

San Diego Integrated Regional Water Management 2019 IRWM Implementation Grant Proposal Work Plan

Attachment 4 consists of the following items:

- ✓ **Work Plan.** This attachment includes a description of the tasks necessary to complete each project in the Proposal, including necessary deliverables, and the current status of each project.

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Project 1: Paradise Valley Creek Water Quality and Community Enhancement

Implementing Agency

Local Project Sponsor: City of National City

Partners: City of San Diego Transportation and Storm Water Department, Environmental Health Coalition, Paradise Creek Educational Park, ARTS Program, California Conservation Corps

Project Description

Project Description

The *Paradise Valley Creek Water Quality and Community Enhancement* project will reduce flood risks and improve water quality through creek improvements, stormwater capture, and infiltration (see **Figure 4-3** below). This project will remove 1.35 acres from the 100-year floodplain, treat 30 acre-feet per year (AFY) stormwater, and infiltrate 4.6 AFY of stormwater. The project will increase the flood conveyance capacity of the existing creek by upsizing a culvert and reducing erosion along the creek. The existing culvert will be replaced with a new 325-foot long 5-foot by 10-foot box culvert, which is properly sized for the 100-year flood flows in the creek, compared to the existing culvert which is too small to accommodate storm flows and results in flooding. Much of the creek upstream of Plaza Boulevard is concrete-lined channel. This project will remove the concrete lining and replace it with turf lining, which has proven successful for erosion control and reduction of sediment transport elsewhere in the region. Drought-tolerant vegetation will be planted along the creek for erosion control. Runoff from adjacent streets will be diverted to the creek for conveyance to the biofiltration basin (currently in construction from a previous phase). This will be achieved through modifications of the existing curb inlets, which will also provide safe access to the crosswalk at Paradise Valley Road and Plaza Boulevard and limit the amount of street flooding on Plaza Blvd, which is located along a sump crossing. By directing flows to the new biofiltration basin, stormwater will be captured, allowing pollutants to settle out before flows are conveyed downstream by the existing storm drain system. Slowing the flows by allowing it to pond in the basin also allows for infiltration of some of the stormwater into the groundwater basin. The new infrastructure constructed by the project will reduce the frequency of flooding and improve the stormwater quality through the area. Community members will be notified of the improvements via flyers and mailers, as well as handouts posted at key civic locations, door-to-door outreach, and installation of water quality interpretive signage, which will encourage the public to reduce their individual contributions to pollutant loading in stormwater in the project area.

Context

This project is being implemented by the City of National City in three phases. Phase 1, construction of the biofiltration basin, is already underway and is not included in this work plan because it was funded through Proposition 84 Clean Beaches Program and City match. Construction of Phase 1 is expected to be completed by February 2020. Phase 2 (the work plan included in this Proposal) includes channel erosion repair and installation of preventative measures to avoid future channel erosion, along with removal of the concrete lining in the upper reach of the creek within the project area and upsizing of the culvert under Plaza Boulevard. Phase 3 is a future phase that includes pedestrian safety features, an interpretive path, and educational public art, and is not included in this work plan. All design and environmental clearance for Phases 1-3 was performed prior to Phase 1 construction and was funded through the Proposition 1 Disadvantaged Community Involvement Grant.



Figure 4-1. Homes located near Paradise Creek.

Project Needs

FEMA Floodplain. The portion of the City of National City along Paradise Valley Road lies within a 100-year FEMA Special Flood Hazard Area (SFHA) Floodplain. Flooding occurs even during small storm events and the overall quality of life is negatively affected by flooding and pollution of the creek. When the creek floods, polluted water is conveyed into the surrounding neighborhoods. Homes within this DAC are built along the creek located

in the flood zone (see **Figure 4-1**), which increases their risk of flood-related damages. Capturing and treating stormwater through this project will address the flood-related concerns of the community.

Water Quality. This floodplain has been a large contributor of water quality impairment for the entire San Diego Bay watershed. The project site is located at the bottom of a hill that collects stormwater runoff and debris (see **Figure 4-2** and **Figure 4-4**) along the eastern side that confluences with the stormwater runoff from East Plaza Blvd. This stormwater carries trash, bacteria, metals, and other pollutants towards the creek on the western portion of the project site. Paradise Valley Creek drains into an impaired water body under the Clean Water Act (a lower portion of Paradise Valley Creek) 303(d) list of impaired water bodies for phosphorus and selenium. In addition to flood-related water quality impacts, the creek drains into San Diego Bay, which is 303(d) listed for mercury, PAHs, and PCBs. The project area overlies the San Diego Formation, a brackish groundwater basin whose water is extracted and treated by Sweetwater Authority to serve the cities of National City and Chula Vista, as well as the City of San Diego. Sweetwater Authority, the local water supplier, should be able to extract high quality water from the groundwater basin for potable use. Protecting and improving water quality in the creek is essential for maintaining the beneficial uses of these downstream water bodies, including municipal water supply and wildlife species and habitats. Capturing and treating stormwater through this project will address the water quality issues in the creek.



Figure 4-2. Debris found in creek that adds to stormwater pollution.

Project Benefits

Flood Control. The project will remove impervious creek bottom, install turf-reinforcement mats, upsize the culvert under Plaza Boulevard, and install curb cut-outs, increasing stormwater conveyance into the creek, increasing creek capacity for peak flows, and reducing overtopping of the banks. Increasing the culvert size will reduce flooding directly upstream of the culvert. The biofiltration basin will be able to accommodate higher volumes of water during large storm events. The 100-year storm event will be contained by the redesigned creek. This project will remove approximately 16 properties from the 100-year FEMA SFHA, which is approximately 1.35 acres of floodplain revision. FEMA floodplain changes were estimated by floodplain modeling performed as a part of project design in the *Hydrology and Hydraulics and Floodplain Report*.

Water Quality Improvement. The project will reduce sedimentation in the creek and biofiltration basin, helping to maintain the capacity of the basin and preventing additional pollution of the creek. The basin will provide infiltration and detain stormwater to allow particulates and associated pollutants to settle out. This is expected to result in load reductions of multiple constituents, including 6,834 lbs/year of total suspended solids (TSS), 51 lbs/year of total nitrogen, 11 lbs/year of total phosphorus, 2 lbs/year of copper, 1 lb/year of lead, and 15 lbs/year of zinc. Load reduction benefits were estimated by applying standard removal efficiencies from literature on biofiltration and infiltration treatment mechanisms. In total, the project will treat 30 AFY of stormwater flows (by allowing pollutants to settle out and through biofiltration) and will infiltrate 4.6 AFY. Long-term continuous hydrologic simulation based on characteristics of the tributary area and the proposed biofiltration basin was used to calculate the amount of water filtered and released and the amount of water infiltrated.

Reduction in Greenhouse Gases. By converting concrete-lined channels to vegetated channels, the project will also provide greenhouse gas (GHG) benefits through carbon sequestration. It is estimated 153 MT CO₂e of GHG will be removed by tree planting, which was calculated using the California ARB spreadsheet tool.

Climate Resilience. The proposed improvements to the creek will help to address climate resiliency by preparing the area for an increased occurrence of flashy storm events expected as a result of climate change.

Drought Resistance. The project will utilize drought-tolerant vegetation for creek stability in anticipation of increased duration and severity of droughts, and changes to precipitation patterns, arising from climate change.

Directly Benefits DAC. The project is in an underrepresented DAC where many of the residents are not native English speakers. This project was identified as a high-priority DAC project and included in the Region's *Proposition 1 DACI Grant* because it addresses a critical water need for improving water supply and infrastructure due to climate change. With the DACI Grant, the City has prepared the final drawings, CEQA, and permitting needed to implement the project.

