public comment in 2014. The CCP/EA was finalized and published in the Federal Register in August 2021 (USFWS 2021).

The CCP provides long-range management direction for achieving Refuge purposes, while also providing important background information related to the history of the Refuge, the resources being conserved, past management activities, and any anticipated future conditions that could affect Refuge resources and management. The final CCP describes management actions planned over the entire Refuge. While mitigation banks that are part of the Refuge are discussed, the CCP does not provide a specific breakdown of actions for any of the banks, including the San Miguel HMA.

3.3.2 Management and Monitoring Activities

Details on management and monitoring activities conducted in the 2021 reporting period were provided via email from USFWS staff (Binns, pers. comm., 2022).

Covered Species Monitoring/Management

- Known occurrences of two NCCP/HCP Covered Plant Species, Otay tarplant (*Deinandra conjugens*) and San Diego goldenstar (*Bloomeria clevelandii*) were monitored in 2021 using the San Diego Management and Monitoring Program Rare Plant Inspect and Manage Protocol, as part of an effort by CBI and AECOM. Tarplant and San Diego goldenstar were detected.
- Hermes copper butterfly (*Lycaena hermes*) surveys (a Water Authority NCCP/HCP Covered Wildlife Species) were conducted on established transects within the 2007 Harris Fire footprint. None were detected, but USFWS noted this result is not unexpected as the species is very slow to recolonize post-fire.

3.4 Manchester HMA

The Manchester HMA on Lux Canyon Creek in the City of Encinitas is approximately 9.83 acres (Figure 3-1). The wetland mitigation project site originally consisted of disturbed non-wetlands habitat adjacent to Lux Canyon Creek. A final Supplemental EIR was approved in July 2003, and construction occurred between October 2004 and March 2005. The design planned for the creation of 7.74 acres of riparian scrub and herbaceous wetlands, and 2.0 acres of upland revegetation. During 2002 through 2004, coastal California gnatcatcher was observed adjacent to the project area. During post-construction site visits, coastal California gnatcatcher has been heard calling in the upland habitat west and north of the site. Other wildlife detected during vegetation monitoring (based on scat and tracks) include mule deer, brush rabbit (*Sylvilagus bachmani*), coyote, raccoon, and numerous bird species. The wetland creation and upland revegetation areas are expected to provide future suitable habitat for least Bell's vireo. Table 3-1 identifies the habitat types present at the Manchester HMA, and Appendix H lists the species observed on-site or with suitable habitat.

The Water Authority finalized a major revision to the Long-Term Management Plan for this HMA during the 2017 reporting period and circulated it to the Wildlife Agencies and the County of San Diego. The revision was based in part on information from vegetation mapping efforts and wetland delineation reports prepared in 2012 and 2017. The Water Authority also drafted a conservation easement for Wildlife Agency review and approval, but has not circulated the document. Ongoing coordination with the County will continue to occur.

During the 2019 reporting period, the Water Authority debited the final available federal wetland credits from the Manchester HMA for permanent impacts associated with the Second San Diego Aqueduct Moosa Canyon Crossing Erosion Control Project. State credits remain available for use.

In December 2021, it was determined that a portion of wood lodge pole fence along Manchester Avenue in the northeastern portion of the HMA requires repair. The area in need of repair is located across from 3459 Manchester Avenue, on the east side of Manchester Avenue. Repair work is anticipated to occur in early 2022.

3.5 San Luis Rey River HMA

The Water Authority owns the San Luis Rey HMA site in fee and currently leases a portion of the land for row crop farming. The Water Authority completed a restoration planning effort for this HMA during the 2018 reporting period, including a proposed layout of riparian and upland habitat types, and a proposed grading plan to excavate material from the southeast quadrant of the property, adjacent to the San Luis Rey River, to lower the elevation and depth to groundwater, encouraging establishment of riparian habitat. Excavated material is intended to be deposited

elsewhere on the site, eliminating the need for off-site export. After circulating the proposed habitat layout to USFWS and CDFW for their review, the Water Authority met with the Wildlife Agencies to discuss and obtain feedback on the restoration plan. Agency feedback resulted in minor modifications to the restoration plan, including placing emphasis on establishing habitat suitable for coastal California gnatcatcher dispersal within a north-south corridor adjacent to the Water Authority ROW that runs through the center of the site.

The conceptual plan proposes a different habitat layout than that contemplated in the NCCP/HCP, with the primary difference being a reduction in the planned acreage of southern sycamore woodland and riparian oak woodland, to be replaced by coast live oak woodland in the northern part of the property, away from the river channel. After reviewing details on groundwater availability and updated floodplain layout in the HMA, and researching the affinities of the western sycamore and riparian oak woodland species, the design team decided it did not feel comfortable enough that sycamore and riparian oak woodland could be successful farther away from the river, and suggested instead to develop an upland woodland habitat in this area.

As noted in prior annual reports, a portion of the property was taken by the California Department of Transportation (Caltrans) for the State Route 76 East South Mission Road to Interstate 15 Project. In May 2020, the Water Authority and Caltrans completed a land-transfer agreement whereby the Water Authority acquired 2.11 acres of land adjacent to the HMA in compensation for the land taken for the highway widening project. The land transferred to the Water Authority has been added to the HMA.

During 2021, the Water Authority continued to prepare construction plans and contract specifications and applied for permits to authorize the project's impacts on jurisdictional waters. CDFW issued a Streambed Alteration Agreement effective February 10, 2022; the Water Authority continues to communicate with the USACE regarding issuance of a Letter of Permission under the Clean Water Act Section 404 PMPP. The Water Authority coordinated internally regarding the most appropriate mechanism for securing mitigation credits at the site and meeting their goals. Potential paths the Water Authority considered were establishing a mitigation bank that would enable them to sell or otherwise assign credits to other entities, and an advance permittee-responsible mitigation agreement that would keep all credits with the Water Authority. On May 6, 2021, the Water Authority participated in a meeting of the regional Interagency Review Team (IRT) to present the site, discuss the project status and prospective banking process, and obtain information on the various agencies' needs and concerns as the Water Authority continues toward implementing the project. The IRT meeting was attended by representatives of the USACE, U.S. Environmental Protection Agency, USFWS, CDFW, and the San Diego Regional Water Quality Control Board. After the meeting and follow-up conversations with the USACE regarding timing of IRT mitigation bank approval and waters permitting, the Water Authority elected to continue pursuing the advance permittee-responsible mitigation agreement instead of the banking process.

The Water Authority continued the project design and permitting process for the project during the 2021 reporting period, and began discussions with the USACE and other agencies regarding the next steps for securing mitigation credits once the project is implemented.

3.6 Tijuana River Valley HMA

As discussed in previous annual reports, the Tijuana River Valley HMA as described in the Plan will not be established and will not be included in future annual reports. During the 2018 reporting period, the Water Authority continued to work with the Sweetwater Authority regarding an opportunity to develop a wetland restoration (enhancement) project in the eastern portion of the Sweetwater Reservoir, as initiated during the 2017 reporting

period, but the Sweetwater Authority ultimately expressed that they would not be able to carry through with the project. The Water Authority will continue to search for opportunities to replace the wetland habitat credits lost by not developing the Tijuana River Valley HMA.

3.7 Funding

Per Section 6.12.1 of the Plan, a detailed account of funding used during the reporting year and funding committed for the upcoming year is provided in this section.

No funds were allocated to the Rancho Cañada HMA in 2020. The Water Authority appropriated $1,400,200 for management of active and future HMAs in June 2021 for fiscal year 2023, this remained unchanged in 2022, a new 2-year budget will be completed in June 2023 The 2-year budget adopted in 2020 that included design and construction funds for San Luis Rey HMA for the period July 1, 2020 through June 30, 2022, and resulted in a 2-year $3,753,720 appropriation for the project was unchanged in 2021. During 2021 approximately $474,197 of the $3,753,720 appropriated for fiscal year 2021 was spent on project design and permitting. The 2-year appropriation was adjusted and resulted in an decrease of funds from$3,753,720 to $3,556,827 appropriated for fiscal year 2023 due to delays in project development. During the preparation for the new Water Authority budget, the project's overall budget, including financial forecast for construction, interim management, and long-term management, was completed, resulting in increasing the project's approved overall budget to $12,896,681 and this remained unchanged. The Water Authority's current 2-year budget appropriated $437,355 as an additional endowment to be transferred prior to the end of fiscal year 2023.

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4 Plan Updates

This chapter discusses updates to the Plan, including clerical updates; general implementation updates; revisions and amendments to the Plan; changed and unforeseen circumstances; agency coordination efforts; and funding updates.

4.1 General Plan Implementation Updates

The Plan requires that Covered Activities demonstrate compliance with the Water Authority's implementation commitments, specifically measures to avoid, minimize, and mitigate impacts (including habitat restoration of temporary impacts) and to manage and monitor Preserve Area properties to demonstrate that suitable conditions are maintained on those lands to support Covered Species. A primary mechanism to implement the Plan's avoidance and minimization requirements for the covered biological resources is through updates to the Water Authority's General Conditions and Standard Specifications, which have been updated to reflect NCCP/HCP obligations relevant to construction compliance. The Water Authority has developed Implementation Manuals for project planning phases and O&M activities, and plans to develop another manual covering post-construction maintenance and monitoring of restoration work. The status of these Implementation Manuals are as follows:

- Standard [Construction] Specification Update – The Water Authority has completed the revision of its standard construction specification language to incorporate NCCP/HCP conditions into future construction documents. The specification language has been revised to incorporate the requirements of Plan Section 6.4.1.4, Field Personnel (and Contractor) Responsibility, and Plan Appendix I, CDFW Lake or Streambed Alteration Conditions, into specification sections 01560 Environmental Protection (formerly Temporary Controls) and 02270 Storm Water Pollution Prevention (formerly Temporary Erosion Control). Water Authority environmental personnel routinely reviews construction specifications before the contractor bid phase and makes adjustments as needed to reflect project-specific requirements, as well as to address lessons learned from prior projects.
- Implementation Manual for Project Development Phases: Preconstruction – The Water Authority has completed the revision of its pre-construction manual to incorporate the programmatic Clean Water Act Section 404 permit (SPL-2012-00106-PJB; Programmatic Master Plan Permit), which was issued to the Water Authority by the USACE in May 2015 and enhanced the planning flowcharts that are integrated into the manual.
- Implementation Manual for Project Development Phases: Post-Construction – The Water Authority has not initiated preparation of this draft manual.
- Implementation Manual for Project Operations & Maintenance – The Water Authority incorporated NCCP/HCP compliance measures into the O&M Policies, Procedures, and Practices manual in 2017.

4.2 Current Year Revisions and Amendments to the Plan

No revisions or amendments were proposed or made to the Plan, permits, or IA during the 2021 reporting period.

4.3 Changed Circumstances

Changed Circumstances are defined (50 Code of Federal Regulations [CFR] Section 17.3) as those events that may affect a species or geographic area covered by the Plan that can reasonably be foreseen by the Water Authority and the Wildlife Agencies during planning and development of the Plan. Changed Circumstances identified by the Plan include the following reasonably foreseeable events: flood; fire; extended period of reduced precipitation; invasion by exotic species or disease; toxic spills, vandalism, and other illegal human activity; and listing of non-Covered Species (see Section 8.5.1 of the Plan).

No changed circumstances occurred during the 2021 reporting period.

4.4 Unforeseen Circumstances

Unforeseen Circumstances (defined in 50 CFR Section 17.3) are changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the Wildlife Agencies at the time of the conservation plan's negotiation and development and that result in a substantial and adverse change in the status of the Covered Species. Per Section 8.5.2 of the Plan, Unforeseen Circumstances include future unanticipated conditions, which are either not defined as Changed Circumstances or exceed the definitions developed for Changed Circumstances, particularly in terms or severity or extent (e.g., flood or fire affecting species continued existence).

No unforeseen circumstances occurred during the 2021 reporting period.

4.5 Agency Coordination and Clarifications

During the 2019 reporting period, the Water Authority obtained a programmatic lake and streambed alteration agreement for routine maintenance activities that may affect the bed, bank, and channel of waters under CDFW jurisdiction, which was authorized in November 2019.

As detailed in the permit, CDFW determined that several routine maintenance activities that maintain the existing baseline condition do not require notice to CDFW over and above annual reporting that is required by the NCCP/HCP. These activities consist of removing sediment, vegetation, and debris at existing culverts and Arizona crossings, routine grading along existing access roads and unimproved stream crossings, erosion and scour protection repair upstream or downstream of existing crossings that do not extend beyond the current footprint of scour protection, and removing sediment, vegetation, and debris from work areas around existing inline structures that are located within and adjacent to streams. CDFW also determined that several routine maintenance activities may substantially adversely affect CDFW regulated resources and would be subject to the agreement including notice, mitigation, and fee requirements as set forth in the agreement. These activities include culvert, headwall, and/or Arizona crossing replacements, erosion and scour protection repair upstream or downstream of existing crossings that extends beyond the current footprint of scour protection, grading and stabilizing a road crossing when grading extends beyond the existing road width, and placement of rock slope protection, fill, or other grading adjacent to existing inline structures to stabilize a channel bank. The permit covers an extensive collection of existing facilities, as listed in Attachment B of the permit, and organizes them by the Water Authority's named ROW zones.

Details regarding routine maintenance activities conducted and covered under the programmatic lake and streambed alteration agreement for this reporting period are discussed above in Section 2.2. The 2021 reporting period is the second annual reporting period operating under the permit. As discussed above, the permit dictates that routine maintenance activities that maintain the existing baseline condition do not require notice to CDFW over and above annual reporting that is required by the NCCP/HCP. As such, this annual report includes a subsection (Section 2.2) that describes the routine maintenance activities that were conducted during the reporting period. The Water Authority recognizes there may be potential to revise the approach to describe and track routine maintenance activities pending CDFW input.

There were no agency clarifications to note for the 2021 reporting period.

4.6 Funding Updates

The Water Authority funding of the NCCP/HCP is from its general operations budget or its CIP budget. The CIP budget funds construction projects; however, generally, no attempt is made to capture an individual cost incurred specifically to comply with the NCCP/HCP. The exceptions to this are post-construction projects established generally to implement habitat restoration maintenance and monitoring associated with temporary construction impacts.

The Water Authority and consultant labor expenses for general NCCP/HCP implementation for the 2021 reporting period are $11,775. Work included annual reporting.

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5 Compliance with Pre-Existing Biological Opinions

The Water Authority is obligated to submit annual reports addressing compliance with the terms and conditions of active B.O.s. In accordance with the Plan (Section 6.12.1), annual reporting for existing B.O.s will be submitted concurrently (in a single document or under separate cover) with annual reporting for the Plan. The following subsections provide compliance updates for the following B.O.s:

- Emergency Water Storage Project (B.O. 1-6-97-F-13)
- Flow Regulatory Structure and Pipeline Tunnel at Mission Trails (B.O. 2007-B-14/2007-F-22)

Four B.O.s referenced in the NCCP/HCP no longer require reporting. Refer to the NCCP/HCP 2012-2013 Annual Report (Water Authority and AECOM 2014) for information regarding the following B.O.s:

- CIP B.O. (B.O. 1-6-93-F-28)
- Moreno-Lakeside Pipeline Project B.O. (B.O. FWS-SD-1373.2)
- Tijuana River Valley Wetlands Mitigation Project B.O. (FWS-SDG-08B0061-08F0732-R002)
- Carryover Storage Project B.O. (B.O. 2008B0061-2008F0732)

5.1 Emergency Water Storage Project (B.O. 1-6-97-F-13)

In 1997, B.O. 1-6-97-F-13 (ESP B.O.) was issued to address impacts resulting from the Water Authority's ESP for issuance of a Section 404 permit from the USACE. ESP components authorized by the ESP B.O. consist of the following multiple noncontiguous construction projects throughout San Diego County implemented over several years: Olivenhain Reservoir to Lake Hodges pipeline, Lake Hodges pumping facility, San Vicente pipeline, San Vicente Reservoir interconnect pipeline, San Vicente pumping and surge control facilities, San Vicente dam raise (by 54 feet), and north San Diego County ESP pump stations 4 and 11 (on Pipeline 3 and Pipeline 4, respectively). The ESP San Vicente Dam Raise element was completed in June 2014. The only remaining ESP components to be constructed are the north San Diego County ESP Pump Station 4 (also known as East Mission Road Pump Station) and Pump Station 11 (also known as Red Mountain Pump Station).