Primary Quantified Benefits	
<p>Flood Control. 1.35 acres will be removed from the FEMA SFHA (up to 16 properties) through the installation of turf-reinforcement mats and upsizing of an existing box culvert.</p>	<p>Water Quality Improvement. By re-routing stormwater flows to the biofiltration basin, 30 AFY of stormwater will be treated. Load reduction is estimated to be: TSS: 6,834 lbs/yr; Total Nitrogen: 51 lbs/yr; Total Phosphorus: 11 lbs/yr; Copper: 2 lbs/yr; Lead: 1 lb/yr; and Zinc 15 lbs/yr.</p>
Additional Benefits	
<p>Reduction in Greenhouse Gases. 153 MT CO₂e of GHG will be removed by tree planting.</p> <p>Climate Resilience. Flood improvements will help the community be more resilient to future climate changes.</p> <p>Drought Resistance. Re-vegetation will use drought tolerant plantings.</p> <p>Directly Benefits DAC. Provides stormwater and flood control benefits to a DAC neighborhood.</p>	

DAC Status

This project serves a 100% disadvantaged community (DAC) and is requesting a 100% funding match waiver. The project area has a median household income (MHI) of \$42,178, which 66% of statewide MHI. Due to its status as a DAC and the severity of the impact of flooding issues in the project area, Paradise Creek has been identified as one of the top five problem areas in the San Diego RWQCB's *Environmental Justice Plan*. This project would directly address the flooding issue in the creek.

Completed Work

The City received a *Proposition 1 DACI Grant* for planning activities for this project, which allowed the City to prepare final design drawings, complete CEQA, and acquire all permits needed to implement the project. Additionally, a number of studies and reports have been completed to support the project. Construction on Phase 1 began on September 25, 2019. All completed work documents can be provided upon request.

Technical Feasibility Studies and Design:

- City of National City, *Hydrology and Hydraulics and Floodplain Report* (March 2018)
- City of National City, *Geotechnical Evaluations* (May 2017)
- City of National City, *Biological Technical Assessment* (February 2018)
- City of National City, *Wetland Jurisdictional Delineation* (December 2017)
- Aerial Topography augmented with field survey (May 2017)
- Final Design Drawings and Specifications (August 2018)

Readiness to Proceed:

- ✓ CEQA and NEPA MND Certified
- ✓ Final Design Completed
- ✓ USACE 404 Permit
- ✓ RWQCB 401 Permit
- ✓ CDFW 1602 Permit

CEQA, NEPA, and Permits:

- Mitigated Negative Declaration for Phases 1-3 (certified June 2019)
- CEQA NOD filed with State Clearinghouse (SCH #2017121045)
- U.S. Army Corps of Engineers Section 404 permit (July 2019)
- San Diego RWQCB 401 permit (June 2019)
- California Department of Fish and Wildlife 1602 permit (February 2019)

Proposed Tasks

A Work Plan for the *Paradise Valley Creek Water Quality and Community Enhancement* project, including the anticipated tasks necessary to complete the project, deliverables, and current status of the project, is provided in

Table 4-1 below. The information provided below is based on the construction schedule included in the MND and plans developed for the entire Phase 1-3 project by National City staff and their consultant (HDR). City of National City staff will oversee Tasks 1, 2, and 8. A contracted consultant is responsible for completing Task 7, 9, 10, and 11.

Table 4-1: Work Plan for Paradise Valley Creek Water Quality and Community Enhancement

Task and Description of Work to be Completed	Deliverables	%*
Row (a): Project Administration		
<p>1: Project Management – A City Project Manager will be assigned to manage the project’s grant agreement including project compliance with grant requirements, and submittal of materials needed to execute and close out the grant agreement. The project manager will prepare invoices including relevant supporting documentation for submittal to DWR via SDCWA, the grantee under this Proposal. Coordination with DWR and SDCWA is included here. This task also includes administrative responsibilities such as coordinating with consultants and project partners.</p>	<ul style="list-style-type: none"> • Environmental Information Form (EIF) • Documents required for grant agreement execution • Invoices 	0%
<p>2: Reporting – This task consists of preparing quarterly progress reports detailing work completed during the reporting period. Reports will be submitted to SDCWA, the grantee under this Proposal, for review and inclusion with a progress report and submitted to DWR. This task will also involve preparing the Project Completion Report and submitting to SDCWA no later than 90 days after project completion. The City of National City will address and incorporate any comments from SDCWA and DWR for the preparation and submission of a Final Project Completion Report in accordance with the grant agreement.</p>	<ul style="list-style-type: none"> • Quarterly Project Progress Reports • Project Completion Report 	0%
Row (b): Land Purchase/Easement		
<p>3: Land Purchase – No land purchases or easements are required for this project because the City owns the land (purchased in the early 1900s).</p>	N/A	N/A
Row (c): Planning/Design/Engineering/Environmental Documentation		
<p>4: Feasibility Studies – All feasibility studies have been completed (see Completed Work, above). No additional feasibility studies will be prepared.</p>	N/A	100%
<p>5: CEQA Documentation – CEQA for the project was completed under the DACI Grant. A Final MND was completed in February 2019 and certified in June 2019. All required Tribal notifications (per PRC §75102) were completed during the CEQA process. No additional CEQA is needed.</p>	N/A	100%
<p>6: Permitting – All required permits to begin construction were acquired in 2019 (see Completed Work, above). No additional permits are needed.</p>	N/A	100%
<p>7: Design – Design for the project was completed under the DACI Grant (see Completed Work, above). No additional design is needed.</p>	N/A	100%
<p>8: Project Performance Monitoring Plan – This task involves developing and submitting a Project Performance Monitoring Plan, including baseline conditions, monitoring systems to be used, methodology of monitoring, frequency of monitoring, location of monitoring points, and any other stipulations required by DWR in the Final Grant Agreement.</p>	<ul style="list-style-type: none"> • Project Performance Monitoring Plan 	0%
Row (d): Construction/Implementation		
<p>9: Contract Services – This task includes selection of a construction contractor through a formal bid process. This task includes preparation of a bid package specific to Phase 2 elements, including minor adjustments to final design drawings to reflect just the Phase 2 elements, review of contractor bids, award of the construction contract, and execution of a construction contract. Once contracts are executed, the City will issue a Notice to Proceed.</p>	<ul style="list-style-type: none"> • Bid Documents • Proof of Advertisement • Notice of Award • Notice to Proceed 	0%
<p>10. Construction Administration – This task includes managing contractor submittal review, answering requests for information, and issuing work directives. Construction will be observed by a construction manager who will document pre-construction conditions, maintain daily inspection reports, prepare change orders,</p>	<ul style="list-style-type: none"> • Notice of Completion • Letter of Map Revision • As-Built Drawings 	0%

Task and Description of Work to be Completed	Deliverables	%*
<p>address contractor questions, review the project schedule, review submittals and pay requests, provide support with design, and notify the contractor of deficient work. A Letter of Map Revision will be required upon the completion of the project to remove the properties from the FEMA SFHA. As-Built drawings will also be prepared under this task.</p>		
<p>11. Construction/Implementation Activities – Construction/Implementation includes activities for removal of concrete lining in the creek, removal of the existing culvert and installation of the upsized culvert, creek bank stabilization, and planting of native vegetation. All work along the creek will be completed in compliance with applicable permits and standards.</p>		
<p><u>Subtask 11.1: Mobilization, Demobilization and Site Preparation</u> – Mobilization and demobilization will be included for setting up the construction site and cleaning up to restore the site to pre-construction conditions. There will also be site preparation, which includes preparing and implementing a Stormwater Pollution Prevention Plan, installing construction erosion controls, preparing and implementing a Traffic Control Plan, developing a dewatering plan, and installing a dewatering system for construction.</p> <p><u>Subtask 11.2: Channel Improvements</u> – Concrete lining will be removed from 700 linear feet of the creek, 35,500 square feet of turf reinforcement will be installed along the creek, and re-vegetation with drought-tolerant landscaping will be implemented to improve erosion control in the creek.</p> <p><u>Subtask 11.3: Culvert Replacement</u> – Upsizing the existing culvert will include removal of the existing culvert and installation of a new box culvert. This subtask will replace the existing culvert crossing with 325 linear feet of 5-foot by 10-foot reinforced concrete box culvert. To reduce downstream erosion from flows through the culvert, one-ton of rip rap will be installed at the culvert’s outlet.</p> <p><u>Subtask 11.4: Curb Construction and Safety Measures</u> – Modifications of the existing curb inlets to divert more flows into the creek will be made, including installation of an 18-inch diameter RCP storm drain and concrete curb inlet, along with concrete headwalls. Two ADA ramps will be installed, and the Plaza Blvd. crosswalk will be installed during this work to improve safety at the site.</p> <p><u>Subtask 11.5: Educational Signage</u> – Three interpretive signs will be installed to educate the public on the project benefits. The interpretive signage will contain facts about the local habitat and wildlife, water quality and the interrelation between water quality, surface water, and groundwater, how the project functions, and contact information for public communication.</p>	<ul style="list-style-type: none"> • Engineer’s Certification • Stormwater Pollution Prevention Plan • Traffic Control Plan • Dewatering Plan • Pre-and post-construction photographs 	<p>0%</p>
<p>* The right-hand column displays % complete for each task.</p>		

Figure 4-3: Paradise Valley Creek Water Quality and Community Enhancement Project Map

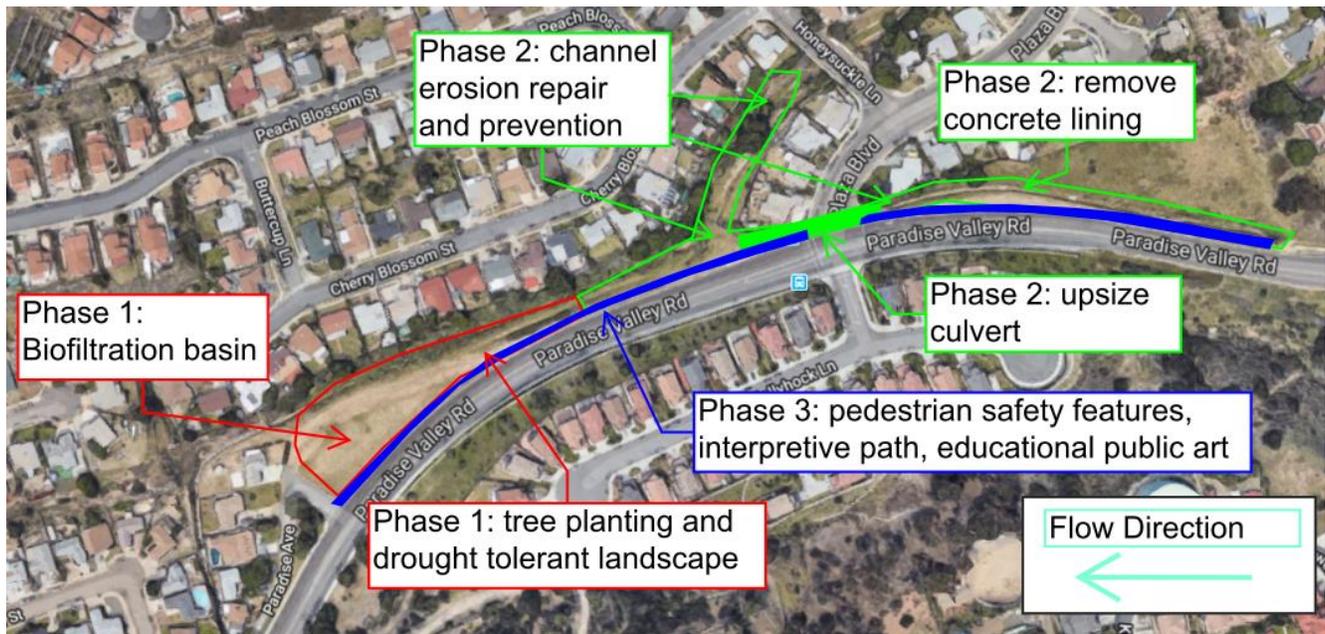
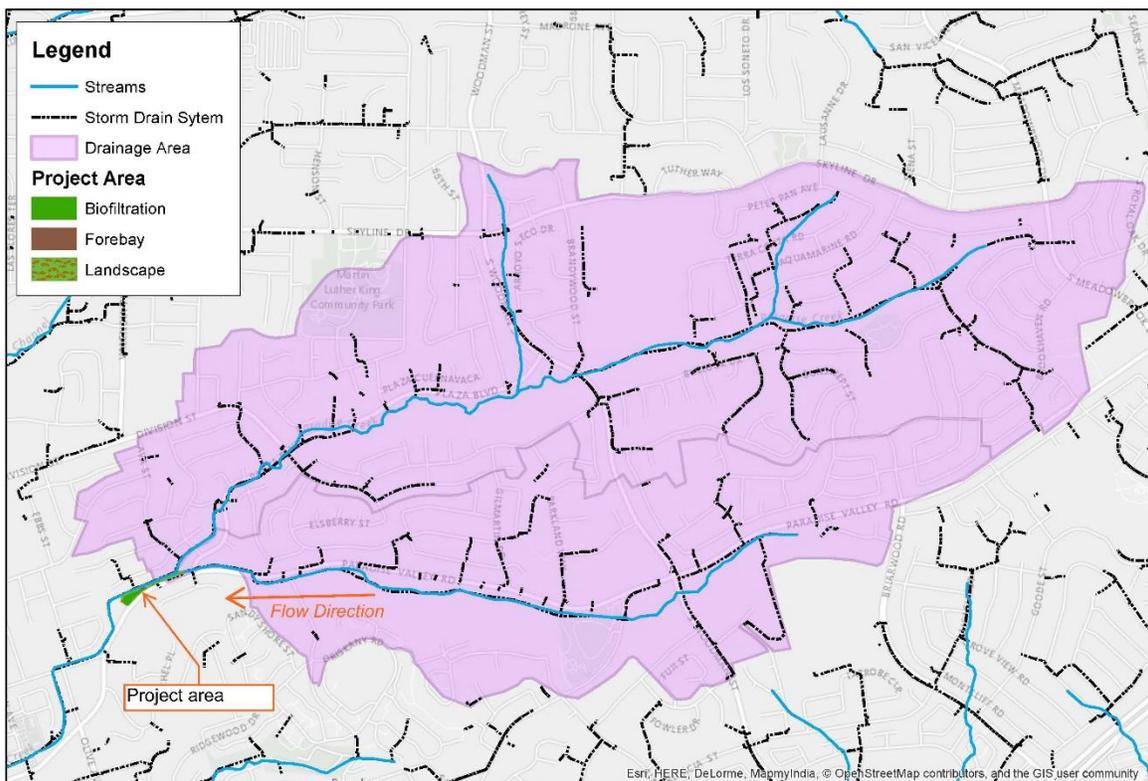


Figure 4-4: Paradise Valley Creek Drainage Area



Paradise Creek Biofiltration Basin Drainage Area

Project 2: North City Pure Water Facility Influent Pump Station

Implementing Agency

Local Project Sponsor: City of San Diego

Funding Partners: U.S. Environmental Protection Agency and U.S. Bureau of Reclamation

Project Description

Project Description

The *North City Pure Water Facility Influent Pump Station* is a key part of Phase 1 of the City of San Diego's multi-phased Pure Water San Diego Program, a large-scale potable reuse program. Phase 1 will provide an annual average of approximately 30 million gallons per day (mgd) of new local water supply to the City of San Diego, or 33,600 AFY. The scope of work included in this Proposal is the Pure Water Facility Influent Pump Station, one component of Pure Water San Diego - Phase 1 Program. The pump station will transport 42.5 mgd of non-chlorinated tertiary treated effluent from the North City Water Reclamation Plant (NCWRP) to the future North City Pure Water Facility (Pure Water Facility), where it will be purified for potable reuse (see **Figure 4-7**). The pump station is a crucial component of Pure Water because it connects the source of recycled water (NCWRP) with the Pure Water Facility, where it will be treated for potable use (see **Figure 4-8**).

The *North City Pure Water Facility Influent Pump Station* is a two-story cast-in-place concrete structure which will be placed south of the existing chlorine contact tanks and east of the existing effluent pump station at the NCWRP. There will be two main rooms in the facility: a pump room and an electrical room. The pump room will extend the entire north side of the building and have walls that extend approximately 30 feet to the roof. At the south end of the building will be the electrical room. The architectural concept of the new pump station building will emulate the architectural character of the existing NCWRP. Overall, construction of the pump station will encompass the following work: geotechnical, site civil, structural, mechanical, plumbing, fire protection, electrical and instrumentation and control. The new pump station will deliver a consistent flow as required by the treatment demands of the Pure Water Facility and will be designed to be as reliable as possible because it will serve as the sole delivery source of influent to the Pure Water Facility. The pump room will be a rectangular space approximately 70 by 30 feet and will be equipped with five adjustable speed vertical turbine pumps (four duty units and one standby unit). The pump station flow will range from a minimum of 6.0 mgd with one pumping unit in operation to a maximum of 42.5 mgd with four pumping units in operation. Similarly, the electrical room will be a single rectangular space approximately 37 by 14 feet. The pump station will be connected to a 42-inch diameter cement mortar lined and coated welded steel pipe approximately 1,525 feet long, which will deliver tertiary treated flows from the NCWRP to the Pure Water Facility. The Phase 1 conveyance pipeline is being constructed concurrently with the pump station but is not included in this scope of work to simplify this project for grant administration and schedule purposes.