Off-site uplands habitat areas for ESP are designated as MMAs in the Plan. Long-term habitat management plans have been submitted to USFWS, and are considered approved by the Water Authority. The Water Authority provided all the outstanding deliverables required by the permit during the 2017 reporting period, and habitat restoration activities associated with temporary construction impacts were ongoing at the San Vicente Reservoir site during the 2021 reporting period. In August 2020, USFWS agreed with a Water Authority request to sign off approximately half of the uplands restoration areas at San Vicente Reservoir that were meeting their site criteria. Certain sites that were not meeting success criteria after several years of maintenance were quantified as permanent impacts and mitigated with ESP credits. The Water Authority continued to monitor and maintain the remainder of the sites, and in November 2021, the Water Authority requested formal sign-off of most of the remaining restoration areas because they were meeting relevant success criteria. The sign-off request was outstanding at the end of the 2021 reporting period.

Off-site wetland establishment obligations have been achieved at the Escondido Creek enhancement area and Manchester HMA. The Manchester HMA long-term management plan was submitted for Wildlife Agency review and approval in 2017, and submitted to the future land manager, The Nature Collective, for their review in 2019. A conservation easement document was circulated during the 2019 review period as discussed above in Section 3.4. Due to COVID-19 and remote working, no related coordination occurred during this reporting period.

5.2 Flow Regulatory Structure and Pipeline Tunnel at Mission Trails (B.O. 2007-B-14/2007-F-22)

In 2007, B.O. 2007-B-14/2007-F-22 was issued by USFWS to address impacts resulting from the Water Authority's FRS II, Pipeline Tunnel, Pipeline Vents Demolition, and Stabilized Crossing Project for issuance of a Section 404 permit from the USACE. A notice of completion was recorded on November 1, 2010, for the pipeline tunnel and stabilized crossing of the San Diego River elements of the project. Temporary habitat impacts for the constructed project elements were hydroseeded with a coastal sage scrub seed mixture, and maintenance and monitoring were completed in 2019.

The construction of Mission Trails FRS II and the pipeline vent demolition was postponed in 2009. Construction of the postponed components commenced in January 2020 and was ongoing at the end of the 2021 reporting period (see Section 2.1.2 above). As discussed above, the Water Authority elected ESA coverage via the NCCP/HCP rather than revising the prior B.O., due to the potential for impacts two listed species that were not covered under the prior B.O.

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Appendix A

HMA Credit Ledger Sheets

CRESTRIDGE HMA -- Credit Ledger Sheet								EXHIBIT A
		Coastal Sage Scrub			Chaparral			
CIP		Expected	Actual	Available	Expected	Actual	Available	
No.	Project Name	Mitigation (1)	Mitigation(2)	Credits	Mitigation	Mitigation	Credits	Project Status
	Initial Acquisition			233.65			24.80	
	SDG&E easement	0.00	1.40	232.25			24.80	Existing powerline easement
	Ramona Pipeline (i)	10.80	10.80	221.45			24.80	Completed; 3/89-10/90
	Sweetwater Bypass (ii)	1.20	1.20	220.25			24.80	Completed; 9/90-11/91
	Pipeline 5EI (iii)	21.90	46.80	173.45			24.80	Completed; 9/90-1/94
	Pipeline 4BI (v)	10.60	10.60	162.85			24.80	Completed; 9/91-3/94
	Pipeline 4EII (vi)	16.90	15.90	146.95			24.80	Completed; 7/92-5/94
	Pipeline 4EI (iv)	10.30	13.70	133.25			24.80	Completed; 8/91-7/94
	North County Distribution Pipeline (xii)	5.80	15.30	117.95			24.80	Completed; 4/95-12/96
	Pipeline 4BII & FRS (vii)	20.00	26.30	91.65			24.80	Completed; 8/94-11/97
	Pipeline 4BII indirect (vii)	12.20	12.20	79.45			24.80	Completed; 8/94-11/97
	Pipeline 2A (viii)	3.90	2.70	76.75			24.80	Completed; 10/96-11/97
	Levy Water Treatment Plant Expansion (xii)	4.40	4.40	72.35			24.80	Completed; 2/98
	Pipeline 5EII (x)	33.10	40.30	32.05			24.80	Completed; 1/97-6/98
	P3&4, Blk Mtn Vent to Miramar Hill Reline (indirect)	6.00	3.99	28.06			24.80	Completed 10/03-10/04
	Moreno Lakeside Pipeline/FCF	3.40	3.23	24.83			24.80	Completed; 7/02-3/05
	P4, Pomerado to SR52 Reline	0.00	0.00	24.83			24.80	Completed; 10/04-8/05
	P4, Del Dios to Blk Mtn Rnch Reline (indirect)	0.00	0.12	24.71			24.80	Completed; 10/05-06/06
	P4, Blk Mtn Rch to Blk Mtn Vent Reline (indirect)	0.64	0.44	24.27			24.80	Completed; 10/05-06/06
	Pipeline 5EII PCHF (x)	6.79	6.30	17.97			24.80	Completed; 4/04-5/07
	P4, Paint Mtn to Del Dios Reline	1.23	1.03	16.94			24.80	Completed; 9/07-2/09
R0208	P3, SR52 to Lake Murray Reline (indirect)	7.86	7.86	9.08			24.80	Completed; 7/08-5/09
R0217	P3&P4, Miramar Hill to SR52 Reline [2008111059]	3.29	2.04	7.04			24.80	Construction 7/11 -11/12
R0217	P3&P4, Miramar Hill to SR52 Reline (indirect)	2.40	2.40	4.64			24.80	Construction 7/11 -11/12
R0274	P4, SR52 to Lake Murray Reline & P3 Interconnect	0.00	0.00	4.64	0.05	0.25	24.55	Construction 8/12 -7/13
R0211/ R0212	P3 Sweetwater Res to Lower Otay Lake Reline	0.00	0.30	4.34	2.30	2.17	22.38	Construction 9/13 - 10/14
K0305	Pipeline 4 San Marcos vent	1.40	1.87	2.47	0.00	0.08	22.30	Completed 11/13 - 5/14
K0304	Pipeline 3 Reline (Desal)	0.00	0	2.47	0.15	0.25	22.05	Construction 1/14 - 2/15
R0161/ R0304	P3, P4 & P5 Reline @ San Luis Rey River	0.50	0.00	2.47	0.00	0.00	22.05	Construction 9/14 - 5/15 No impacts
C0721	Nob Hill Pipeline Improvements	2.47	2.47	0.00	0.04	0.00	22.05	Construction 10/15 - 4/17
Q0312	P3 Sweetwater Res to Lower Otay Lake Reline				0.00	0.02	22.03	Construction 9/17 - 6/18
Q0209	Q0209 Moosa Canyon Erosion Control				0.00	0.01	22.02	Construction 1/18 - 12/18
C0603	MTRP FRS II & Vent Demo (Reserved)				0.14		21.88	pending
N0504	Hauck Mesa FRS (Reserved)				0.06		21.82	pending
	Totals	**187.08**	**233.65**	**0.00**	**2.74**	**2.78**	**21.82**	

NOTES

1. Expected Impacts are based on CEQA document(s)/assessment
2. Actual Impacts are based on post construction surveys — as of 12/31/2018
3. Credits are reserved at CEQA project approval and debited when the Notice of Completion is issued.
4. 2.6 acres of disturbed lands were reseeded with CSS, will be added to bank when successful
5. 1993 BO Pipeline 6 (iv) planning deferred beyond 2025, subject to re-scoping

file: Crestridge HMA Bank_12-31-2017.xlsx

Table 1 - MANCHESTER HMA -- Credit Ledger Sheet (Created/Restored Habitats)[5]

Project Name	Southern Willow Scrub			Cismontane Alkali Marsh			Torrey Pine Forest			Baccharis sarothroides dominated Diegan Coastal Sage Scrub[4]			Diegan Coastal Sage Scrub			Non-Native Grasslands			Project Status
	Expected Mitigation[1]	Actual Mitigation[2]	Available Credits[3]	Expected Mitigation[1]	Actual Mitigation[2]	Available Credits[3]	Expected Mitigation[1]	Actual Mitigation[2]	Available Credits[3]	Expected Mitigation[1]	Actual Mitigation[2]	Available Credits[3]	Expected Mitigation[1]	Actual Mitigation[2]	Available Credits[3]	Expected Mitigation[1]	Actual Mitigation[2]	Available Credits[3]	
Initial Restored or Created Habitat	-	-	1.40	-	-	5.57	-	-	0.01	-	-	0.13	-	-	0.36	-	-	0.10	Total created/restored habitats equal 7.57 ac
Emergency Storage Project-non Olivenhain component [95-20092-DZ; CDFW 5-361-96]		1.40	0.00		3.16	2.41		0.00	0.01			0.13			0.36			0.10	Actual CDFW impact acreage is 4.56 ac (0.1 ac FWM, 1.05 ac SWS, 0.25 ac MFS, 0.33 ac SCWRF and 2.83 ac SCLORF); expected CDFW impact acreage was 6.13 ac (0.51 ac FWM, 1.43 ac SWS, 0.45 ac MFS, 0.33 ac SCWRF, 3.24 ac SCLORF, and 0.17 ac disturbed wetlands)
2nd Aqueduct Moosa Canyon Urgent Erosion Control Project Q0209 [1600-2016-0130-R5; SPL-2016-00454-PJB]			0.00		0.26	2.15			0.01			0.13			0.36			0.10	As-built Corps/CDFW impacts 0.113ac; CDFW only 0.031 ac. (NCCP/HCP ratios applied)
2nd Aqueduct Moosa Canyon Crossing Erosion Control Project Q0209 [1600-2017-0033-R5; SPL-2017-00189-PJB]			0.00		2.15	0.00			0.01			0.13			0.36			0.10	Joint Corps & CDFW impact area 0.188 ac; CDFW only impact area 0.458; cumulative impact area being mitigated @ Manchester 0.646 ac. (NCCP/HCP ratios applied)
			0.00			0.00			0.01			0.13			0.36			0.10	
			0.00			0.00			0.01			0.13			0.36			0.10	
			0.00			0.00			0.01			0.13			0.36			0.10	
			0.00			0.00			0.01			0.13			0.36			0.10	
			0.00			0.00			0.01			0.13			0.36			0.10	
			0.00			0.00			0.01			0.13			0.36			0.10	
Totals		1.40	**0.00**	0.00	5.57	**0.00**	0.00	0.00	**0.01**	0.00	0.00	**0.13**	0.00	0.00	**0.36**	0.00	0.00	**0.10**	

NOTES
1 Expected Mitigation based on CEQA document(s)/assessment
2 Actual Mitigation is based on post construction surveys
3 Generally credits are reserved at CEQA project approval and debited when the Notice of Completion is issued.
4 Baccharis sarothroides dominated Diegan Coastal Sage Scrub called out separately to reflect more riparian nature of this typical upland community
5 Habitat types and acreages revised based on [Wetlands] Jurisdiction Delineation Report (AECOM, 10/19/2017)

SAN MIGUEL CONSERVATION BANK

BANK NAME:
San Miguel Conservation Bank
Bank Created on: 08/27/97
Beginning Total Balance: 1186 acres = 1186 credits.
Quad Name: Jamul Mountains
Location: 32, 41' N. x 116, 58' W.

CREDIT OWNER:
Don Chadwick
San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123
Phone: (858) 522-6758

MANAGER:
FWS Refuge
(619) 669-7295

EXHIBIT B

3/24/2003 **Assignment and Assumption Agreement signed between Emerald Properties and San Diego County Water Authority.**
Habitat Types: CAGN, CSS, chamise, mix chaparral, grassland, riparian scrub, freshwater marsh, seasonal ponds, Otay tarplant (Hemizonia conjugens).
Service Area: Western San Diego County. Available to mitigate cismontane impacts below 3,500 ft.
Restrictions: No coastal areas or coastal obligate species
Obligations: Owner will deposit $100,000 into endowment + $500 per each North parcel credit sold after first 140 credits have been sold;
[original owner has no obligation for the South Parcel]
BANKING ACTIVITY: 1,186 acres on Bank Property

			Mitigation Bank										
Date	**Buyer**	**Project Impacted**	**San Diego barrel cactus**	**Otay tarplant**	**Coastal California gnatcatcher**	**Tier I Perennial Grassland**	**Tier I Dry marsh/ Riparian scrub**	**Tier I Seasonal stock pond**	**Tier II Coastal sage scrub QCB host plant**	**Tier II Coastal sage scrub No QCB host plant**	**Tier III Southern mixed/chamise chaparral**	**Total Debited Credits**	**Available Credits (As-Built)**
		Beginning Credits (Density)**	**376**	**20,000 = 7.7 ac**	**55 pairs at 1 pr/21.74 acres (all habitats) or 56 pairs at 1pr/18.52 acres CSS**	**16.00**	**3.00**	**1.00**	77.54	**956.46**	**132.00**		**1,186.00**
						Credits Debited	**Credits Debited**	**Credits Debited**	**Credits Debited**	**Credits Debited**	**Credits Debited**		
8/27/1997	**Administered by Emerald Properties**												
7/28/1998	The Eastlake Company	Eastlake Communities								1.00		**1.00**	1,185.00
9/30/1998	Pacific Bay Properties	Rolling Hills Ranch								2.00		**2.00**	1,183.00
2/11/2000	Captain's Hill, Ltd	Captain's Hill								5.75		**5.75**	1,177.25
3/31/2000	Brian & Lisa Wier and Edward Barrett	Wier TPM								0.34		**0.34**	1,176.91
6/16/2000	Beazer Homes Holdings Corp.	Sunset Heights								10.56		**10.56**	1,166.35
7/12/2000	Pacific Bay Properties	Rolling Hills Ranch								30		**30.00**	1,136.35
7/13/2000	Pacific Bay Properties	Rolling Hills Ranch		20,000		7.70						**7.70**	1,128.65
5/4/2001	Williams Communications	Riverside/SD Fiber Optic								8.00		**8.00**	1,120.65
6/29/2001	Otay Mesa Generating Company	Otay Mesa Generating Project									31.80	**31.80**	1,088.85
6/30/2001	Otay Mesa Generating Company	Otay Mesa Generating Project								4.10		**4.10**	1,084.75
6/29/2001	San Diego County Water Authority	Emergency Storage Project								200.00		**200.00**	884.75
8/8/2001	Williams Communications									1.50		**1.50**	883.25
8/14/2001	Cingular Wireless									0.50		**0.50**	882.75
1/3/2002	Eastlake Company, LLC	Eastlake III								1.50		**1.50**	881.25
1/23/2002	San Diego County Water Authority	Emergency Storage Project								7.00		**7.00**	874.25
4/1/2002	CalPeak Power Border, LLC	CalPeak Power Project									0.50	**0.50**	873.75
4/1/2002	CalPeak Power Enterprise, LLC	CalPeak Power Project								0.30		**0.30**	873.45
4/1/2002	CalPeak Power Enterprise, LLC	CalPeak Power Project									0.20	**0.20**	873.25
4/18/2002	Metropolitan Transit Development Board	Mission Valley Project								9.60		**9.60**	863.65
5/28/2002	Rodney and Joey Schaefer	Schaefer TPM 20489								5.10		**5.10**	858.55
7/18/2002	William Jungman	Jungman Project								3.90		**3.90**	854.65
7/31/2002	Darmor Development Inc	Parkview Project								2.50		**2.50**	852.15
7/31/2002	Darmor Development Inc	Parkview Project									0.60	**0.60**	851.55
8/13/2002	Joan & George Hood	Heatherwood Hollow Project								0.50		**0.50**	851.05
8/14/2002	Joan & George Hood	Heatherwood Hollow Project									1.00	**1.00**	850.05
9/25/2002	CRV Escondido 68 LP	Jesmond Project								26.00		**26.00**	824.05
11/7/2002	Santa Fe Irrigation District	Raw Water Pipeline Project								3.20		**3.20**	820.85
3/24/2003	**Sub-total Credits Debited Prior to Bank's Assignment**		**0**	**20,000**	**0**	**7.70**	**0.00**	**0.00**	**0.00**	**323.35**	**34.10**	**365.15**	820.85