Context

Pure Water San Diego is a phased, multi-year program that will provide 33% of San Diego's water supply locally by 2035. The Pure Water Program: (1) will use proven technology to clean recycled water to produce safe, high-quality drinking water; (2) provide a reliable, sustainable water supply; (3) offer a cost-effective method to meet San Diego's water needs; and (4) address the requirement to renew the Point Loma Wastewater Treatment Plant (PLWTP) Clean Water Act Section 301(h) modified permit every five years. Under San Diego's existing water system, only 8% of the wastewater leaving homes and businesses is recycled; the rest is treated and discharged into the ocean. The Pure Water Program transforms the City's water system into a complete water cycle that maximizes our use of the world's most precious resource, water. Pure Water San Diego – Phase 1 is comprised of several projects that will deliver 30 mgd of purified water to Miramar Reservoir. The purified water will blend with the City's imported and local water sources and then will be treated again at the Miramar Drinking Water Treatment Plant and distributed to the public.

Project Need

Reduce Reliance on Imported Water. 85-90% of the City of San Diego’s water supply is imported via the State Water Project (SWP) and the Colorado River. This reliance on imported water leaves the City vulnerable to water restrictions due to drought and demand conditions, higher costs to purchase and transport water, and other forces outside of the City’s control. The City purchases imported water from SDCWA, the region’s wholesaler. In 2018, imported water from the Metropolitan Water District of Southern California (MWD), the Imperial Irrigation District, and the Colorado River made up 73% of the SDCWA supply. This local and regional dependence on imported water makes the City vulnerable to supply disruptions. During the drought, SWP allocations to SDCWA were limited to 5% in 2014, and 20% in 2015. The SWP has not had 100% allocation since 2006. Any reduction in purchased SDCWA water will directly result in a reduction of SDCWA’s imported water supplies, which are considered the “last” drop of water after local desalination supplies are utilized.

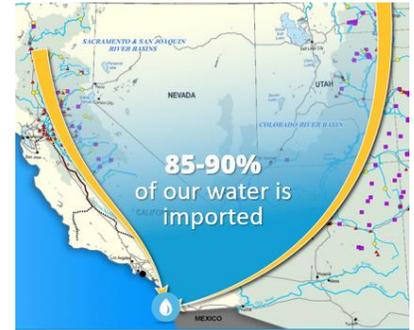


Figure 4-5. Almost all of San Diego’s water is imported from sources that start much further upstream.

Single-Use System. Although a portion of the City’s wastewater is recycled for non-potable reuse, the City primarily has a single-use system, meaning wastewater is treated and discharged to the Pacific Ocean after one use. Non-potable recycled water represented approximately 4% of the City’s total water in 2015 and is projected to make up just under 7% of supplies in 2020, per the City’s *2015 Urban Water Management Plan*.

Limited Local Supply. The City has access to limited groundwater supplies which comprise only 0.2% of total supplies. Other sources of local supply are limited or provide fewer benefits than potable reuse. Increasing water reuse is the preferred strategy to improve San Diego’s local supply and supply reliability. Pure Water San Diego will complete the City’s water cycle by treating and using wastewater for both potable and non-potable use.

Supply Reliability. Supply reliability is threatened by the impacts of climate change, which is expected to increase temperatures, precipitation variability, water demands, and wildfires; decrease availability of imported supplies; and cause sea level rise. The *San Diego IRWM Plan’s* Climate Change Vulnerability Assessment found that SWP supply availability is expected to decrease by 25%, and Colorado River supplies are expected to decrease by 20%, resulting in a regional shortfall of 164,000 AFY imported water. This decrease in imported supply was identified as the only “very high” priority in the vulnerability assessment. Additionally, supply reliability in the face of drought was identified as a “high” priority level and a decrease in groundwater supply a “medium” priority. By contributing to a new local supply that is reliable even during drought, the project will help to address reliability concerns exacerbated by climate change, while also offsetting energy demands (and consequently greenhouse gas emissions) associated with importing water.

Regulatory Constraints. The PLWTP currently operates as a chemically enhanced primary treatment facility with a modified 301(h) NPDES Permit, which is renewed every five years. Permit renewal applications request modified requirements for biochemical oxygen demand (BOD) and total suspended solids (TSS) discharged to the Pacific Ocean. By offloading flows to PLWTP, the project will reduce pollutants sent to PLWTP for treatment, thereby allowing it to continue to retain its current treatment process.

Project Benefits

Potable Water Supply. This project is a key component of Pure Water San Diego – Phase 1, and as such is claiming the full benefit of Phase 1 (creation of 33,600 AFY potable water). This benefit is based on the design capacity of Pure Water San Diego – Phase 1, known availability of tertiary effluent supplies, and water demands in the City, guaranteeing the water produced will be used.

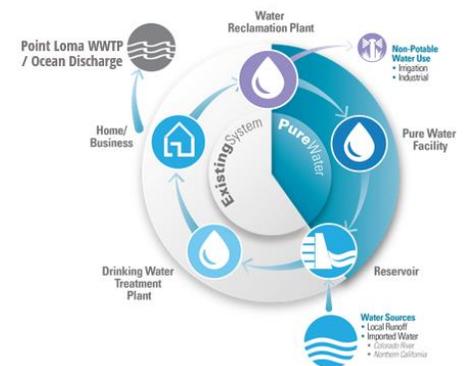


Figure 4-6. Pure Water San Diego completes the water cycle.

Reduction in Greenhouse Gases. Based on the energy mix of California’s grid (per California Energy Commission) and emissions factors from the U.S. EPA for different energy grids, GHG emissions are 0.327 metric tons of carbon dioxide equivalent per megawatt hour (MT CO₂e/MWh) of energy consumed in California.

Importing and treating imported water uses 2.297 MWh/AF, from California Public Utilities Commission *Embedded Energy in Water Pilot Programs Impact Evaluation*. To import 33,600 AFY would require 77,179 MWh/year. In contrast, the estimated average energy demand for Phase 1 is approximately 13,200 MWh/year. The project would therefore offset energy demands by 63,979 MWh/year, or 20,935 MT CO₂e/year.

Supply Reliability. This project creates an entirely new local water supply for the region, improving supply reliability because this local supply will be available in all climate and demand conditions.

Climate Resilience. Pure Water San Diego will help to address climate resiliency by preparing the area for an increased occurrence of drought conditions expected as a result of climate change.

Regulatory Certainty. Requirements to renew the PLWTP modified permit will be addressed, thereby providing the City of San Diego with greater regulatory certainty.

Primary Quantified Benefits	
Potable Water Supply. 33,600 AFY of advanced treated water produced for potable reuse.	Reduction in Greenhouse Gases. 20,935 MT CO ₂ e/year offset through decreased purchase and transport of imported water.
Additional Benefits	
Supply Reliability. New local water supply will be created for the region, improving supply reliability.	
Climate Resilience. Local water supply will help the community be more resilient to future climate changes.	
Regulatory Certainty. Requirements to renew PLWTP modified permit will be addressed.	

DAC Status

The project does not meet the 75% DAC threshold to qualify as a DAC project. However, DAC and EDA communities found within the City of San Diego’s service area will benefit from creation of a new local water supply, addressing PLWTP permit regulations, and associated water cost stability. The Fleet Science Center will continue to partner with the City to outreach to DACs about the project.

Completed Work

The City of San Diego has invested many years into the development of Pure Water San Diego. The pilot project demonstrating feasibility of advanced water purification for potable reuse was constructed in 2013 (by *Proposition 50-Round 2 Grant*), and a series of technical feasibility studies was completed between 2006 and 2019. The project is ready to begin construction, and contracts have been issued for program and construction management. All completed work can be provided upon request.

Technical Feasibility Studies and Design:

- City of San Diego, *Water Reuse Study* (March 2006)
- City of San Diego, *Advanced Water Treatment Research Studies* (August 2007)
- City of San Diego, *Recycled Water Study* (July 2012)
- City of San Diego, *Advanced Water Purification Facility Study Report and Final Demonstration Project Report* (January 2013)
- City of San Diego Public Utilities Department, *Final Draft Title 22 Engineering Report for North City Pure Water Project* (April 2019)
- City of San Diego, *North City Pure Water San Diego Program Environmental Impact Report* (Jan 2018)
- Final Design Drawings and Specifications (October 2018)

Readiness to Proceed:

- ✓ CEQA and NEPA Final EIR Certified
- ✓ CEQA and NEPA Record of Decision
- ✓ USACE CWA 404 Permit
- ✓ City of SD Site Development Permit
- ✓ RWQCB 401 Permit
- ✓ USFWS ESA Section 7 Consultation
- ✓ SHPO Section 106 Consultation

CEQA, NEPA, and Permits:

- Final Environmental Impact Report (April 4, 2018)
- CEQA NOD filed with State Clearinghouse (April 12, 2018)
- NEPA Record of Decision (November 1, 2018)

- U.S. Army Corps of Engineer (USACE) Section 404 permit (December 2018)
- City of San Diego Site Development Permit (April 2018)
- San Diego RWQCB Section 401 permit (December 2018)
- USFWS ESA Section 7 Consultation (as part of NEPA, November 1, 2018)
- SHPO Section 106 Consultation (as part of NEPA, November 1, 2018)

Proposed Tasks

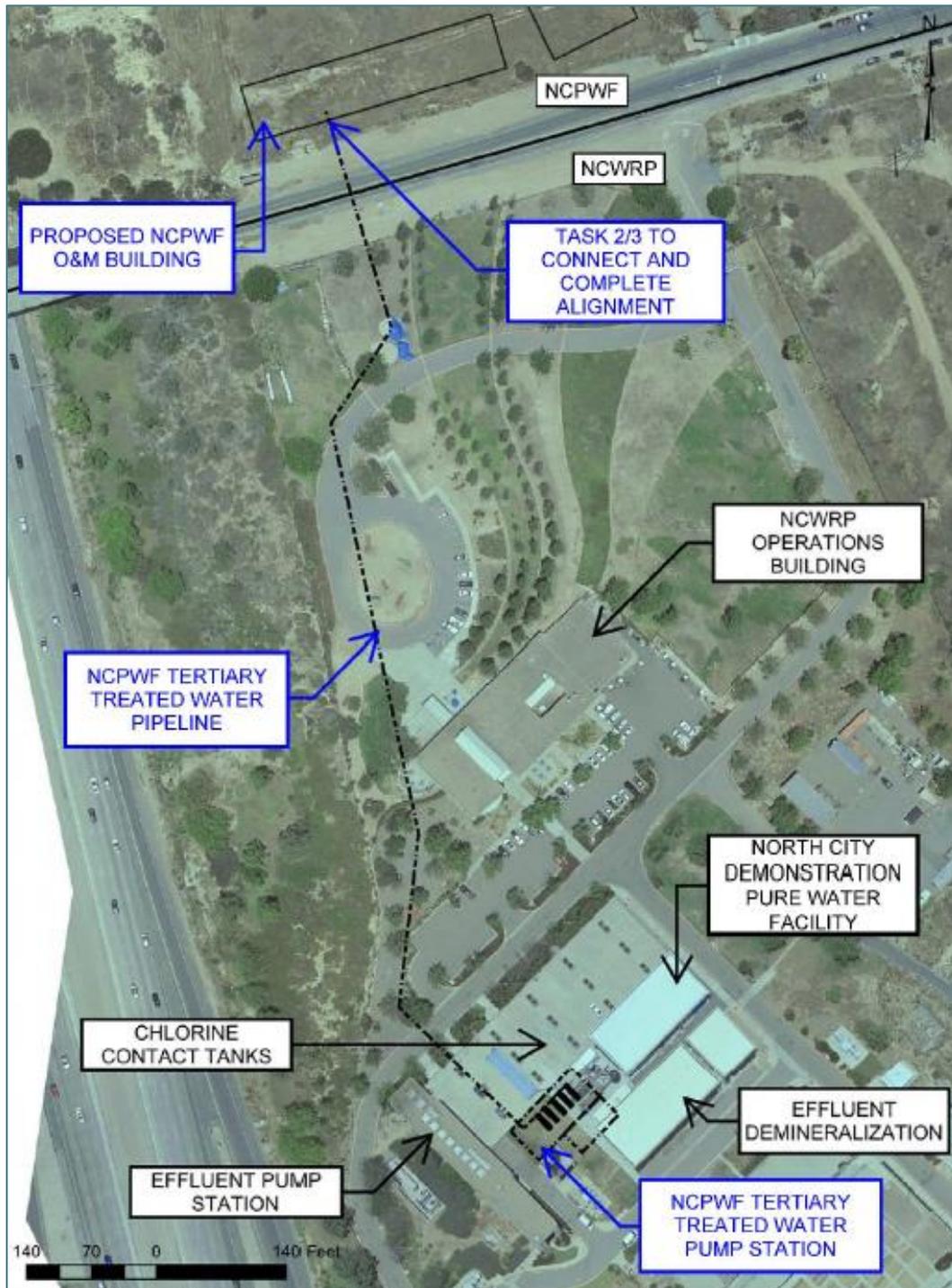
A Work Plan for the *North City Pure Water Facility Influent Pump Station*, including the tasks necessary to complete the project, deliverables, and current status of tasks, is provided in **Table 4-2** and is based on information from the City's WIFIA Quarterly Report: Phase 1 North City Pure Water Project. City of San Diego staff will oversee Task 1, 2, and 8. Construction administration (Task 10) will be completed by Parson/Black & Veatch as part of the larger Pure Water San Diego – Phase 1 program, and is not included as part of this scope of work or budget.

Table 4-2: Work Plan for North City Pure Water Facility Influent Pump Station

Task and Description of Work to be Completed	Deliverables	%*
Row (a): Project Administration		
1: Project Management – A City project manager is assigned to oversee and monitor implementation of Pure Water San Diego. The project manager will maintain and monitor the project schedule to ensure implementation is completed in a timely manner. This task also includes preparation of invoices for quarterly submittal to SDCWA (as the grantee for the San Diego IRWM Region), who will submit to DWR. The City of San Diego is not seeking funding for direct project administration costs through this application.	<ul style="list-style-type: none"> • Environmental Information Form • Financial Statements • Invoices and supporting documentation 	0%
2: Reporting – This task consists of preparing quarterly progress reports detailing work completed during the reporting period. This task also includes preparing the Project Completion Report following completion of construction (Task 11). All reports will be submitted to SDCWA as the region's grantee. A Draft Project Completion Report will be submitted within 90 days of completion of construction and revised and resubmitted as the Final Project Completion Report following comments from DWR.	<ul style="list-style-type: none"> • Quarterly Project Progress Reports • Final Project Completion Report 	0%
Row (b): Land Purchase/Easement		
3: Land Purchase – This project is being constructed on City-owned property, which was acquired by the City in 1874. No land purchase or easement acquisition is required.	N/A	N/A
Row (c): Planning/Design/Engineering/Environmental Documentation		
4: Feasibility Studies – All feasibility studies have been completed (see Completed Work, above). No additional feasibility studies will be prepared.	N/A	100%
5: CEQA Documentation – CEQA and NEPA have both been completed (see Completed Work, above). The Final EIR was completed in February 2018 and certified in April 2018. No additional CEQA documentation is required.	N/A	100%
6: Permitting – All required permits to begin construction were acquired in 2018 and 2019 (see Completed Work, above). No additional permit acquisition is necessary.	N/A	100%
7: Design – Final design was completed in October 2018 for all Pure Water San Diego – Phase 1 components, including the project included in this Proposal. The final bid package has been completed and is anticipated to advertise on December 11, 2020.	N/A	100%
8: Project Performance Monitoring Plan – This task involves developing and submitting a Project Performance Monitoring Plan, including baseline conditions, monitoring systems to be used, methodology of monitoring, frequency of	<ul style="list-style-type: none"> • Project Performance Monitoring Plan 	0%