3/24/2003	**Administered by San Diego County Water Authority for its projects**					**Reserved Credits**	**Actual Debited Credits**	**Reserved Credits**	**Actual Debited Credits**	**Reserved Credits**	**Actual Debited Credits**	**Reserved Credits**	**Actual Debited Credits**	**Reserved Credits**	**Actual Debited Credits**	**Reserved Credits**	**Actual Debited Credits**	-----	-----
	Project Name	**Project Impacted**	**Const. Status**																
11/24/2009	N0401-Carryover Storage & SV Dam Rais	Water Authoriity	11-09 - 05-16											220.72	209.0			**209.0**	611.86
11/30/2010	C0701 Mission Trails Tunnel	Water Authoriity	10-08 - 11-10			0.05	0.04											**0.04**	611.82
1/1/2014	K0304 - Pipeline 3 Reline offsite	Water Authoriity	01-14 - 02-15			0.10	0.28											**0.28**	611.54

SAN MIGUEL CONSERVATION BANK

6/26/2014	C0721 Nob Hill Pipeline Improvement	Water Authoriity	10-15 - 04-17											2.08	1.42			**1.42**	610.12
12/31/2017	R0207 P4 Reline Lk Murray to Alvardo W	Water Authoriity	10-15 - 05-17												0.78			**0.78**	609.34
6/6/2018	**Randy Walker**	Escondido Case # ENV 17-0010	n/a												1.09			**1.09**	608.25
10/31/2019	Q0312 Helix 2 FCF decommissioning/rep	Water Authoriity	12-17 - 5-18												0.05			**0.05**	608.20
12/31/2018	N0401- CSP (Amended BO1)	Water Authoriity	11-09 - 05-16										8.90					**8.90**	599.30
12/31/2018	N0401- CSP addl. QCB	Water Authoriity	11-09 - 05-16										16.50					**16.50**	582.80
Reserved	**C0703** MTRP FCF II & Vent Demo	Water Authoriity	pending											1.14				**0.00**	582.80
Reserved	N0504 Hauck Mesa FRS	Water Authoriity	pending											0.08				**0.00**	582.80
5/8/2020	**New Pointe Investment 44, LLC**	City of Escondido	n/a											0.14	0.14			**0.14**	582.66
3/15/2021	**Appolo Senior Care**	City of Escondido	n/a											0.03				**0.00**	582.66
2/17/2021	Q0204 North 1st Aqud. Rehab	Water Authoriity	01-19-01-21												0.03			**0.03**	582.63
																			582.63
																			582.63
																			582.63
																			582.63
			TOTAL CREDITS DEBITTED :	0	20,000	0	N/A	8.02	N/A	0.00	N/A	0.00	N/A	25.40	N/A	535.85	N/A	34.10	**603.37**	
			CREDITS AVAILABLE:	**376**	**0**	**55**		**7.98**		**3.00**		**1.00**		**52.14**		**420.61**		**97.90**	**582.63**	**582.63**
			Current Credits Reserved				0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	1.39	N/A	0.00	N/A	1.39	N/A
			Projected Credits Available				7.98	N/A	3.00	N/A	1.00	N/A	52.14	N/A	419.22	N/A	97.90	N/A	529.10	

*Credit exchanges are to be done through mitigation bank reductions based on resource density of populations on the Acquisition Parcel.

Density **The density of resources is presumed to be non-separable from the acreage on which resources occur; thus, where a mitigation need is defined by acreage, individual resource count, or both, the greatest requirement will govern the credit reduction (e.g.,

Otay tarplant (*Hemizonia conjugens*) 481 plants/grassland acre

900 plants/appropriate habitat acre

San Diego barrel cactus (*Ferocactus viridescens*) 160 plants/appropriate habitat acre

0.046 pair/acre (all habitats)

Coastal California gnatcatcher (*Polioptila californica californic* 0.054 pair/acre (CSS only)

Reserved in a project title means a project has been approved (CEQA complete), but no Notice To Proceed issued.

fn: San Miguel Mitigation Bank ledger_12-31-2018.xlsx

Appendix B

Summary of Previous NCCP/HCP
Revisions, Amendments, and Clarifications

Summary of Previous NCCP/HCP Revisions, Amendments, and Clarifications

Reporting Period	Update Type (Revision/Amendment/ Clarification)	Summary
2012-2013	Clarification	The following clarifications were made following adoption of the Plan (2012-2013 reporting period): ▪ Take associated with pesticide use is not covered by Plan. ▪ Up to 5 acres of vernal pool-watershed may be impacted from future CIP projects but these 5 acres were not included in Table 5-3 of the Plan and have been added to the "wetland" category for a total of 6.5 acres. ▪ Habitat restoration work proposed for the 60-acre Tijuana River Valley HMA is to be addressed through a separate BO. ▪ The Wildlife Agencies have no objection to an arborist inspecting nests in non-native trees (refer to Appendix I of the 2012-2013 NCCP/HCP Annual Report (Water Authority and AECOM 2014). ▪ Credits for the original 500-acre "Acquisition Parcel" for the San Miguel Conservation Bank were assigned to the original bank owner to mitigate and are not available to the Water Authority. ▪ The term "occupied" referring to Otay tarplant (*Deinandra conjugens*) and Dulzura pocket mouse (*Chaetodipus californicus femoralis*) habitat was clarified. ▪ Language regarding California adolphia (*Adolphia californica*) was modified. ▪ Some conditions of coverage for San Diego button-celery (*Eryngium aristulatum* var. *parishii*), San Diego goldenstar (*Muilla clevelandii*), and felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*) were modified or deleted. ▪ Construction buffer requirements for Harbison's dun skipper (*Euphyes vestris harbisoni*), Hermes copper butterfly (*Lycaena hermes*), and Quino checkerspot butterfly habitat (*Euphydryas editha quino*) were specified. ▪ Impacts to habitat in Riverside County will be mitigated in Riverside County. ▪ The Water Authority will be responsible for reporting capture and relocation efforts for Hermes copper butterfly, Riverside fairy shrimp (*Streptocephalus woottoni*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), arroyo toad (*Anaxyrus californicus*), western spadefoot toad (*Spea* [=Scaphiopus] *hammondii*), northern red-diamond rattlesnake (*Crotalus ruber*), Southern Pacific pond turtle (*Emys marmorata*), Stephens' kangaroo rat (*Dipodomys stephensi*), Dulzura kangaroo rat (*Dipodomys simulans*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), northwestern San Diego pocket mouse *Chaetodipus fallax fallax*), San Diego desert woodrat (*Neotoma lepida intermedia*), and southern grasshopper mouse (*Onychomys torridus ramona*). ▪ Construction sites near known locations of burrowing owls will be kept clear of rubble and pipes.

Summary of Previous NCCP/HCP Revisions, Amendments, and Clarifications

Reporting Period	Update Type (Revision/Amendment/ Clarification)	Summary
		▪ Use of goats for weed abatement or fuel management will be addressed through a minor amendment. ▪ Clarifications were made to the Incidental Take Permit (#TE03216A) and Record of Decision, including modification to the description of water treatment plants, a discrepancy regarding burrowing owl roosting season, and wording regarding purchase of conservation bank credits and cost of some land acquisition.
2014	NA	None
2015	NA	None
2016	NA	None
2017	NA	None
2018	NA	None
2019	NA	None
2020	NA	None
2021	NA	None

Appendix C

Impacts to Covered Wildlife Species Resulting from CIP Covered Activities

Covered Wildlife Species		Suitable Habitat Impacts[a]													
		2021 Reporting Period - Projected Impacts (Acres)						Totals for Current Period (Acres)			Cumulative Impacts All Reporting Periods (Acres)			Incidental Take Limit (Acres)[b]	Allowable Incidental Take Remaining (Acres)[c]
		Mission Trails Flow Regulatory Structure II and Flow Control Facility Project (C0603)			Hauck Mesa Storage Reservoir (N0504)										
Scientific Name	Common Name	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)		
Invertebrates															
Branchinecta sandiegonensis	San Diego fairy shrimp	0	0	0	0	0	0	0	0	0	0	0	0	5.00	5.00
Streptocephalus woottoni	Riverside fairy shrimp	0	0	0	0	0	0	0	0	0	0	0	0	5.00	5.00
Euphyes vestris harbisoni	Dun skipper	0	0	0	0	0	0	0	0	0	0	0	0	310.00	310.00
Lycaena hermes	Hermes copper butterfly	0	0	0	0	0	0	0	0	0	0	0	0	239.00	239.00
Euphydryas editha quino	Quino checkerspot butterfly	0	0	0	0	0	0	0	0	0	0	0	0	5.00	5.00
Reptiles															
Bufo californicus	Arroyo toad (Breeding)	0	0	0	0	0	0	0	0	0	0	0	0	44.90	44.90
Spea (Scaphiopus) hammondii	Western spadefoot	0.11	0	1.46	0	0	0	0.11	0	1.46	0.11	0	1.46	258.20	258.09
Actinemys marmorata pallida	Southern Pacific (Southwestern) pond turtle	0	0	0	0	0	0	0	0	0	0	0	0	52.90	52.90
Eumeces skiltonianus interparietalis	Coronado skink	1.65	0	19.21	0	0	0	1.65	0	19.21	1.65	1.60	28.70	320.40	317.15
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	1.54	0	17.77	0.21	0	0.68	1.75	0	18.45	3.33	5.80	30.63	282.90	273.77
Aspidoscelis tigris stejnegeri	Coastal (western) whiptail	1.54	0	17.76	0.21	0	0.68	1.75	0	18.44	1.83	4.52	26.24	238.80	232.45
Coleonyx variegates abbottii	San Diego banded gecko	0	0	0	0	0	0	0	0	0	0	0	0	238.80	238.80
Phrynosoma coronatum blainvillii	Coast (San Diego horned) lizard	1.52	0	8.75	0	0	0	1.52	0	8.75	1.52	1.10	14.99	313.80	311.18
Lichanura trivirgata roseofusca	Coastal rosy boa	1.54	0	17.76	0	0	0	1.54	0	17.76	1.54	1.10	23.30	264.10	261.46
Diadophis punctatus similis	San Diego ring-neck snake	1.65	0	19.22	0	0	0	1.65	0	19.22	1.73	2.92	24.19	320.40	315.75
Crotalus ruber ruber	(Northern) red diamond rattlesnake	1.52	0	8.75	0	0	0	1.52	0	8.75	1.60	2.42	15.12	238.80	234.78
Birds															
Athene cunicularia hypugaea	Western burrowing owl	0	0	0	0	0	0	0	0	0	0	0	2.35	56.30	56.30
Empidonax traillii extimus	Southwestern willow flycatcher	0	0	0	0	0	0	0	0	0	0	0	0	45.00	45.00
Lanius ludovicianus	Loggerhead shrike	0	0	0	0	0	0	0	0	0	0	0	3.77	913.40	913.40
Vireo belli pusillus	Least Bell's vireo	0	0	0	0	0	0	0	0	0	0	0	0	45.00	45.00
Eremophila alpestris californica	California horned lark	0.11	0	1.45	0	0	0	0.11	0	1.45	0.11	0	4.03	674.60	674.49
Campylorhynchus brunneicapillus sandiegensis	San Diego cactus wren	0	0	0	0	0	0	0	0	0	0	0	1.96	150.50	150.50
Polioptila californica californica	Coastal California gnatcatcher	1.51	0	8.66	0	0	0	1.51	0	8.66	2.32	5.65	23.22	150.50	142.53
Dendroica petechia brewsteri	Yellow warbler	0	0	0	0	0	0	0	0	0	0.56	0	0.132	45.00	44.44
Icteria virens	Yellow-breasted chat	0	0	0	0	0	0	0	0	0	0.77	0	0.25	45.00	44.23
Amphispiza belli belli	Bell's sage sparrow	0	0	0	0	0	0	0	0	0	0.08	2.42	3.99	238.80	236.30
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	1.51	0	8.66	0	0	0	1.51	0	8.66	2.32	4.92	19.22	238.80	231.56
Ammodramus savannarum	Grasshopper sparrow	1.65	0	19.21	0	0	0	1.65	0	19.21	1.65	0.5	19.81	56.30	54.15
Agelaius tricolor	Tricolored blackbird	0	0	0	0	0	0	0	0	0	0	0	0	6.50	6.50
Mammals															
Lepus californicus bennettii	San Diego black-tailed jackrabbit	0.11	0	1.46	0	0	0	0.11	0	1.46	0.11	4.6	4.89	296.00	291.29
Dipodomys stephensi	Stephens' kangaroo rat	0	0	0	0	0	0	0	0	0	0	0	0	674.60	674.60
Perognathus longimembris brevinasus	Los Angeles pocket mouse	0	0	0	0	0	0	0	0	0	0	0	0	258.00	258.00

Covered Wildlife Species		Suitable Habitat Impacts[a]													
		2021 Reporting Period - Projected Impacts (Acres)						Totals for Current Period (Acres)			Cumulative Impacts All Reporting Periods (Acres)			Incidental Take Limit (Acres)[b]	Allowable Incidental Take Remaining (Acres)[c]
		Mission Trails Flow Regulatory Structure II and Flow Control Facility Project (C0603)			Hauck Mesa Storage Reservoir (N0504)										
Scientific Name	Common Name	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)		
Chaetodipus californicus femoralis	Dulzura pocket mouse	0	0	0	0	0	0	0	0	0	0	1.6	1.38	10.00	8.40
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	1.65	0	19.21	0.21	0	0.68	1.86	0	19.89	1.86	0	28.2	295.10	293.24
Onychomys torridus ramona	Southern grasshopper mouse	0	0	0	0	0	0	0	0	0	0	0	0	301.60	301.60
Neotoma lepida intermedia	San Diego woodrat	1.54	0	17.76	0.21	0	0.68	1.75	0	18.44	1.75	1.1	25.91	238.80	235.95
Felis concolor	Mountain lion	0	0	0	0	0	0	0	0	0	0	0	3.87	365.40	365.40

Notes:

[a] Suitable habitat based on the Covered Species Habitat Analysis in Appendix B of the NCCP/HCP. For Quino checkerspot butterfly, suitable habitat based on area determined to be occupied by the species.

[b] Incidental take limits for Covered Species' suitable habitat based on limits provided in the Water Authority's 10(a)(1)(B) incidental take permit.

[c] Permanent and repeated temporary impacts deducted from incidental take limits to determine allowable incidental take remaining for Covered Species' suitable habitat, unless otherwise noted.