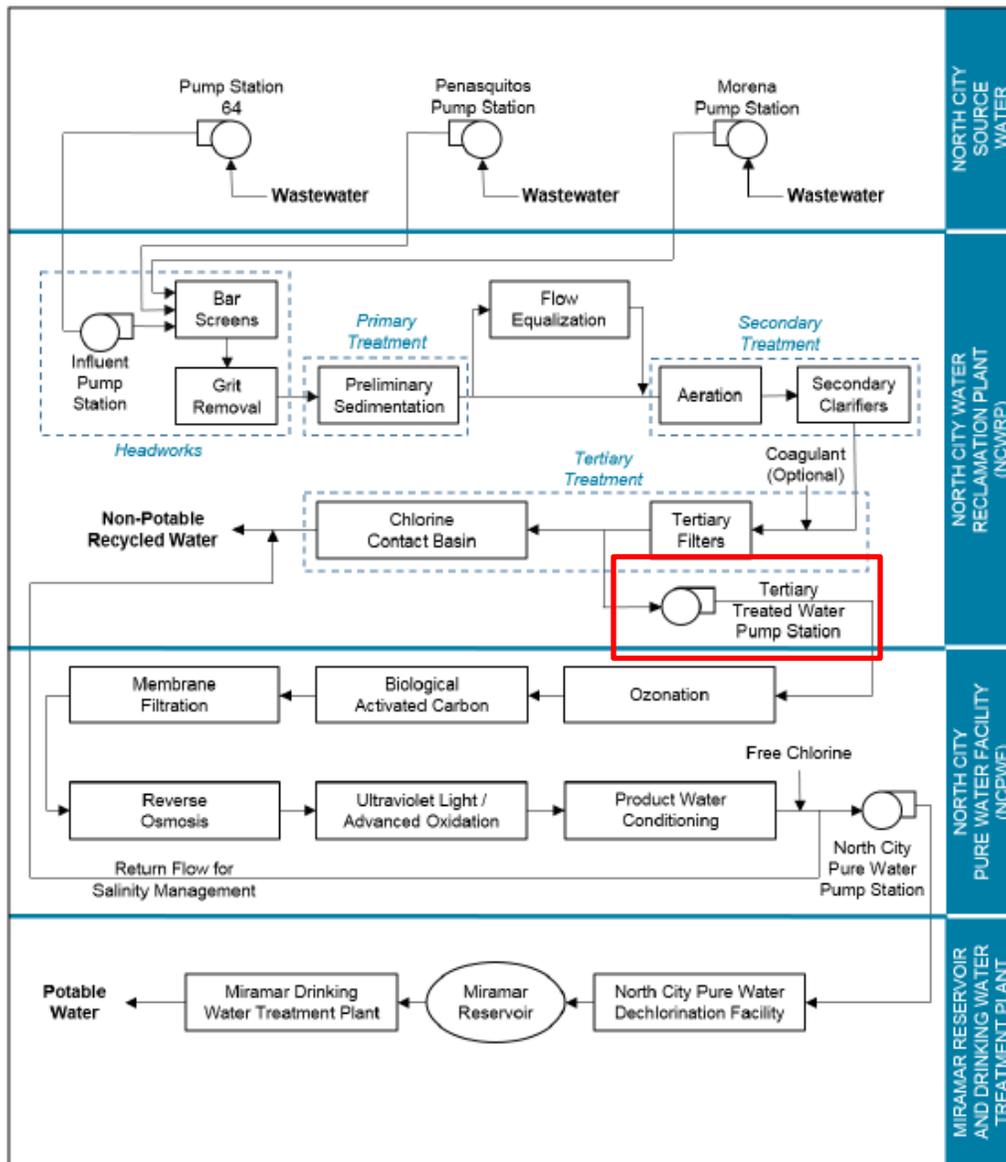
Task and Description of Work to be Completed	Deliverables	%*
monitoring, location of monitoring points, and any other stipulations required by DWR in the Final Grant Agreement.		
Row (d): Construction/Implementation		
9: Contract Services – A construction contractor for the influent pump station will be secured, however these costs will not be included in the scope of work for this Proposal because contracting will be completed by City staff and is not needed for funding match requirements.	NA	0%
10. Construction Administration – Construction will be observed by a competent field inspector or construction manager from Parsons/Black & Veatch who will document pre-construction conditions, maintain daily inspection reports, prepare change orders, address questions of the contractor, review the project schedule, review submittals and pay requests, and notify the contractor of deficient work. Construction administration will be conducted for the Pure Water San Diego – Phase 1 project, including the influent pump station. Because it is difficult to separate construction management for the influent pump station from overall Phase 1 construction management, these costs are not included in the scope of work or budget for this Proposal.	N/A	0%
11. Construction/Implementation Activities – Construction/Implementation includes mobilization and demobilization, demolition, construction of a pump station building, installation of pumps, and restoration of disturbed areas to pre-construction conditions. Construction activities will be in compliance with necessary standards. Construction will involve installation of a 42.5 mgd pump station at the NCWRP.		
<u>Subtask 11.1: Construct Pump Station Building</u> – The new Pure Water Influent pump station is a two-story cast-in-place concrete structure. There are two main rooms in the facility; a pump room, and an electrical room. The pump room is the entire north side of the building and has walls that extend approximately 30 feet to the roof. At the south end of the building is the electrical room. Construction of the pump station will encompass the following work: geotechnical, site civil, structural, mechanical, plumbing, fire protection, electrical and instrumentation and control. This task will construct the pump station building, which will involve excavation of 6,550 cubic yards for the structure and construction of the two story- building.	<ul style="list-style-type: none"> • Pre- and post-construction photographs • As-Built Drawings • Engineer’s Certification 	0%
<u>Subtask 11.2: Install Pumps</u> – This subtask will include installation of five adjustable speed vertical turbine pumps (four duty units and one standby unit). This subtask will also include installation of a 10,000 gallon surge tank, including site preparation, construction, and clean-up activities.	<ul style="list-style-type: none"> • Pre- and post-construction photographs • As-Built Drawings • Engineer’s Certification 	0%
<u>Subtask 11.3: Electrical, Controls, and Appurtenances</u> – This subtask will include installation of an air compressor, installation of electrical controls and instrumentation, installation of plumbing and HVAC in the building, 170 linear feet of utilities piping, 106 linear feet of 6-inch drain line, 345 linear feet of process pipe, and appurtenances.	<ul style="list-style-type: none"> • Pre- and post-construction photographs • As-Built Drawings • Engineer’s Certification 	0%
* The right-hand column displays % complete for each task.		

Figure 4-7: North City Pure Water Facility Influent Pump Station



Source: North City Pure Water Project Title 22 Engineering Report (April 2019). Note – the North City Pure Water Facility Influent Pump Station is referred to as the NCPWF Tertiary Treated Water Pump Station in that document.

Figure 4-8: Pure Water – Phase 1 Process Schematic



Source: North City Pure Water Project Title 22 Engineering Report (April 2019). Note – the North City Pure Water Facility Influent Pump Station is referred to as the NCPWF Tertiary Treated Water Pump Station in that document (circled in red).

Project 3: 2020 Regional Water Use Efficiency Program

Implementing Agency

Local Project Sponsor: San Diego County Water Authority

Partners: Mission Resource Conservation District

Project Description

Project Description

The San Diego County Water Authority (SDCWA) service area covers a total of 947,000 acres encompassing the western third of San Diego County. The *2020 Regional Water Use Efficiency Program* will be implemented throughout SDCWA's service area, which includes its 24 member agencies, who together serve 95% of the county's population. The program includes landscape upgrade incentives and agricultural incentives. Landscape upgrade incentives involve turf rebates, landscape makeovers, and landscaper training, together referred to as the Landscape Efficiency Program (LEP). Agricultural incentives will be offered to growers that invest in improving irrigation system efficiency through the Agricultural Irrigation Efficiency Program (Ag IEP).