Appendix D

Impacts to Covered Plant Species Resulting from CIP Covered Activities

Covered Plant Species		Suitable Habitat Impacts[a]													
		2021 Reporting Period - Projected Impacts (Acres)													
		Mission Trails Flow Regulatory Structure II and Flow Control Facility Project (C0603)			Hauck Mesa Storage Reservoir (N0504)			Totals for Current Period (Acres)			Cumulative Impacts All Reporting Periods (Acres)			Incidental Take Limit (Acres)[b]	Allowable Incidental Take Remaining (Acres)[c]
Scientific Name	Common Name	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)	Permanent	Temporary (Repeated)	Temporary (One-time)		
Acanthomintha ilicifolia	San Diego thorn-mint	0	0	0	0	0	0	0	0	0	0	0	0	195.00	195.00
Adolphia californica	California adolphia	0	0	0	0	0	0	0	0	0	0	1.10	0.90	162.00	160.90
Ambrosia pumila	San Diego ambrosia	0	0	0	0	0	0	0	0	0	0	0	0	289.00	289.00
Baccharis vanessae	Encinitas baccharis	0	0	0	0	0	0	0	0	0	0	0	0	36.00	36.00
Brodiaea filifolia	Thread-leaved brodiaea	0	0	0	0	0	0	0	0	0	0	0	0	62.00	62.00
Brodiaea orcuttii	Orcutt's brodiaea	0	0	0	0	0	0	0	0	0	0	0	0	6.00	6.00
Calochortus dunnii	Dunn's mariposa lily	0	0	0	0	0	0	0	0	0	0	0	0	78.00	78.00
Ceanothus cyaneus	Lakeside ceanothus	0	0	0	0	0	0	0	0	0	0	0	0	78.00	78.00
Centromadia parryi ssp. *australis*	Southern tarplant	0	0	0	0	0	0	0	0	0	0	0	0	6.00	6.00
Centromadia pungens ssp. *laevis*	Smooth tarplant	0	0	0	0	0	0	0	0	0	0	0	0	57.00	57.00
Deinandra conjugens	Otay tarplant	0	0	0	0	0	0	0	0	0	0	0	0	10.00	10.00
Dudleya variegata	Variegated dudleya	0	0	0	0	0	0	0	0	0	0	1.60	4.97	274.00	272.40
Dudleya viscida	Sticky-leaved dudleya	0	0	0	0	0	0	0	0	0	0	0	0	240.00	240.00
Eryngium aristulatum var. *parishii*	San Diego button-celery	0	0	0	0	0	0	0	0	0	0	0	0	5.00	5.00
Ferocactus viridescens	San Diego barrel cactus	0	0	0	0	0	0	0	0	0	0	1.10	1.70	162.00	160.90
Iva hayesiana	San Diego marsh-elder	0	0	0	0	0	0	0	0	0	0.03	0	0.37	14.00	13.97
Monardella hypoleuca ssp. *lanata*	Felt-leaved monardella	0	0	0	0	0	0	0	0	0	0	0	0	78.00	78.00
Monardella viminea	Willowy monardella	0	0	0	0	0	0	0	0	0	0	0	0	38.00	38.00
Muilla clevelandii	San Diego goldenstar	0	0	0	0	0	0	0	0	0	0	0	0	240.00	240.00
Navarretia fossalis	Spreading navarretia	0	0	0	0	0	0	0	0	0	0	0	0	5.00	5.00
Nolina cismontana	Chaparral nolina	0	0	0	0	0	0	0	0	0	0	0	0	162.00	162.00
Pogogyne abramsii	San Diego mesa mint	0	0	0	0	0	0	0	0	0	0	0	0	5.00	5.00
Pogogyne nudiuscula	Otay Mesa mint	0	0	0	0	0	0	0	0	0	0	0	0	5.00	5.00
Quercus dumosa	Nuttall's scrub oak	0	0	0	0	0	0	0	0	0	0	0	0	78.00	78.00
Salvia munzii	Munz's sage	0	0	0	0	0	0	0	0	0	0	1.10	0.90	240.00	238.90
Tetracoccus dioicus	Parry's tetracoccus	0	0	0	0	0	0	0	0	0	0	0	0	28.00	28.00

Notes:

[a] Suitable habitat based on the Covered Species Habitat Analysis in Appendix B of the NCCP/HCP.

[b] Incidental take limits for Covered Species' suitable habitat based on anticipated impacts reported for each species in CDFW's Findings of Fact for NCCP Permit 2810-2011-001-05.

[c] Permanent and repeated temporary impacts deducted from incidental take limits to determine allowable incidental take remaining for Covered Species' suitable habitat, unless otherwise noted.

Appendix E

Measures Implemented for Capital Improvement Program (CIP) Covered Activities

Project Name	Tracking Number	General Avoidance and Minimization Measures (AMMs)												NCCP/HCP Compliance Guidelines						Species-Specific AMMs for Covered Species																											
		Environmental Surveyor	Preactivity Survey Form (PSF)	Field Personnel Education Training	Field Personnel (and Contractor) Responsibilities	Planning and Coordination	Facility Siting	Pipeline Siting	Existing Pipeline Relining	Design and Construction Controls	Stormwater Best Management Practices	New Access Roads	Cleanup	General Conditions for Coverage	Upland Compliance Guidelines	Wetland Compliance Guidelines	Vernal Pools Compliance Guidelines	Narrow Endemics Compliance Guidelines	Avian Breeding Season Compliance Guidelines	Survey Requirements for Covered Species	Buffer Requirements for Covered Species	Encinitas Baccharis AMMs	Lakeside Ceanothus AMMs	Otay Tarplant AMMs	Variegated Dudleya AMMs	Felt-leaved Monardella AMMs	Willowy Monardella AMMs	San Diego Goldenstar AMMs	Harbison's Dun Skipper AMMs	Quino Checkerspot Butterfly AMMs	Hermes Copper Butterfly AMMs	All Covered Birds AMMs	Coastal California Gnatcatcher AMMs	Burrowing Owl AMMs	Southwestern Willow Flycatcher AMMs	Least Bell's Vireo AMMs	Tri-colored Blackbird AMMs	Southwestern Pond Turtle AMMs	Arroyo Toad AMMs	Western Spadefoot Toad AMMs	Small Mammal AMMs	San Diego Desert Woodrat AMMs	General AMMs for Species Not Documented in HMAs
Mission Trails Flow Regulatory Structure II and Flow Control Facility Project	C0603	x	x	x	x	x			x	x	x		x	x	x	x	x	x	x	x											x	x							x	x	x	x	
Hauck Mesa Storage Reservoir Project	N0504	x	x	x	x	x				x	x		x	x	x				x	x											x									x	x	x	

Appendix F

Measures Implemented for Operations and Maintenance (O&M) Covered Activities

Project Name	Tracking Number	General Avoidance and Minimization Measures (AMMs)												NCCP/HCP Compliance Guidelines						Species-Specific AMMs for Covered Species																							
		Environmental Surveyor	Preactivity Survey Form (PSF)	Field Personnel Education Training	Field Personnel (and Contractor) Responsibilities	Planning and Coordination	Facility Siting	Pipeline Siting	Existing Pipeline Relining	Design and Construction Controls	Stormwater Best Management Practices	New Access Roads	Cleanup	General Conditions for Coverage	Upland Compliance Guidelines	Wetland Compliance Guidelines	Vernal Pools Compliance Guidelines	Narrow Endemics Compliance Guidelines	Avian Breeding Season Compliance Guidelines	Survey Requirements for Covered Species	Buffer Requirements for Covered Species	Encinitas Baccharis AMMs	Lakeside Ceanothus AMMs	Otay Tarplant AMMs	Variegated Dudleya AMMs	Felt-leaved Monardella AMMs	Willowy Monardella AMMs	San Diego Goldenstar AMMs	Harbinson's Dun Skipper AMMs	Quino Checkerspot Butterfly AMMs	Hermes Copper Butterfly AMMs	All Covered Birds AMMs	Coastal California Gnatcatcher AMMs	Burrowing Owl AMMs	Southwestern Willow Flycatcher AMMs	Least Bell's Vireo AMMs	Tri-colored Blackbird AMMs	Southwestern Pond Turtle AMMs	Arroyo Toad AMMs	Western Spadefoot Toad AMMs	Small Mammal AMMs	San Diego Desert Woodrat AMMs	General AMMs for Species Not Documented in HMAs
Routine Maintenance Activities	various			x																																					
March 2021 Draindown	R0307		x																																						
May 2021 Draindown	R0307		x																																						
September 2021 Draindown	N0504		x																																						
November 2021 Draindown	101-15201		x																																						
ROW Tree Removal Projects	various		x																x																						

Appendix G

Vegetation Communities/
Land Cover Types and Tier Levels

Vegetation Communities/Land Cover Types and Tier Levels

San Diego County Water Authority Subregional NCCP/HCP[1]		
Vegetation Tier	**Vegetation Community / Land Cover Type**	**Subcommunities**
Upland Habitats		
I	Chaparral I	Northern Mixed Chaparral (Mafic)
		Southern Maritime Chaparral
		Southern Mixed Chaparral (Mafic)
	Coastal	Open Beach
		Southern Foredunes
	Coniferous Forest I	Southern Interior Cypress Forest
		Torrey Pine Forest
	Grasslands I	Native Grassland (Valley and Foothill Needle Grassland)
	Oak Woodland and Forest	Black Oak Forest
		Black Oak Woodland
		Coast Live Oak Forest
		Coast Live Oak Woodland
		Englemann Oak Forest (Dense Englemann Oak Woodland)
		Englemann Oak Woodland (Open Englemann Oak Woodland)
		Mixed Oak Woodland
	Coastal Sage-Scrub I	Alluvial Fan Scrub
		Cactus Scrub
		Maritime Succulent Scrub
		Riversidean Alluvial Fan Scrub
		Southern Coastal Bluff Scrub
II	Coniferous Forest II	Big Cone Spruce- Canyon Oak Forest
		Mixed Coniferous Forest
	Coastal Sage-Scrub II	Coastal Sage-Chaparral Scrub
		Coastal Sage Scrub (Diegan)
		Coastal Sage Scrub (Inland)
		Flat-topped Buckwheat Scrub
		Riversidean Sage-Scrub
	Sage Scrub, Montane/ Trans-montane	Big Sagebrush Scrub (Great Valley)
III	Chaparral III	Ceanothus crassifolius Chaparral
		Chamise Chaparral (Granitic Chamise chaparral)
		Interior Live Oak Chaparral
		Northern Mixed Chaparral
		Northern Mixed Chaparral (Granitic)
		Scrub Oak Chaparral
		Southern Mixed Chaparral
		Southern Mixed Chaparral (Granitic)
	Chaparral, Montane/ Trans-montane	Montane Chaparral
		Redshank Chaparral

Vegetation Communities/Land Cover Types and Tier Levels

San Diego County Water Authority Subregional NCCP/HCP[1]		
Vegetation Tier	**Vegetation Community / Land Cover Type**	**Subcommunities**
	Grasslands III	Non-Native Grassland
IV	Agricultural	General Agriculture
		Extensive Agriculture (Row Crops, Pastures)
		Intensive Agriculture (Dairies, Nurseries, Chicken Ranches)
		Orchards and Vineyards
	Disturbed/Developed	Bare Ground
		Disturbed
		Urban/Developed Land
	Exotic Landscapes	Eucalyptus/Non-native woodland
		Ornamental
Wetland Habitats		
I	Aquatic, Marine I	Saltpan/Mudflats
	Riparian I	Southern Arroyo Willow Riparian Forest
		Southern Coast Live Oak Riparian Forest
		Southern Cottonwood-Willow Riparian Forest
		Southern Sycamore Woodland
		Southern Sycamore-alder Riparian Woodland
		White Alder Riparian Forest
	Wetland I	Alkali wetlands (Alkali Seep, Alkali Marsh, Cismontane Alkali Marsh)
		Alkali Vernal Pools
		Montane Meadow
		San Diego Mesa Claypan Vernal Pools
		San Diego Mesa Hardpan Vernal Pools
		Southern Coastal Salt Marsh
		Vernal Lake
II	Aquatic, Freshwater II	Open Freshwater (Freshwater, Open Water, Water)
	Aquatic, Marine II	Open Saltwater (Bays, Estuarine, Subtidal)
	Riparian II	Arrowweed Scrub
		Mule Fat Scrub
		Southern Willow Scrub
	Wetland II	Freshwater Meadow or Seep
		Freshwater Marsh (Coastal and Valley Freshwater Marsh, Emergent Wetland)
III	Aquatic, Freshwater III	Non-vegetated Floodplain or Channel
	Riparian III	Arundo Scrub
		Tamarisk Scrub
	Wetland III	Wetland (Disturbed)

Notes:

[1] Consistent with Table 6-5 of the SDCWA NCCP/HCP, October 2010

Appendix H

Covered Species Status By HMA

Covered Species Status by HMA

Scientific Name	Common Name	Crestridge HMA			San Miguel HMA			Rancho Cañada HMA			San Luis Rey River HMA			Manchester HMA		
		Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions
Covered																
Plants																
Acanthomintha ilicifolia	San Diego thornmint		x	x												
Adolphia californica	California adolphia				x											
Allium munzii	Munz's onion															
Ambrosia pumila	San Diego ambrosia															
Baccharis vanessae	Encinitas baccharis															
Brodiaea filifolia	Thread-leaved brodiaea															
Brodiaea orcuttii	Orcutt's brodiaea															
Calochortus dunnii	Dunn's mariposa lily					x										
Ceanothus cyaneus	Lakeside ceanothus	X							x							
Centromadia parryi ssp. *australis*	Southern tarplant															
Centromadia pungens ssp. *laevis*	Smooth tarplant															
Deinandra conjugens	Otay tarplant				x											
Dudleya variegate	Variegated dudleya				x											
Dudleya viscida	Sticky-leaved dudleya															
Eryngium aristulatum var. *parishii*	San Diego button-celery															
Ferocactus viridescens	San Diego barrel cactus				x											
Iva hayesiana	San Diego marsh-elder				x											
Monardella hypoleuca ssp. *lanata*	Felt-leaved monardella															
Monardella viminea	Willowy monardella															
Muilla clevelandii	San Diego goldenstar				x											
Navarretia fossalis	Spreading navarretia															
Nolina cismontana	Chaparral nolina															
Pogogyne abramsii	San Diego mesa mint															
Pogogyne nudiuscula	Otay Mesa mint															
Quercus dumosa	Nuttall's scrub oak															
Salvia munzii	Munz's sage				x											
Tetracoccus dioicus	Parry's tetracoccus								x							

Covered Species Status by HMA

Scientific Name	Common Name	Crestridge HMA			San Miguel HMA			Rancho Cañada HMA			San Luis Rey River HMA			Manchester HMA		
		Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions
Invertebrates																
Branchinecta sandiegonensis	San Diego fairy shrimp															
Streptocephalus woottoni	Riverside fairy shrimp															
Euphyes vestris harbisoni	Harbison's dun skipper								x							
Lycaena hermes	Hermes copper butterfly	x			x											
Euphydryas editha quino	Quino checkerspot butterfly				x											
Amphibians/Reptiles																
Bufo californicus	Arroyo toad							x								
Spea (=Scaphiopus) hammondii	Western spadefoot	x			x											
Actinemys marmorata pallida	Southern Pacific (Southwestern) pond turtle								x			x				
Eumeces skiltonianus interparietalis	Coronado skink	x				x		x								
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail				x			x								
Aspidoscelis tigris stejnegeri	Coastal (western) whiptail		x		x			x								
Coleonyx variegates abbottii	San Diego banded gecko								x							
Phrynosoma coronatum blainvillii	Coast (San Diego) horned lizard		x		x			x								
Lichanura trivirgata roseofusca	Coastal rosy boa				x				x							
Diadophis punctatus similis	San Diego ring-neck snake								x							
Crotalus ruber	(Northern) red diamond rattlesnake		x		x				x							
Birds																
Athene cunicularia hypogea	Western burrowing owl		x													

Covered Species Status by HMA

Scientific Name	Common Name	Crestridge HMA			San Miguel HMA			Rancho Cañada HMA			San Luis Rey River HMA			Manchester HMA		
		Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions
Empidonax traillii extimus	Southwestern willow flycatcher															
Lanius ludovicianus	Loggerhead shrike		x		x											
Vireo belli pusillus	Least Bell's vireo								x			x				
Eremophila alpestris californica	California horned lark				x											
Campylorhynchus brunneicapillus sandiegensis	San Diego cactus wren					x										
Polioptila californica californica	Coastal California gnatcatcher	x			x									x		
Dendroica petechia brewsteri	Yellow warbler							x				x			x	
Icteria virens	Yellow-breasted chat				x				x			x				
Amphispiza belli belli	Bell's sage sparrow	x			x											
Aimophila rufuceps canescens	Southern California rufous-crowned sparrow	x			x			x								
Ammodramus savannarum	Grasshopper sparrow				x											
Agelaius tricolor	Tricolored blackbird				x											
Mammals																
Lepus californicus bennettii	San Diego black-tailed jack rabbit	x			x											
Dipodomys stephensi	Stephens' kangaroo rat															
Perognathus longimembris brevinasus	Los Angeles pocket mouse															
Chaetodipus californicus femoralis	Dulzura pocket mouse	x			x											
Chaetodipus fallax	Northwestern San Diego pocket mouse	x														
Onychomys torridus ramona	Southern grasshopper mouse		x			x			x							
Neotoma lepida intermedia	San Diego desert woodrat				x			x								
Felis concolor	Mountain lion		x		x				x							

Covered Species Status by HMA

Scientific Name	Common Name	Crestridge HMA			San Miguel HMA			Rancho Cañada HMA			San Luis Rey River HMA			Manchester HMA		
		Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions
Major Amendment Species																
Orcuttia californica	California Orcutt grass															
Branchinecta lynchi	Vernal pool fairy shrimp															
Not Covered																
Plants																
Arctostaphylos rainbowensis	Rainbow manzanita															
Ceanothus verrucosus	Wart-stemmed ceanothus															
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly															
Cordylanthus orcuttianus	Orcutt's bird's-beak															
Cylindropuntia californica var. *californica*	Snake cholla															
Ericameria palmeri ssp. *palmeri*	Palmer's goldenbush															
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	x														
Hazardia orcuttii	Orcutt's hazardia															
Lepechinia cardiophylla	Heart-leaved pitcher sage															
Myosurus minimus ssp. *apus*	Little mousetail															
Navarretia prostrata	Prostrate navarretia															
Packera ganderi	Gander's ragwort															
Quercus engelmannii	Engelmann oak							x								
Satureja chandleri	San Miguel savory					x			x							
Reptiles																
Thamnophis hammondii	Two-striped garter snake				x				x							

Covered Species Status by HMA

Scientific Name	Common Name	Crestridge HMA			San Miguel HMA			Rancho Cañada HMA			San Luis Rey River HMA			Manchester HMA		
		Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions	Documented Presence	Suitable Habitat	Management Actions
Birds																
Pelecanus occidentalis californicus	California brown pelican															
Elanus leucurus	White-tailed kite				x			x								
Circus cyaneus	Northern harrier				x											
Aquila chrysaetos	Golden eagle	x				x										
Haliaeetus leucocephalus	Bald eagle															
Accipiter cooperii	Cooper's hawk	x			x			x								
Falco peregrinus anatum	American peregrine falcon				x											
Asio Otis	Long-eared owl								x			x				

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Appendix I

Summary of 2021 Routine Maintenance Agreement Covered Activities

San Diego County Water Authority - Lake and Streambed Alteration Routine Maintenance Agreement
Culverts and Arizona Crossings

Facility Name/ID	ROW Zone	Pipeline	Location	Creek Name (if within 50 feet of culvert)	Watershed	Latitude	Longitude	Structure Material	Culvert Length (Linear Feet)	Culvert Diameter (Square Inches)	Flow Rate	Priority	Age	Condition	Maintenance Frequency	Required Maintenance	Environmental Setting (Existing Conditions 25-foot Radius) (Acres)[1]							Annual Reporting (2021)							
																	Aquatic/Riparian			Upland											
																	TIER I	TIER II	TIER III	TIER I	TIER II	TIER III	TIER IV	Previous Year Maintained	Maintained in Current Year? (Y/N)	Work within Channel Bed/Bank? (Y/N)[2]	"Substantial" Maintenance Activity per CFGC? (Y/N)[3]	Activities Contained Within Baseline Maint. Limits? (Y/N)[4]	If Applicable, Area Maintained Outside Baseline Limits (sq. ft.)	Maintenance Agreement Fee Required? (Y/N)
A1N-C01	A1N	1A	Point of Delivery		SAN LUIS REY	33.35268	-117.113084	STEEL	45	18	Seasonal	Low	15	Good	Yearly	Remove weed and sediment					0.045			-	Y	Y	N	Y	N/A	N
A1N-C02	A1N	1A	LUCIOS HILL		SAN LUIS REY	33.342376	-117.110733	GALVANIZED	26	12	Seasonal	Low	15	Good	Yearly	Remove weed and sediment					0.045			-	Y	Y	N	Y	N/A	N
A1N-C03	A1N	1A	LUCIOS HILL		SAN LUIS REY	33.341168	-117.110269	PLASTIC	36	18	Seasonal	Low	15	Good	Yearly	Remove weed and sediment					0.045			-	Y	Y	N	Y	N/A	N
A1N-C04	A1N	1A	COUSER CANYON		SAN LUIS REY	33.328807	-117.108123	PLASTIC	36	12	Seasonal	Low	15	Good	Yearly	Remove weed and sediment					0.045			-	Y	Y	N	Y	N/A	N
A1N-C05	A1N	1A	COUSER CANYON		SAN LUIS REY	33.328276	-117.107911	PLASTIC	42	18	Seasonal	Low	15	Good	Yearly	Remove weed and sediment					0.045			-	Y	Y	N	Y	N/A	N
A1N-C06	A1N	1A	COUSER CANYON		SAN LUIS REY	33.327488	-117.107673	GALVANIZED	23	12	Seasonal	Low	15	Good	Yearly	Remove weed and sediment							0.045	-	Y	Y	N	Y	N/A	N
A1N-C07	A1N	1A	COUSER CANYON		SAN LUIS REY	33.294093	-117.087867	CONCRETE	22	18	Seasonal	Low	10	Good	Yearly	Remove weed and sediment	0.022				0.023			-	Y	Y	N	Y	N/A	N
A1N-C08	A1N	1A	GOODEN RANCH		SAN LUIS REY	33.291573	-117.089999	GALVANIZED	23	14	Seasonal	Low	20	Good	Yearly	Remove weed and sediment	0.040				0.006			-	Y	Y	N	Y	N/A	N
A1N-C09	A1N	1A	GOODEN RANCH VC 1A&B		SAN LUIS REY	33.291194	-117.090536	GALVANIZED	20	16	Seasonal	Low	20	Good	Yearly	Remove weed and sediment	0.044				0.001			-	Y	Y	N	Y	N/A	N
A1N-C10	A1N	1A	GOODEN RANCH		SAN LUIS REY	33.28976	-117.091945	GALVANIZED	20	15	Seasonal	Low	20	Good	Yearly	Remove weed and sediment	0.045							-	Y	Y	N	Y	N/A	N
A1N-C11	A1N	1A	GOODEN RANCH S OF VC1A&B		SAN LUIS REY	33.287494	-117.093555	PLASTIC	25	18	Seasonal	Low	1	Good	Yearly	Remove weed and sediment					0.045			-	Y	Y	N	Y	N/A	N
A1N-C12	A1N	1A	GOODEN RANCH S OF VC1A&B		SAN LUIS REY	33.286685	-117.093177	PLASTIC	26	12	Seasonal	Low	1	Good	Yearly	Remove weed and sediment					0.045			-	Y	Y	N	Y	N/A	N
A1N-C13	A1N	1A	KEYS CREEK		SAN LUIS REY	33.272267	-117.091123	DIRT ARIZONA	20	12	Low Flow	Moderate	0	Poor	Bi-Annually	REPAIR INCOMING AND OUTGOING DIRT RAMPS	0.045							-	Y	Y	N	Y	N/A	N
A1N-C14	A1N	1A	SOUTH OF KEYS CREEK		SAN LUIS REY	33.268725	-117.091783	GALVANIZED	24	24	Seasonal	Low	12	Good	Yearly	Remove weed and sediment						0.027	0.018	-	Y	Y	N	Y	N/A	N
A1N-C15	A1N	1A	SOUTH OF KEYS CREEK		SAN LUIS REY	33.267447	-117.09268	PVC	27	12	Seasonal	Low	15	Good	Yearly	Remove weed and sediment	0.010					0.035		-	Y	Y	N	Y	N/A	N
A1N-C16	A1N	1A	SOUTH OF KEYS CREEK		SAN LUIS REY	33.266597	-117.092404	PLASTIC	20	36	Seasonal	Low	5	Good	Yearly	Remove weed and sediment						0.011	0.034	-	Y	Y	N	Y	N/A	N
A1N-C17	A1N	1A	N OF AIR FLIGHT DRIVE		SAN LUIS REY	33.264557	-117.091669	GALVANIZED	20	14	Seasonal	Low	15	Good	Yearly	Remove weed and sediment							0.045	-	Y	Y	N	Y	N/A	N
A1N-C18	A1N	1A	COULTER CREEK ROAD		SAN LUIS REY	33.253666	-117.093173	GALVANIZED	40	60	Seasonal	Low	12	Good	Yearly	Remove weed and sediment	0.045							-	Y	Y	N	Y	N/A	N
A1N-C19	A1N	1A	COULTER CREEK ROAD		SAN LUIS REY	33.251744	-117.09348	GALVANIZED	50	60	Low Flow	Low	10	Good	Yearly	Remove weed and sediment							0.045	-	Y	Y	N	Y	N/A	N
A1N-C20	A1N	1A	N OF VC 5&6		SAN LUIS REY	33.237147	-117.086518	PLASTIC	25	24	Seasonal	Low	15	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C21	A1N	1A	N OF VC 5&6		SAN LUIS REY	33.231491	-117.085455	GALVANIZED	24	15	Seasonal	Low	20	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C22	A1N	1A	N OF VC 5&6		SAN LUIS REY	33.23064	-117.085339	PLASTIC	36	18	Seasonal	Low	9	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C23	A1N	1A	N OF VC 5&6		SAN LUIS REY	33.230165	-117.085704	GALVANIZED	25	12	Seasonal	Low	18	Good	Yearly	Remove weed and sediment						0.042	0.004	-	Y	Y	N	Y	N/A	N
A1N-C24	A1N	1A	S OF VC 5&6		SAN LUIS REY	33.228252	-117.08567	CONCRETE ARIZONA W/ 2 GALVANIZED CULVERTS	50	19	Low Flow	Moderate	10	Good	Bi-Annually	Remove weed and sediment	0.045							-	Y	Y	N	Y	N/A	N
A1N-C25	A1N	1A	S OF VC 5&6		SAN LUIS REY	33.226206	-117.08562	GALVANIZED	20	12	Seasonal	Low	10	Good	Yearly	Remove weed and sediment						0.000	0.045	-	Y	Y	N	Y	N/A	N