Under the LEP, SDCWA will promote outdoor water use efficiency and reduction in water use by offering incentives to replace turf grass with sustainable landscapes. To streamline administrative and marketing costs, and reduce customer participation hurdles, grant funds for turf rebates will be used to supplement the base level rebate offered through Metropolitan Water District of Southern California's (MWD) regional turf replacement program. This approach has proven successful in increasing participation levels, while minimizing overhead costs. Currently, MWD offers a rebate of \$2 per square foot to remove turf grass and replace it with sustainable landscaping. Grant funds through this Proposal will add an additional \$1 per square foot, for a total rebate of \$3 per square foot. Based on the budget (see Attachment 5), 3,952,257 square feet, or roughly 90 acres, of turf will be converted by this project, funded through a combination of grant and match. To support and promote the LEP, SDCWA will deliver two training programs that promote successful implementation of water-wise landscaping and support long-term success of the turf conversions. The WaterSmart Landscape Makeover (WSLM) Program educates homeowners about outdoor water use efficiency using climate-appropriate landscape design through a four-class series, three-hour workshops, and online resources. The Qualified Water Efficient Landscaper (QWEL) Program provides proactive, locally-based training and certification for landscape professionals on sustainable landscaping practices appropriate for San Diego's climate. Each 20-hour QWEL course includes training on proper plant selection, irrigation system and landscape design, soils, maintenance and water budgeting. QWEL classes will be delivered in both English and Spanish, and incorporated into the curriculum of semester-long horticultural classes at local community colleges. SDCWA established a goal to provide 15% of the QWEL trainings in DACs.

The Ag IEP will offer opportunities to local farmers to improve on-farm irrigation system efficiencies. The program will provide farmers with technical assistance and cost-sharing as reimbursement for recommended irrigation system equipment retrofits that improve distribution uniformity and efficiency. Program participants will receive a detailed report which provides current irrigation system efficiency levels and recommends improvements that integrate the use of efficient irrigation technology, components, and irrigation scheduling practices. Growers will receive an itemized list of suggested components and a 50% cost share estimate. The grant will fund incentives of approximately \$550 per acre for 700 acres of irrigated cropland upgrades. Based on a similar program implemented in Riverside County, it is expected that the retrofits implemented under this program will show an increase in efficiency of 20%.

Context

Water-use efficiency is an important ongoing component of SDCWA's long-term strategy to increase the reliability of the San Diego region's water supply. Between 1990 and 2018, SDCWA's programs and initiatives contributed to a per capita potable water use decrease of 43%. The savings were achieved in part through active measures and programs aligned with the Board-adopted water-use efficiency policy principles which provide long-term, strategic direction for the evaluation, prioritization, development and implementation of water-use efficiency projects, programs, and other efforts. SDCWA has a history of successful grant partnerships with DWR that have

contributed to the region's economic growth and reduction in water use. The programs developed under these previous grants formed the basis for elements of the LEP and Ag IEP, which builds on the successes and lessons learned from the previous grants and would not otherwise be funded.

Project Need

Reduce Reliance on Imported Water. In 2018, approximately 74% of the water for SDCWA's service area was imported from the State Water Project and Colorado River. Decreasing reliance on imported water is a cornerstone of the region's strategy to improve supply reliability, particularly through reduced reliance on MWD supplies.

Supply Reliability. Supply reliability is threatened by the impacts of climate change, which is expected to increase temperatures, precipitation variability, water demands, and wildfires; decrease availability of imported supplies; and cause sea level rise. Imported water is costly (in terms of money and energy) and its reliability is variable, particularly in the face of climate change impacts. The *San Diego IRWM Plan's* Climate Change Vulnerability Analysis projected a 164,000 AFY shortfall in imported supplies, and this decrease in imported supply is the only "very high" climate change vulnerability issue identified. The region's dependence on imported water can only be decreased by developing new local supplies or reducing demands.



Figure 4-9. Improvements from sustainable landscaping.

Water Use Efficiency Regulations. SDCWA has a history of designing and implementing successful water-use efficiency programs. Between 1990 and 2018, SDCWA's programs and initiatives contributed to a 43% per-capita potable water use decrease. New regulations for water use efficiency in both indoor and outdoor water use are on the near horizon. This program represents a proactive approach to meeting the requirements of these upcoming regulations through behavioral changes supported by incentives and education (see **Figure 4-9**).

Water Use Behavioral Change. If water suppliers do not promote the value of water and share the skills and knowledge necessary to make sustainable changes in water use behaviors, wasteful outdoor water use will continue under the status quo. The WSLM educates homeowners about outdoor water use efficiency using climate-appropriate landscape design through four-class series, three-hour workshops and online resources. This program provides the in-person, hands-on support necessary for a successful turf conversion project. The QWEL program provides free, local training and certification for landscape professionals. Professional certification through QWEL (an EPA WaterSense-labeled program) demonstrates that irrigation professionals have knowledge and capability specific to the region's local climate. QWEL certification has become recognized as a valuable business investment in the San Diego region and a viable alternative to other certification programs such as CLIA (certified landscape irrigation auditors). These programs help to build a water-wise-literate community.

Agriculture Water Costs. San Diego has over 250,000 acres of dedicated agricultural land managed by 5,000 farmers. Farming represents a \$1.77 billion annual value to the San Diego economy, making it the fifth largest industry in the county, and the 12th most valuable agricultural economy in the nation. Agriculture in San Diego is dominated by small farms, with almost 70% of San Diego County farms less than 10 acres. The high cost of water and land in the region make farming expensive, so local farms have learned to successfully integrate agricultural activity and urban living by growing high value crops that optimize limited acres. Many local governments support the preservation of local agriculture to maintain correlated economic, aesthetic and environmental benefits. The Ag IEP will help defray capital costs associated with upgrading irrigation systems and will reduce water use by farmers, which will promote viable agricultural operations in the region and associated benefits of small farms.

Project Benefits

Reduced Water Use. This program will reduce water demands by a total of 1,330 AFY, helping SDCWA and its member agencies to make conservation a way of life and positioning the region so that it is prepared to implement elements of the water use efficiency framework as promulgated by the State over the next decade. The LEP will reduce irrigation demands by 546 AFY and Ag IEP will reduce agricultural demands by 784 AFY (see below for calculations), for a total of 1,330 AFY in reduced water use. This grant program is expected to be extremely successful in the San Diego region as it is designed to encourage the adoption and implementation of

technologically-advanced water efficient devices and best management practices by customers and industry practitioners in the urban outdoor and agriculture sectors.

Turf Replacement – SDCWA has a history of successfully delivering water use efficiency programs, including turf rebates, using IRWM grant funding (note that those programs were closed after grant funding and match were exhausted). SDCWA has learned that supplementing MWD’s rebate with additional grant-funded rebates increases participation by customers within the SDCWA service area. Previous experience managing a turf rebate program has shown SDCWA that interest in WSLM classes are high, as more than 5,000 regional homeowners have attended these classes in the past and pledged to remove more than 1 million square feet of turf. Estimated water savings from converting turf to sustainable landscaping are based on the *2015 Turf Removal and Replacement: Lessons Learned* report by CUWCC, which found Southern California agencies reported 45 gallons saved per square foot of turf converted. An estimated 3,952,257 square feet will be converted under this task, resulting in 177,851,565 gallons or 546 AFY in reduced water demands.

Agricultural Water Conservation – Given the high cost of agricultural operations in the region and the farming community’s history as committed stewards of the land, SDCWA anticipates participation in the Ag IEP will also be high. A similar program completed by Mission Resource Conservation District for Rancho California Water District, in neighboring Riverside County, found a 60% participation rate in system improvement implementation, and a potential annual water savings of 1.44 AFY/acre for avocado, 1.10 AFY/acre for citrus, and 0.53 AFY/acre for wine grapes. Based on the Rancho California program (in neighboring Riverside county), it is expected that the retrofits implemented under this program will show an increase in water-use efficiency of 20%. An estimated 700 irrigated acres of avocado, citrus, and wine grapes will be upgraded with water efficient irrigation components under this task. In the region, agriculture uses an average of 5.6 AFY per acre of irrigated cropland. Conserving 20% across 700 acres of irrigated cropland will result in 784 AFY water savings to the region.