A1N-C26	A1N	1A	S OF VC 5&6		SAN LUIS REY	33.225015	-117.08582	PLASTIC	30	36	Seasonal	Low	10	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C27	A1N	1A	S OF VC 5&6 NORTH PORTAL		SAN LUIS REY	33.223004	-117.086547	3-PLASTIC	25	24	Low Flow	Moderate	10	Moderate	Bi-Annually	Remove weed and sediment	0.044					0.001		-	Y	Y	N	Y	N/A	N
A1N-C28	A1N	1A	NORTH PORTAL		SAN LUIS REY	33.222727	-117.086743	PLASTIC	30	24	Low Flow	Moderate	10	Moderate	Bi-Annually	Remove weed and sediment	0.045							-	Y	Y	N	Y	N/A	N
A1N-C29	A1N	1A	OAT HILL		CARLSBAD	33.211147	-117.087179	GALVANIZED	20	24	Seasonal	Low	10	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C30	A1N	1A	OAT HILL		CARLSBAD	33.211289	-117.087587	GALVANIZED	20	12	Seasonal	Low	21	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C31	A1N	1A	OAT HILL		CARLSBAD	33.211481	-117.088159	PLASTIC	25	12	Seasonal	Low	12	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C32	A1N	1A	S OF OAT HILL		CARLSBAD	33.21109	-117.088955	GALVANIZED	16	18	Seasonal	Low	13	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C33	A1N	1A	EVERGREEN NURSERY		CARLSBAD	33.206045	-117.089531	CONCRETE	20	48	Seasonal	Low	22	Good	Yearly	Remove weed and sediment							0.045	-	Y	Y	N	Y	N/A	N
A1N-C34	A1N	1A	EVERGREEN NURSERY		CARLSBAD	33.204808	-117.089357	2 PLASTIC	28	36	Low Flow	Moderate	22	Moderate	Bi-Annually	Remove weed and sediment							0.045	-	Y	Y	N	Y	N/A	N
A1N-C35	A1N	1A	N OF VC#2		CARLSBAD	33.197452	-117.084656	CONCRETE	17	48	Seasonal	Low	22	Good	Yearly	Remove weed and sediment							0.045	-	Y	Y	N	Y	N/A	N
A1N-C36	A1N	1A	N OF VC#2		CARLSBAD	33.194481	-117.084626	PVC	21	12	Seasonal	Low	15	Good	Yearly	Remove weed and sediment						0.013	0.032	-	Y	Y	N	Y	N/A	N
A1N-C37	A1N	1A	N OF VC#2		CARLSBAD	33.194101	-117.084585	GALVANIZED	33	14	Seasonal	Low	20	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C38	A1N	1A	VC#2		CARLSBAD	33.192768	-117.084322	PVC	30	12	Seasonal	Low	20	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1N-C39	A1N	1A	S OF VC#2		CARLSBAD	33.189477	-117.084192	GALVANIZED	24	18	Seasonal	Low	20	Good	Yearly	Remove weed and sediment						0.045		-	Y	Y	N	Y	N/A	N
A1S-C40	A1S	1A	BEAR VALLEY		SAN DIEGUITO	33.10772	-117.049953	CONCRETE	25	72	Seasonal	Low	12	Good	Yearly	REMOVED WEEDS AND SEDIMENT	0.045							-	-	-	-	-	-	-
A1S-C41	A1S	1A	BEAR VALLEY		SAN DIEGUITO	33.102508	-117.046225	GALVANIZED	25	24	Low Flow	High	18	Poor	Bi-Annually	REMOVED DEBRIS FORM HEAD WALL, TAIL WALL NEEDS TO BE REPLACED	0.045							-	-	-	-	-	-	-
A1S-C42	A1S	1A	CROCKER ROAD		PENASQUITOS	32.987884	-117.020048	GALVANIZED	25	18	Seasonal	Low	12	Good	Yearly	REMOVED WEEDS AND SEDIMENT							0.045	-	-	-	-	-	-	-
A1S-C43	A1S	1A	S OF CROCKER ROAD		PENASQUITOS	32.981741	-117.018401	GALVANIZED	24	12	Seasonal	Low	15	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.032		0.013	-	-	-	-	-	-	-
A1S-C44	A1S	1A	POWAY DUMP		PENASQUITOS	32.964768	-117.016812	GALVANIZED	24	24	Seasonal	Low	15	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C45	A1S	1A	S OF POWAY DUMP		PENASQUITOS	32.964065	-117.016393	GALVANIZED	80	24	Seasonal	Low	10	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C46	A1S	1A	PAULY		PENASQUITOS	32.949576	-117.004597	GALVANIZED	20	21	Seasonal	Low	15	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C47	A1S	1A	S OF PAULY		PENASQUITOS	32.948144	-117.004033	GALVANIZED	23	24	Seasonal	Low	10	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C48	A1S	1A	S OF PAULY		PENASQUITOS	32.947864	-117.003727	PLASTIC	32	24	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C49	A1S	1A	ROLLING HILLS HORSE RANCH		PENASQUITOS	32.945983	-117.002217	2 PLASTIC	20	24	Seasonal	Low	2	Good	Yearly	REMOVED WEEDS AND SEDIMENT							0.045	-	-	-	-	-	-	-
A1S-C50	A1S	1A	GOODAN RANCH		SAN DIEGO	32.940334	-116.981071	PLASTIC	20	24	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT				0.045				-	-	-	-	-	-	-
A1S-C51	A1S	1A	GOODAN RANCH		SAN DIEGO	32.939905	-116.981993	PLASTIC	25	18	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT				0.045				-	-	-	-	-	-	-
A1S-C52	A1S	1A	GOODAN RANCH		SAN DIEGO	32.93877	-116.983577	PLASTIC	20	18	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT						0.045		-	-	-	-	-	-	-
A1S-C53	A1S	1A	GOODAN RANCH		SAN DIEGO	32.938038	-116.984299	PLASTIC	37	18	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT						0.045		-	-	-	-	-	-	-
A1S-C54	A1S	1A	GOODAN RANCH		SAN DIEGO	32.935863	-116.984231	PLASTIC	25	24	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT						0.045		-	-	-	-	-	-	-
A1S-C55	A1S	1A	GOODAN RANCH		SAN DIEGO	32.932019	-116.984936	PLASTIC	20	24	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.033	0.012		-	-	-	-	-	-	-
A1S-C56	A1S	1A	GOODAN RANCH		SAN DIEGO	32.931403	-116.983885	PLASTIC	25	24	Seasonal	Low	5	Good	Yearly	REMOVED WEEDS AND SEDIMENT	0.045							-	-	-	-	-	-	-
A1S-C57	A1S	1A	GOODAN RANCH		SAN DIEGO	32.929087	-116.980588	GALVANIZED	20	40	Seasonal	Low	15	Good	Yearly	REMOVED WEEDS AND SEDIMENT	0.045							-	-	-	-	-	-	-
A1S-C58	A1S	1A	SLAUGHTER HOUSE		SAN DIEGO	32.918333	-116.959745	GALVANIZED	25	18	Seasonal	Low	15	Good	Yearly	REMOVED WEEDS AND SEDIMENT						0.045		-	-	-	-	-	-	-
A1S-C59	A1S	1A	SLAUGHTER HOUSE		SAN DIEGO	32.919311	-116.952254	CONCRETE	14	48	Seasonal	Low	22	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C60	A1S	1A	SLAUGHTER HOUSE		SAN DIEGO	32.921206	-116.949499	PLASTIC	29	24	Seasonal	Low	18	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C61	A1S	1A	SLAUGHTER HOUSE		SAN DIEGO	32.919922	-116.948957	GALVANIZED	20	20	Seasonal	Low	22	Good	Yearly	REMOVED WEEDS AND SEDIMENT					0.045			-	-	-	-	-	-	-
A1S-C62	A1S	1A			PENASQUITOS	32.959899	-117.012295	Arizona Concrete	22	25	Seasonal			Good	Yearly		0.000				0.035		0.010	-	-	-	-	-	-	-
A2DEL-C46	A2DEL	4	SOUTH OF DEL DIOS	San Dieguito River	SAN DIEGUITO	33.033822	-117.161787	CONCRETE ARIZONA	120	14	Low Flow	Moderate	12	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	Y	Y	N	Y	N/A	N
A2DEL-C47	A2DEL	4	SOUTH OF RAMONA TAKE OFF		SAN DIEGUITO	33.01966	-117.151371	CONCRETE ARIZONA	60	16	Low Flow	Low	10	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2DEL-C48	A2DEL	4	Golums Ranch		SAN DIEGUITO	33.010705	-117.146691	CONCRETE ARIZONA	25	15	Low Flow	Low	10	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	Y	Y	N	Y	N/A	N
A2DEL-C49	A2DEL	4	Golums Ranch	Lusardi Creek	SAN DIEGUITO	33.004741	-117.146112	CONCRETE ARIZONA	30	14	Low Flow	Low	20	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	Y	Y	N	Y	N/A	N
A2DEL-C50	A2DEL	3	Golums Ranch		SAN DIEGUITO	32.987812	-117.132708	CONCRETE ARIZONA	50	14	Low Flow	Low	18	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2DEL-C51	A2DEL		north of San Diego 10		SAN DIEGUITO	32.984114	-117.129752	PLASTIC	20	24	Low Flow	Low	New	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	Y	Y	N	Y	N/A	N
A2DEL-C52	A2DEL	4	SOUTH OF San Diego 10		PENASQUITOS	32.981155	-117.127691	CONCRETE ARIZONA	73	14	Seasonal	Low	12	Good	Yearly	Remove mud from Arizona and blow off structure. Also redirected water flow					0.045			2020	Y	Y	N	Y	N/A	N
A2DEL-C53	A2DEL	5	Penasquitos Creek		PENASQUITOS	32.944575	-117.117006	GALVANIZED	20	24	Low Flow	Low	2	Moderate	Yearly	REMOVED SILT AND WEEDS. Repair road and head wall	0.045							2020	Y	Y	N	Y	N/A	N
A2DEL-C54	A2DEL	4	Penasquitos Creek	Los Penasquitos Creek	PENASQUITOS	32.944088	-117.116867	CONCRETE ARIZONA	60	14	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	Y	Y	N	Y	N/A	N
A2DIV-C26	A2DIV		South of Roppers		CARLSBAD	33.205814	-117.175947	Arizona concrete	24	9	Seasonal	Low	7	Good	Yearly	Remove mud							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C27	A2DIV		Vista Point circle		CARLSBAD	33.194993	-117.175985	Arizona concrete	50	15	Seasonal	Low	12	Good	Yearly	Remove mud						0.045		2020	Y	Y	N	Y	N/A	N
A2DIV-C28	A2DIV		Blue bird Canyon		CARLSBAD	33.191901	-117.176394	Arizona concrete/ asphalt	10-Mar	60	Low Flow	Moderate	12	Good	Bi-Annually	Remove mud and brush						0.045		2020	Y	Y	N	Y	N/A	N
A2DIV-C29	A2DIV		Blue bird Canyon		CARLSBAD	33.181456	-117.179228	GALVANIZED	24	18	Seasonal	Moderate	16	Good	Bi-Annually	Remove trash, brush, and repair road erosion around gate filled in with dirt					0.026		0.019	2020	Y	Y	N	Y	N/A	N
A2DIV-C30	A2DIV		South of Blue bird Canyon		CARLSBAD	33.180513	-117.18221	PLASTIC	50	12	Seasonal	Low	8	Good	Yearly	Remove weed and brush and redirected the water going into it					0.045			2020	Y	Y	N	Y	N/A	N
A2DIV-C31	A2DIV		SAN MARCOS south of Blue bird Canyon		CARLSBAD	33.180127	-117.182001	GALVANIZED	20	24	Seasonal	Low	14	Good	Yearly	REMOVE WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2DIV-C32	A2DIV		SAN MARCOS south of Blue bird Canyon	Agua Hedionda Creek	CARLSBAD	33.166587	-117.189899	GALVANIZED	20	20	Low Flow	Low	6	Good	Yearly	REMOVE DIRT AND WEEDS	0.044				0.001			2020	Y	Y	N	Y	N/A	N

[1] See "Sources" Tab
[2,3,4] See "Definitions" Tab

San Diego County Water Authority - Lake and Streambed Alteration Routine Maintenance Agreement
Culverts and Arizona Crossings

Facility Name/ID	ROW Zone	Pipeline	Location	Creek Name (if within 50 feet of culvert)	Watershed	Latitude	Longitude	Structure Material	Culvert Length (Linear Feet)	Culvert Diameter (Square Inches)	Flow Rate	Priority	Age	Condition	Maintenance Frequency	Required Maintenance	Environmental Setting (Existing Conditions 25-foot Radius) (Acres)[1]							Annual Reporting (2021)						
																	Aquatic/Riparian			Upland										
																	TIER I	TIER II	TIER III	TIER I	TIER II	TIER III	TIER IV	Previous Year Maintained	Maintained in Current Year? (Y/N)	Work within Channel Bed/Bank? (Y/N)[2]	"Substantial" Maintenance Activity per CFGC? (Y/N)[3]	Activities Contained Within Baseline Maint. Limits? (Y/N)[4]	If Applicable, Area Maintained Outside Baseline Limits (sq. ft.)	Maintenance Agreement Fee Required? (Y/N)
A2DIV-C33	A2DIV	5	SAN MARCOS BOULEVARD AND Las Posas		CARLSBAD	33.131558	-117.193127	GALVANIZED	20	30	Seasonal	Low	10	Good	Yearly	REMOVE DIRT AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C34	A2DIV	5	SAN MARCOS HILL IN THE GROVE		CARLSBAD	33.117191	-117.190303	GALVANIZED	20	24	Seasonal	Low	10	Good	Yearly	REMOVE DIRT AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C35	A2DIV	5	SAN MARCOS HILL IN THE GROVE		CARLSBAD	33.116209	-117.191084	GALVANIZED	80	24	Seasonal	Low	10	Good	Yearly	REMOVE DIRT AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C36	A2DIV	5	SAN MARCOS HILL IN THE GROVE		CARLSBAD	33.115383	-117.192022	GALVANIZED	100	24	Seasonal	Low	10	Good	Yearly	REMOVE DIRT AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C37	A2DIV	5	SAN MARCOS HILL IN THE GROVE		CARLSBAD	33.114239	-117.193594	GALVANIZED	40	30	Seasonal	Low	10	Good	Yearly	REMOVE DIRT AND WEEDS				0.045				2020	Y	Y	N	Y	N/A	N
A2DIV-C38	A2DIV	3	ELFIN FOREST ROAD		CARLSBAD	33.09303	-117.192279	GALVANIZED	40	24	Seasonal	Low	7	Good	Yearly	DE-WEED CULVERT PAST STRUCTURE					0.045			2020	Y	Y	N	Y	N/A	N
A2DIV-C39	A2DIV		ELFIN FOREST ROAD SOUTH SIDE Two Culverts		CARLSBAD	33.082594	-117.182847	PLASTIC	25	24	Low Flow	Moderate	7	Good	Yearly	REMOVE WOOD, BRUCH, WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C40	A2DIV		ELFIN FOREST (COUNTY ROAD)		CARLSBAD	33.069454	-117.185383	GALVANIZED	20	22	Seasonal	Low	20	Good	Yearly	DIG OUT DIRT AND REMOVE WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2DIV-C41	A2DIV		COUNTY ROAD		CARLSBAD	33.064984	-117.180743	METAL	20	24	Seasonal	Moderate	15	Good	Bi-Annually	DIG OUT DIRT AND REMOVE WEEDS					0.041	0.004		2020	Y	Y	N	Y	N/A	N
A2DIV-C42	A2DIV		COUNTY ROAD AT ESCONDIDO CREEK	Escondido Creek	CARLSBAD	33.060322	-117.179959	ZONA CROSSING CONCRE	40	N/A	Seasonal	Moderate	25	Good	Bi-Annually	REMOVE WEEDS, FIX DIVITS, AND EROSION ON ROAD	0.045							2020	Y	Y	N	Y	N/A	N
A2DIV-C43	A2DIV		NORTH OF BADGER PLANT		CARLSBAD	33.05223	-117.176061	PLASTIC	24	18	Seasonal	Low	5	Good	Yearly	REMOVED BRUSH AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C43-A	A2DIV	2A	NORTH OF BADGER PLANT		CARLSBAD	33.052492	-117.176191	GALVANIZED	24	18	Seasonal	Low	20	Moderate	Yearly	REMOVED BRUSH AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C44	A2DIV		NORTH OF BADGER PLANT		CARLSBAD	33.05223	-117.176061	PLASTIC	24	18	Seasonal	Low	5	Good	Yearly	REMOVED BRUSH AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2DIV-C45	A2DIV		SOUTH OF BADGER PLANT AND JUST SOUTH OF THE NURSERY THROUGH GATE		SAN DIEGUITO	33.04308	-117.171001	PLASTIC	20	24	Seasonal	Low	12	Good	Yearly	Had to pull culvert out and remove all the dirt that was inside of it and reinstall the culvert and head and tail wall					0.045			2020	Y	Y	N	Y	N/A	N
A2DIV-C46	A2DIV	2A			CARLSBAD	33.053063	-117.176458	METAL	25	24	Seasonal			Good	Yearly								0.045	2020	Y	Y	N	Y	N/A	N
A2MMV-C55	A2MMV	2A	SOUTH OF MIRAMAR VENTS		PENASQUITOS	32.927158	-117.115194	GALVANIZED	35	18	Seasonal	Low	3	Good	Yearly	REMOVED BRUSH					0.043	0.002		2020	Y	Y	N	Y	N/A	N
A2MMV-C56	A2MMV	2A	SOUTH OF MIRAMAR ROAD		PENASQUITOS	32.911448	-117.100496	GALVANIZED	20	20	Seasonal	Low	22	Poor	Yearly	REMOVED MUD AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2MMV-C57	A2MMV	2A	CAMP ELLIOT		PENASQUITOS	32.892595	-117.096176	GALVANIZED	20	24	Seasonal	Low	10	Good	Yearly	CLEAN DEBRIS, ROCKS, AND FIX ROAD					0.045			2020	Y	Y	N	Y	N/A	N
A2MMV-C58	A2MMV	2A	CAMP ELLIOT		PENASQUITOS	32.886071	-117.09532	GALVANIZED	24	14	Seasonal	Low	18	Good	Yearly	CLEAN DEBRIS, ROCKS, AND FIX ROAD						0.034	0.011	2020	Y	Y	N	Y	N/A	N
A2MMV-C59	A2MMV	2A	CAMP ELLIOT		PENASQUITOS	32.881938	-117.094807	STEEL	25	24	Seasonal	Moderate	22	Good	Yearly	Clear head and tail wall from mud and brush. Fix road and backfill around structures.					0.003		0.042	2020	Y	Y	N	Y	N/A	N
A2MMV-C60	A2MMV	2A	CAMP ELLIOT		PENASQUITOS	32.874075	-117.095596	ROCK ARIZONA	40	20WIDE	Seasonal	Low	15	Good	Yearly	CLEAR WEEDS, FIX ROAD, REMOVE BIG ROCKS							0.045	2020	Y	Y	N	Y	N/A	N
A2MMV-C61	A2MMV	2A	CAMP ELLIOT		PENASQUITOS	32.869066	-117.095314	GALVANIZED	24	18	Seasonal	Low	10	Good	Yearly	CLEAR WEEDS, FIX EROSION						0.011	0.034	2020	Y	Y	N	Y	N/A	N
A2MMV-C62	A2MMV	2A	CAMP ELLIOT		SAN DIEGO	32.863505	-117.09254	TWO METAL CULVERTS	25	24	Seasonal	Low	10	Good	Yearly	CLEAR WEEDS, FIX EROSION					0.007	0.005	0.033	2020	Y	Y	N	Y	N/A	N
A2MMV-C63	A2MMV	2A	CAMP ELLIOT		SAN DIEGO	32.858893	-117.090501	METAL	40	18	Seasonal	Low	12	Good	Yearly	CLEAR WEEDS, FIX EROSION							0.045	2020	Y	Y	N	Y	N/A	N
A2MMV-C64	A2MMV	2A	CAMP ELLIOT		SAN DIEGO	32.848703	-117.08631	STEEL	35	24	Seasonal	Low	20	Good	Yearly	CLEAR WEEDS, FIX EROSION							0.045	2020	Y	Y	N	Y	N/A	N
A2MMV-C65	A2MMV	2A	CAMP ELLIOT BY SOUTH GATE		SAN DIEGO	32.845919	-117.0855	PVC	20	12	Seasonal	Low	10	Good	Yearly	REMOVE WEEDS, FIX ROAD, OPEN BOTH ENDS OF CULVERT					0.028		0.017	2020	Y	Y	N	Y	N/A	N
A2MMV-C66	A2MMV	2A	MISSION TRAILS		SAN DIEGO	32.842131	-117.082371	CONCRETE	30	30	Seasonal	Low	8	Good	Yearly	REMOVED BRUSH AND ROCKS	0.036						0.009	2020	Y	Y	N	Y	N/A	N
A2MMV-C67	A2MMV	2A	MISSION TRAILS		SAN DIEGO	32.840745	-117.078821	PLASTIC	25	24	Seasonal	Low	12	Good	Yearly	REMOVED BRUSH AND ROCKS					0.035		0.010	2020	Y	Y	N	Y	N/A	N
A2MMV-C68	A2MMV	2A	MISSION TRAILS		SAN DIEGO	32.839936	-117.078951	METAL	25	32	Seasonal	Low	10	Good	Yearly	REMOVED BRUSH AND ROCKS					0.037		0.008	2020	Y	Y	N	Y	N/A	N
A2MMV-C69	A2MMV	2A	MISSION TRAILS		SAN DIEGO	32.838749	-117.078408	GALVANIZED	50	30	Seasonal	Low	10	Good	Yearly	REMOVED BRUSH AND ROCKS					0.021		0.024	2020	Y	Y	N	Y	N/A	N
A2MMV-C70	A2MMV	2A	MISSION TRAILS		SAN DIEGO	32.837975	-117.074455	GALVANIZED	32	30	Seasonal	Low	10	Good	Yearly	REMOVED BRUSH AND ROCKS					0.013		0.032	2020	Y	Y	N	Y	N/A	N
A2MMV-C71	A2MMV	2A	MISSION TRAILS		SAN DIEGO	32.832432	-117.070559	PLASTIC	31	18	Seasonal	Low	10	Good	Yearly	REMOVED BRUSH AND ROCKS					0.037		0.008	2020	Y	Y	N	Y	N/A	N
A2MMV-C72	A2MMV	2A	MISSION TRAILS		SAN DIEGO	32.826598	-117.066039	PLASTIC	53	24	Seasonal	Low	10	Good	Yearly	REMOVED BRUSH AND ROCKS						0.014	0.031	2020	Y	Y	N	Y	N/A	N
A2N-C01	A2N	3	Next to P032069PW		SAN LUIS REY	33.355139	-117.177919	METAL	28	18	Seasonal	Moderate	8	Good	Yearly	De-weed and clean on both sides and inspect							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C02	A2N	4	Next to P042115PW		SAN LUIS REY	33.343311	-117.173599	Arizona asphalt	12 W	15 L	Seasonal	Low	8	Good	Yearly	Inspect and clean. Deweed and sweep crossing							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C03	A2N	4	200 south of P042137MH south of 5 points on line road		SAN LUIS REY	33.33812	-117.172993	METAL	60	18	Seasonal	Moderate	8	Good	Yearly	Deweed both sides, and Inspect							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C04	A2N	5	Sage Road next to P052163PW		SAN LUIS REY	33.330263	-117.172707	METAL	20	8	Seasonal	Low	4	Good	Yearly	Inspect and clean. Not a Water Authority culvert							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C05	A2N	4	200 southeast of P042251MH (Upper Dulins)		SAN LUIS REY	33.30748	-117.161343	METAL	50	8	Seasonal	Low	4	Good	Yearly	deweed, muck out, and inspect culvert					0.045			2020	Y	Y	N	Y	N/A	N
A2N-C06	A2N	3	Mountain view		SAN LUIS REY	33.304845	-117.160631	PLASTIC	60	24	Seasonal	Moderate	4	Good	Yearly	deweed, muck out, and inspect culvert	0.045							2020	Y	Y	N	Y	N/A	N
A2N-C07	A2N	3	next to P032269PW		SAN LUIS REY	33.303429	-117.159842	PLASTIC	64	24	Seasonal	Moderate	4	Good	Yearly	deweed, muck out, and inspect culvert							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C08	A2N	3	west Lilac		SAN LUIS REY	33.300102	-117.158357	Plastic (3culverts)	68	36	Low Flow	Moderate	4	Good	Bi-Annually	washed out all three culverts, removed muck and deweeded. Repaired head and tail wall. Repair road and installed cutout and sand bags							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C09	A2N	4	Lower Aqueduct road		SAN LUIS REY	33.288214	-117.157001	STEEL	150	20	Low Flow	Low	20	Good	Yearly	Remove rocks and deweed							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C10	A2N	4	Lower Aqueduct road		SAN LUIS REY	33.270676	-117.165647	GALVANIZED	30	14	Seasonal	Low	16	Good	Yearly	Remove and clean weeds and brush					0.045			2020	Y	Y	N	Y	N/A	N
A2N-C11	A2N	4	Lower Aqueduct road south of gate		SAN LUIS REY	33.270778	-117.165744	GALVANIZED	35	14	Seasonal	Low	16	Good	Yearly	Remove and clean weeds and brush					0.045			2020	Y	Y	N	Y	N/A	N
A2N-C12	A2N	4	Lower Aqueduct road		SAN LUIS REY	33.26933	-117.164795	GALVANIZED	30	12	Seasonal	Low	8	Good	Yearly	Remove and clean weeds and brush					0.045			2020	Y	Y	N	Y	N/A	N
A2N-C13	A2N	4	Lower Aqueduct road		SAN LUIS REY	33.269262	-117.164207	GALVANIZED	25	36	Seasonal	Low	16	Good	Yearly	Remove and clean weeds and brush and tree					0.045			2020	Y	Y	N	Y	N/A	N
A2N-C14	A2N	4	Lower Aqueduct road		SAN LUIS REY	33.268419	-117.163088	GALVANIZED	30	12	Seasonal	Low	16	Good	Yearly	Remove and clean weeds and brush					0.045			2020	Y	Y	N	Y	N/A	N
A2N-C15	A2N	3	Avo hill		SAN LUIS REY	33.256805	-117.168199	PLASTIC	60	18	Low Flow	Moderate	15	Good	Bi-Annually	Remove and clean weeds and brush					0.005		0.040	2020	Y	Y	N	Y	N/A	N
A2N-C16	A2N	4	VC7		SAN LUIS REY	33.252342	-117.168478	STEEL	130	30	Low Flow	Low	15	Good	Yearly	Remove and clean weeds and brush							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C17	A2N	3	north of NCDP		SAN LUIS REY	33.24649	-117.16854	METAL	20	30	Seasonal	Low	N/A	Good	Yearly	Clean weeds away from culvert and clean muck out of culvert Cleaned out ditch going west past P052485BO							0.045	2020	Y	Y	N	Y	N/A	N
A2N-C17-A	A2N	2A	Jackass Canyon		SAN LUIS REY	33.234307	-117.171808	GALVANIZED	60	12	Seasonal	Low	New 201	Good	Yearly	Remove brush and weeds	0.015				0.031			2020	Y	Y	N	Y	N/A	N
A2N-C18	A2N	3	Twin Oaks Jackass canyon		SAN LUIS REY	33.226919	-117.175281	PLASTIC	22	18	Seasonal	Low	3	Good	Yearly	Remove brush and redirected water flow. Cleaned head and tail wall						0.045		2020	Y	Y	N	Y	N/A	N
A2N-C19	A2N	3	Twin Oaks Jackass canyon		SAN LUIS REY	33.225168	-117.175362	PLASTIC	25	24	Seasonal	Low	15	Good	Yearly	Remove brush and redirected water flow. Cleaned head and tail wall						0.045		2020	Y	Y	N	Y	N/A	N
A2N-C20	A2N	3	Twin Oaks Jackass canyon		SAN LUIS REY	33.223802	-117.175289	GALVANIZED	20	15	Seasonal	Low	12	Good	Yearly	Remove weeds and silt						0.045		2020	Y	Y	N	Y	N/A	N
A2N-C21	A2N	3	Twin Oaks Jackass canyon		SAN LUIS REY	33.223426	-117.1753	PLASTIC	30	18	Seasonal	Low	13	Good	Yearly	REMOVED rocks and brush and worked on the head wall						0.045		2020	Y	Y	N	Y	N/A	N
A2N-C22	A2N	2	Twin Oaks		SAN LUIS REY	33.221841	-117.175378	PLASTIC	20	24	Low Flow	Moderate	5	Good	Yearly	REMOVED rocks and mud from downside of culvert. Cleared all weeds and Redirected the water flow going to the culvert.	0.045							2020	Y	Y	N	Y	N/A	N

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Facility Name/ID	ROW Zone	Pipeline	Location	Creek Name (if within 50 feet of culvert)	Watershed	Latitude	Longitude	Structure Material	Culvert Length (Linear Feet)	Culvert Diameter (Square Inches)	Flow Rate	Priority	Age	Condition	Maintenance Frequency	Required Maintenance	Environmental Setting (Existing Conditions 25-foot Radius) (Acres)[1]							Annual Reporting (2021)						
																	Aquatic/Riparian			Upland										
																	TIER I	TIER II	TIER III	TIER I	TIER II	TIER III	TIER IV	Previous Year Maintained	Maintained in Current Year? (Y/N)	Work within Channel Bed/Bank? (Y/N)[2]	"Substantial" Maintenance Activity per CFGC? (Y/N)[3]	Activities Contained Within Baseline Maint. Limits? (Y/N)[4]	If Applicable, Area Maintained Outside Baseline Limits (sq. ft.)	Maintenance Agreement Fee Required? (Y/N)
A2N-C23	A2N	2	North of diversion structure		SAN LUIS REY	33.219714	-117.176152	CONCRETE	40	90	Seasonal	Low	22	Good	Yearly	REMOVED Brush and fix road						0.011	0.034	2020	Y	Y	N	Y	N/A	N
A2N-C24	A2N	2	North of diversion structure		SAN LUIS REY	33.216777	-117.175792	GALVANIZED	24	24	Seasonal	Low	18	Good	Yearly	REMOVED Brush and rocks					0.045			2020	Y	Y	N	Y	N/A	N
A2N-C25	A2N	2	North of diversion structure		SAN LUIS REY	33.214337	-117.175896	GALVANIZED	24	24	Seasonal	Low	6	Good	Yearly	REMOVED Brush					0.045			2020	Y	Y	N	Y	N/A	N
A2SDR-C73	A2SDR	2A	LAKE MURRAY		SAN DIEGO	32.792693	-117.037737	GALVANIZED	20	36	Seasonal	Low	22	Good	Yearly	REMOVED WEEDS AND ROCKS					0.013		0.032	2020	Y	Y	N	Y	N/A	N
A2SDR-C74	A2SDR	2A	LAKE MURRAY		SAN DIEGO	32.788453	-117.036784	GALVANIZED	20	20	Seasonal	Low	22	Poor	Yearly	REMOVED WEEDS AND ROCKS					0.010	0.002	0.033	2020	Y	Y	N	Y	N/A	N
A2SDR-C75	A2SDR	2A	LAKE MURRAY		SWEETWATER	32.749588	-117.011855	GALVANIZED	21	15	Seasonal	Low	15	Good	Yearly	REMOVED WEEDS AND ROCKS							0.045	2020	Y	Y	N	Y	N/A	N
A2SDR-C76	A2SDR	2A	ILLDICA STREET		SWEETWATER	32.725195	-117.009966	GALVANIZED	20	14	Seasonal	Low	20	Good	Yearly	REMOVED WEEDS AND ROCKS					0.027		0.018	2020	Y	Y	N	Y	N/A	N
A2SDR-C77	A2SDR	2A	ILLDICA STREET		SWEETWATER	32.723454	-117.009985	PVC	13	18	Seasonal	Low	20	Good	Yearly	REMOVED WEEDS AND ROCKS							0.045	2020	Y	Y	N	Y	N/A	N
A2SDR-C78	A2SDR	2A	SPRING VALLEY SWAP MEET PARKING LOT		SWEETWATER	32.699612	-117.006457	PLASTIC	30	24	Seasonal	Low	10	Good	Yearly	REMOVED WEEDS AND ROCKS			0.019			0.026		2020	Y	Y	N	Y	N/A	N
A2SWR-C79	A2SWR	2A	PROCTOR VALLEY		SWEETWATER	32.665973	-116.994836	GALVANIZED	24	66	Seasonal	Low	15	Good	Yearly	REMOVED ROCKS AND WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2SWR-C80	A2SWR	2A	PROCTOR VALLEY		SWEETWATER	32.660434	-116.993109	PLASTIC	45	24	Seasonal	Low	6	Good	Yearly	REMOVED ROCKS AND WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2SWR-C81	A2SWR	2A	TELEGRAPH CANYON ROAD		SWEETWATER	32.644499	-116.975486	CONCRETE ARIZONA	30	14WIDE	Low Flow	Low	10	Good	Bi-Annually	REMOVED ROCKS AND WEEDS	0.001						0.044	2020	Y	Y	N	Y	N/A	N
A2SWR-C82	A2SWR	2A	OTAY #12		SWEETWATER	32.640615	-116.97159	CONCRETE	40	18	Seasonal	Low	10	Good	Yearly	REMOVED ROCKS AND WEEDS							0.045	2020	Y	Y	N	Y	N/A	N
A2SWR-C83	A2SWR	2A	SALT CREEK	Salt Creek	OTAY	32.616145	-116.942338	PLASTIC	20	36	Seasonal	Moderate	10	Good	Bi-Annually	REMOVED ROCKS AND WEEDS			0.007		0.038			2020	Y	Y	N	Y	N/A	N
A2SWR-C84	A2SWR	2A	LOWER OTAY AREA SOUTH OF SALT CREEK		OTAY	32.614617	-116.940831	PLASTIC	25	24	Seasonal	Low	4	Good	Yearly	REMOVED ROCKS AND WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2SWR-C85	A2SWR	2A	LOWER OTAY AREA 400 SOUTH OF SALT CREEK		OTAY	32.614477	-116.938728	STEEL	20	18	Seasonal	Low	4	Moderate	Yearly	REMOVED ROCKS AND WEEDS					0.045			2020	Y	Y	N	Y	N/A	N
A2SWR-C86	A2SWR	2A	OTAY LAKES PARK		OTAY	32.607301	-116.928718	GALVANIZED	20	8	Seasonal	Low	25	Good	Yearly	REMOVED ROCKS AND WEEDS					0.025		0.020	2020	Y	Y	N	Y	N/A	N
A2SWR-C87	A2SWR	2A			SWEETWATER	32.678278	-116.999587	PLASTIC	15	10	Slow			clogged	Yearly		0.040						0.005	2020	Y	Y	N	Y	N/A	N
LMS-C01	LMS	LMS	SLAUGHTER HOUSE CANYON		SAN DIEGO	32.920506	-116.949346	PLASTIC	25	24	Seasonal	Low	9	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
LMS-C02	LMS	LMS	SLAUGHTER HOUSE CANYON		SAN DIEGO	32.919904	-116.949879	CONCRETE	16	48	Seasonal	Low	22	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
LMS-C03	LMS	LMS	SLAUGHTER HOUSE CANYON		SAN DIEGO	32.917852	-116.951173	GALVANIZED	24	18	Seasonal	Low	22	Poor	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
LMS-C04	LMS	LMS	SLAUGHTER HOUSE CANYON		SAN DIEGO	32.916492	-116.951985	PLASTIC	30	24	Seasonal	Low	22	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
LMS-C05	LMS	LMS	SLAUGHTER HOUSE CANYON		SAN DIEGO	32.913668	-116.953141	CONCRETE ARIZONA	39	25Wide	Seasonal	Low	1	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
LMS-C06	LMS	LMS	POST HILL		SAN DIEGO	32.88808	-116.933407	PLASTIC	30	18	Seasonal	Low	5	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
LMS-C07	LMS	LMS	POST HILL		SAN DIEGO	32.88223	-116.934205	GALVANIZED	42	18	Seasonal	Low	13	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-
LMS-C08	LMS	LMS	POST HILL		SAN DIEGO	32.88144	-116.93446	PLASTIC	37	24	Seasonal	Low	6	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-
LMS-C09	LMS	LMS	COUNTY YARD		SWEETWATER	32.742102	-116.945657	CONCRETE STEEL	16	24	Seasonal	Low	22	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
LMS-C10	LMS	LMS			SAN DIEGO	32.86177	-116.931492	METAL	25	16	Seasonal			Good			0.045							2020	N	-	-	-	-	-
NCD-C01	NCD	NCDP	WEST OF TWIN OAKS		SAN LUIS REY	33.241794	-117.180296	GALVANIZED	41	18	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS					0.008		0.037	2020	N	-	-	-	-	-
NCD-C02	NCD	NCDP	WEST OF TWIN OAKS		SAN LUIS REY	33.241809	-117.180858	GALVANIZED	43	18	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-
NCD-C03	NCD	NCDP	WEST OF TWIN OAKS		SAN LUIS REY	33.241851	-117.184072	GALVANIZED	38	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
NCD-C04	NCD	NCDP	EAST OF ELEVADO		SAN LUIS REY	33.242323	-117.200706	GALVANIZED	43	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	N	-	-	-	-	-
NCD-C05	NCD	NCDP	EAST OF ELEVADO		SAN LUIS REY	33.242206	-117.205324	GALVANIZED	44	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	N	-	-	-	-	-
NCD-C06	NCD	NCDP	WEST OF ELEVADO		SAN LUIS REY	33.241462	-117.211336	PLASTIC	40	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	N	-	-	-	-	-
NCD-C07	NCD	NCDP	WEST OF GREEN HILL WAY		SAN LUIS REY	33.241449	-117.216466	GALVANIZED	40	18	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.000						0.045	2020	N	-	-	-	-	-
NCD-C08	NCD	NCDP	WEST OF GREEN HILL WAY		SAN LUIS REY	33.238854	-117.217423	GALVANIZED	60	18	Seasonal	Low	10	Good	Yearly	REMOVED SILT AND WEEDS					0.021	0.024		2020	N	-	-	-	-	-
NCD-C09	NCD	NCDP			SAN LUIS REY	33.241416	-117.21276	GALVANIZED	18	24	Seasonal			Good	Yearly								0.045	2020	N	-	-	-	-	-
OLV-C01	OLV	OLV	WEST OF OLIVENHEIN DAM		CARLSBAD	33.066916	-117.15146	CONCRETE ARIZONA	14	9	Seasonal	Low	10	Good	Yearly	REMOVED SILT AND WEEDS					0.045			-	Y	Y	N	Y	N/A	N
OLV-C02	OLV	OLV	EAST OF OLV0030BO	Escondido Creek	CARLSBAD	33.063555	-117.171873	CONCRETE ARIZONA	60	15	Seasonal	Low	10	Good	Yearly	REMOVED SILT AND WEEDS	0.034					0.011		-	Y	Y	N	Y	N/A	N
OLV-C03	OLV	OLV	NEXT TO OLV0030BO	Escondido Creek	CARLSBAD	33.062849	-117.171912	CONCRETE ARIZONA	60	21	Seasonal	Low	10	Good	Yearly	REMOVED SILT AND WEEDS	0.031					0.014		-	Y	Y	N	Y	N/A	N
OLV-C04	OLV	OLV	Olivenhain Dam		CARLSBAD	33.068412	-117.136319	PLASTIC	24	20	Slow			Good	Yearly					0.005			0.041	-	Y	Y	N	Y	N/A	N
OLV-C05	OLV	OLV	Olivenhain Dam		CARLSBAD	33.06804	-117.136278	PLASTIC	24	20	Slow			Good	Yearly					0.045				-	Y	Y	N	Y	N/A	N
OLV-C06	OLV	OLV	Olivenhain Dam		CARLSBAD	33.067075	-117.137062	PLASTIC	24	36	Slow			Good	Yearly					0.045				-	Y	Y	N	Y	N/A	N
OLV-C07	OLV	OLV	Olivenhain Dam		CARLSBAD	33.066694	-117.137495	Arizona Concrete	16	12	Slow			Good	Yearly					0.045				-	Y	Y	N	Y	N/A	N
OLV-C08	OLV	OLV	Olivenhain Dam		CARLSBAD	33.06522	-117.137707	PLASTIC	60	24	Seasonal			Poor	Yearly					0.045				-	Y	Y	N	Y	N/A	N
RAM-C01	RAM	RDSRAM	NEXT TO RAM0088BO		SAN DIEGUITO	33.021948	-117.123588	CONCRETE	41	48	Seasonal	Low	20	Good	Yearly	REMOVE BRUSH AND DIRT		0.042				0.003		-	Y	Y	N	Y	N/A	N
RAM-C02	RAM	RDSRAM	WEST OF OLIVENHAIN 5		SAN DIEGUITO	33.022047	-117.119216	PLASTIC	20	12	Seasonal	Low	3	Good	Yearly	REMOVE BRUSH AND DIRT							0.045	-	Y	Y	N	Y	N/A	N
TAP-C01	TAP	TAP	W OF WOODS YARD		CARLSBAD	33.153182	-117.23832	STEEL	24	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.013				0.000		0.032	2020	N	-	-	-	-	-
TAP-C02	TAP	TAP	AT PARK		CARLSBAD	33.156267	-117.247154	GALVANIZED	20	36	Low Flow	Moderate	12	Poor	Bi-Annually	REMOVED SILT AND WEEDS	0.044					0.001		2020	N	-	-	-	-	-
TAP-C03	TAP	TAP	AT PARK		CARLSBAD	33.156267	-117.247154	GALVANIZED	20	36	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.044					0.001		2020	N	-	-	-	-	-
VCP-C01	VCP	VCP	BERRY ROAD		SAN LUIS REY	33.278681	-117.096157	PLASTIC	76	18	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS							0.045	-	Y	Y	N	Y	N/A	N
VCP-C02	VCP	VCP	WEST OF BERRY ROAD		SAN LUIS REY	33.278259	-117.102924	CONCRETE ARIZONA	60	16 WIDE	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.045							-	Y	Y	N	Y	N/A	N
VCP-C03	VCP	VCP	WEST OF BERRY ROAD		SAN LUIS REY	33.278029	-117.103915	PLASTIC	40	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.040				0.005			-	Y	Y	N	Y	N/A	N
VCP-C04	VCP	VCP	WEST OF BERRY ROAD		SAN LUIS REY	33.276214	-117.104247	PLASTIC	35	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.028				0.017			-	Y	Y	N	Y	N/A	N
VCP-C05	VCP	VCP	WEST OF BERRY ROAD		SAN LUIS REY	33.278535	-117.108291	PLASTIC	35	24	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS							0.045	-	Y	Y	N	Y	N/A	N
VCP-C06	VCP	VCP	RODRIGUEZ ROAD		SAN LUIS REY	33.278461	-117.129494	CONCRETE ARIZONA	75	20	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS							0.045	-	Y	Y	N	Y	N/A	N
VCP-C07	VCP	VCP	EAST OF NELSON WAY		SAN LUIS REY	33.275696	-117.141827	3 GALVANIZED	40	30	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.045							-	Y	Y	N	Y	N/A	N
VCP-C08	VCP	VCP	EAST OF NELSON WAY		SAN LUIS REY	33.275344	-117.142968	GALVANIZED	30	42	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS							0.045	-	Y	Y	N	Y	N/A	N
VCP-C09	VCP	VCP			SAN LUIS REY	33.278511	-117.112512	PLASTIC	50	24	Seasonal			Good	Yearly					0.000		0.000	0.045	-	Y	Y	N	Y	N/A	N
XVR-C01	XVR	SXVR	NORTH OF STATION 32+54		CARLSBAD	33.206728	-117.16674	CONCRETE	24	24	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-
XVR-C02	XVR	SXVR			CARLSBAD	33.2064	-117.166225	CONCRETE	24	24	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS						0.015	0.030	2020	N	-	-	-	-	-
XVR-C03	XVR	SXVR	SOLAR LANE 300 E OF 52+14BO		CARLSBAD	33.20279	-117.159459	GALVANIZED	30	12	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	N	-	-	-	-	-
XVR-C04	XVR	SXVR	SOLAR LANE 100 W OF 67+72		CARLSBAD	33.203401	-117.157827	GALVANIZED	25	18	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS						0.000	0.045	2020	N	-	-	-	-	-
XVR-C05	XVR	SXVR	JONI LANE E OF 67+72		CARLSBAD	33.20276	-117.155152	PLASTIC	25	18	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS						0.010	0.035	2020	N	-	-	-	-	-
XVR-C06	XVR	SXVR	JONI LANE E OF 67+72		CARLSBAD	33.202265	-117.154514	PLASTIC	30	18	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS						0.004	0.041	2020	N	-	-	-	-	-
XVR-C07	XVR	SXVR	JONI LANE E OF 67+72		CARLSBAD	33.201846	-117.153264	PLASTIC	30	18	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	N	-	-	-	-	-
XVR-C08	XVR	SXVR	JONI LANE E OF 67+72		CARLSBAD	33.201437	-117.152921	PLASTIC	20	18	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS						0.045		2020	N	-	-	-	-	-
XVR-C09	XVR	SXVR	JONI LANE E OF 67+72		CARLSBAD	33.200367	-117.152512	GALVANIZED	24	21	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-
XVR-C10	XVR	SXVR	DEER SPRINGS PLACE		CARLSBAD	33.196156	-117.145119	STEEL	19	12	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS				0.005	0.041			2020	N	-	-	-	-	-
XVR-C11	XVR	SXVR	DEER SPRINGS PLACE		CARLSBAD	33.196085	-117.143945	GALVANIZED	43	16	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS					0.045			2020	N	-	-	-	-	-
XVR-C12	XVR	SXVR	DEER SPRINGS PARK		CARLSBAD	33.193755	-117.127367	GALVANIZED	20	30	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS				0.045				2020	N	-	-	-	-	-
XVR-C13	XVR	SXVR	DEER SPRINGS PARK		CARLSBAD	33.193362	-117.126348	PLASTIC	34	36	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS				0.045				2020	N	-	-	-	-	-
XVR-C14	XVR	SXVR	NORTH OF RENA DRIVE		CARLSBAD	33.18532	-117.1178	PLASTIC	20	24	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	N	-	-	-	-	-
XVR-C15	XVR	SXVR	NORTH OF RENA DRIVE		CARLSBAD	33.185213	-117.117758	PLASTIC	34	24	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	N	-	-	-	-	-
XVR-C16	XVR	SXVR	NORTH OF RENA DRIVE		CARLSBAD	33.1848	-117.117535	PVC	20	12	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	N	-	-	-	-	-
XVR-C17	XVR	SXVR	SOUTH OF 213+46BO		CARLSBAD	33.184582	-117.117414	TWO GALVANIZED	24	24	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	N	-	-	-	-	-
XVR-C18	XVR	SXVR	RANCHO VERONA		CARLSBAD	33.178337	-117.113468	GALVANIZED	25	24	Seasonal	Low	18	Good	Yearly	REMOVED SILT AND WEEDS	0.017						0.028	2020	N	-	-	-	-	-
XVR-C19	XVR	SXVR	SOUTH OF RANCHO VERONA		CARLSBAD	33.175876	-117.110793	PLASTIC	20	18	Seasonal	Low	5	Good	Yearly	REMOVED SILT AND WEEDS	0.030				0.015			2020	N	-	-	-	-	-
XVR-C20	XVR	SXVR	NORTH OF 258+40BO		CARLSBAD	33.175303	-117.110063	PLASTIC	20	36	Seasonal	Low	12	Good	Yearly	REMOVED SILT AND WEEDS	0.024						0.021	2020	N	-	-	-	-	-
XVR-C21	XVR	SXVR	NORTH OF 258+40BO		CARLSBAD	33.175157	-117.109684	GALVANIZED	24	48	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	N	-	-	-	-	-

[1] See "Sources" Tab
[2,3,4] See "Definitions" Tab

San Diego County Water Authority - Lake and Streambed Alteration Routine Maintenance Agreement
Culverts and Arizona Crossings

Facility Name/ID	ROW Zone	Pipeline	Location	Creek Name (if within 50 feet of culvert)	Watershed	Latitude	Longitude	Structure Material	Culvert Length (Linear Feet)	Culvert Diameter (Square Inches)	Flow Rate	Priority	Age	Condition	Maintenance Frequency	Required Maintenance	Environmental Setting (Existing Conditions 25-foot Radius) (Acres)[1]							Annual Reporting (2021)						
																	Aquatic/Riparian			Upland										
																	TIER I	TIER II	TIER III	TIER I	TIER II	TIER III	TIER IV	Previous Year Maintained	Maintained in Current Year? (Y/N)	Work within Channel Bed/Bank? (Y/N)[2]	"Substantial" Maintenance Activity per CFGC? (Y/N)[3]	Activities Contained Within Baseline Maint. Limits? (Y/N)[4]	If Applicable, Area Maintained Outside Baseline Limits (sq. ft.)	Maintenance Agreement Fee Required? (Y/N)
XVR-C22	XVR	SXVR	NORTH OF IVY DEL		CARLSBAD	33.17411	-117.107694	TWO GALVANIZED	19	30	Seasonal	Low	20	Poor	Yearly	REMOVED SILT AND WEEDS	0.025						0.020	2020	N	-	-	-	-	-
XVR-C23	XVR	SXVR	IVY DEL		CARLSBAD	33.173053	-117.106141	PVC	25	12	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS	0.045							2020	N	-	-	-	-	-
XVR-C24	XVR	SXVR	JACK RABBIT ACRE W E OF GI JOES		CARLSBAD	33.165739	-117.095313	GALVANIZED	24	15	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-
XVR-C25	XVR	SXVR	HUBBARD HILL		CARLSBAD	33.151135	-117.079375	GALVANIZED	20	10	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-
XVR-C26	XVR	SXVR	HUBBARD HILL		CARLSBAD	33.151148	-117.07743	GALVANIZED	20	12	Seasonal	Low	20	Good	Yearly	REMOVED SILT AND WEEDS							0.045	2020	N	-	-	-	-	-

[1] See "Sources" Tab
[2,3,4] See "Definitions" Tab