Reduction in Greenhouse Gases. Water is one of the highest energy use sectors in the state. A study for SDG&E’s Managed Landscape Program provides data for assumed embedded energy savings rate of 2,297 kWh/AF of water conserved for landscape uses (California Public Utilities Commission *Embedded Energy in Water Pilot Programs Impact Evaluation*). This accounts for importing water, energy to treat water, and energy to convey water regionally and locally. 3,054,565 kWh/year saved by reducing water demands by 1,330 AFY will result in 999 MTCO2e per year reduction in greenhouse gases that contribute to climate change.

Climate Resilience. The proposed water use efficiency upgrades will help address climate resiliency by reducing long-term water demands, making the region more resilient to drier conditions associated with climate change.

Drought Resistance. The project will utilize native and water-wise vegetation in the sustainable landscaping installed during the turf conversion. These sustainable landscapes will be more resilient in the face of increased duration and severity of droughts, and changes to precipitation patterns, arising from climate change.

Water-Wise Community and Culture. This project promotes the value of water and share the skills and knowledge necessary to make sustainable changes in water use behaviors.

Primary Quantified Benefits	
Reduced Water Demands. 1,330 AFY of potable water will be conserved through the LEP and AgIEP programs.	Reduction in Greenhouse Gases. 999 MT CO2e per year of GHGs will be avoided though offsets of imported water.
Additional Benefits	
Climate Resilience. Long-term demand reductions will make the region more resilient to climate changes.	
Drought Resistance. Nearly 90 acres converted to native and water-wise landscaping.	
Water-Wise Community and Culture. This project contributes to changes in water use behaviors.	

DAC Status

The Project does not meet the 75% DAC threshold to qualify as a DAC project. However, 34% of the population in SDCWA’s service area reside in DAC and EDA communities, and will be able to participate in and benefit from these multiple programs. SDCWA has set a goal of offering 15% of the QWEL trainings in DACs.

Completed Work

Multiple studies have been conducted to determine the benefits of water use efficiency programs. Various project elements have been refined over several years of implementation by SDCWA and its partners (note that these are not ongoing programs, but tied solely to grant rounds). The most beneficial aspects of these projects have been selected for this Proposal.

No technical feasibility studies, design, CEQA and NEPA, or permits are necessary to implement this program.

Readiness to Proceed:

- ✓ Programs are organized and ready to go
- ✓ No design needed
- ✓ No CEQA needed
- ✓ No permits needed

Proposed Tasks

A Work Plan for the 2020 Regional Water Use Efficiency Program, including the anticipated tasks necessary to complete the project, deliverables, and current status of the project, is provided in **Table 4-3** below. The information provided below is based on similar grant-funded water use efficiency programs established in the region and builds on their successes. SDCWA and its consultant will oversee all tasks included in the work plan: Task 1, 2, 8, and 11.

Table 4-3: Work Plan for 2020 Regional Water Use Efficiency Program

Task and Description of Work to be Completed	Deliverables	%*
Row (a): Project Administration		
1: Project Management – A SDCWA Project Manager will manage project’s grant agreement including compliance with grant requirements, and preparation and submission of supporting grant agreement documents. The Project Manager will prepare invoices including relevant supporting documentation for submittal to DWR. This task also includes administrative responsibilities associated with the project such as coordinating with SDCWA’s project partner.	<ul style="list-style-type: none"> • Environmental Information Form • Financial Statements • Invoices and supporting documentation 	0%
2: Reporting – This task consists of preparing quarterly progress reports detailing work completed during the reporting period. This task will also involve preparing the Project Completion Report within 90 days of completion of the implementation activities (Task 11).	<ul style="list-style-type: none"> • Quarterly Project Progress Reports • Project Completion Report 	0%
Row (b): Land Purchase/Easement		
3: Land Purchase – No land purchases or easements are required for this project because it will be implemented by local landowners through voluntary participation.	N/A	N/A
Row (c): Planning/Design/Engineering/Environmental Documentation		
4: Feasibility Studies – No studies are required to implement the project.	N/A	N/A
5: CEQA Documentation – This project does not require CEQA compliance.	N/A	N/A
6: Permitting – No permits are required for this project.	N/A	N/A
7: Design – No design is needed to complete the project.	N/A	N/A
8: Project Performance Monitoring Plan – This task involves developing and submitting a Project Performance Monitoring Plan, including baseline conditions, monitoring systems to be used, methodology of monitoring, frequency of monitoring, location of monitoring points, as appropriate, and any other stipulations required by DWR in the Final Grant Agreement.	<ul style="list-style-type: none"> • Project Performance Monitoring Plan 	0%
Row (d): Construction/Implementation		
9: Contract Services – No contract services are required for implementation.	N/A	N/A
10. Construction Administration – Any and all administrative activities associated with implementation of the project will be completed under Task 11.	N/A	N/A

Task and Description of Work to be Completed	Deliverables	%*
<p>11. Construction/Implementation Activities – Implementation includes issuing incentives, educational programs to support successful implementation of turf conversion, agricultural irrigation efficiency inspections, and marketing for the new water use efficiency programs.</p>		
<p><u>Subtask 11.1 Landscape Efficiency Program</u> <u>Landscape Upgrade Incentives</u> – Provide incentives of \$1 per square foot of turf grass removed, resulting in the conversion of a little over 90 acres (3,952,257 square feet) to sustainable landscapes and approximately 545 AFY of water saved annually. Encourage participation in the WSLM program by landowners and use of QWEL-certified landscapers for the conversion work. Customer rebate information including address, square footage of turf removed, rebate amount and pre- and post-conversion photographs will be retained for all participants. <u>WaterSmart Landscape Makeover Program</u> – Conduct the WSLM four-class series and three-hour workshops for homeowners to provide them with the skills and knowledge to convert turf-based landscapes to climate-appropriate landscapes that require less water and are more sustainable. There will be approximately 20 participants per four-class series and 50 per workshop. All materials required for this program are developed and ready to go. <u>Qualified Water Efficient Program (QWEL)</u> – Deliver QWEL professional training classes at facilities throughout the San Diego region in English and Spanish language. QWEL classes will also be delivered as part of the curriculum included in semester-long community college horticulture (or similar) classes. Continuing education events will be conducted which will allow professionals to keep their QWEL certification current. The average number of participants is anticipated to be 20 per class. All materials for this program are developed and ready to go.</p>	<ul style="list-style-type: none"> • List of customers or properties that received rebates and total area converted that equate to the removal of 3,952,257 square feet of turf • Materials and sign-in sheets for: <ul style="list-style-type: none"> ○ 11 WSLM four-class series ○ 22 WSLM 3-hour workshops ○ 18 QWEL classes taught in English (10) and Spanish (8) ○ 10 QWEL classes delivered through community college classes ○ 10 continuing education events 	0%
<p><u>Subtask 11.2 Agricultural Irrigation Efficiency Program</u> <u>Irrigation Efficiency Cost Share/Incentive</u> – Provide reimbursement to qualified growers in the San Diego region for the purchase of high-efficiency irrigation equipment for approximately 50% of documented costs, with a maximum of \$550 per acre. Approximately 150 farms on approximately 700 acres of agricultural land will be upgraded with high efficiency irrigation system components through this cost-share program, for an estimated 784 AFY of water saved annually. Individual audit summaries and documentation of equipment purchases, plus pre- and post-water use data will be retained for all participants, though reporting will be done on a sample set. <u>Inspection, Reporting and Administration</u> – Conduct inspections, create irrigation efficiency reports including equipment upgrade recommendations and pass-through grant-funded cost share to participating growers.</p>	<ul style="list-style-type: none"> • List of efficient irrigation system cost share/incentives provided to growers in the SDCWA (growers/farms participating, equipment and materials, and costs). • Approximately 150 inspections and irrigation efficiency reports 	0%
<p>* The right-hand column displays % complete for each task.</p>		

Project 4: Lower Santa Margarita River IPR Pilot Project

Implementing Agency

Local Project Sponsor: Fallbrook Public Utility District

Partners: Marine Corps Base Camp Pendleton

Project Description

Project Description

Fallbrook Public Utility District (FPUD) is proposing a pilot project (Decision Support Tool) to explore the most effective treatment process for and feasibility of utilizing reclaimed water for indirect potable reuse (IPR) in the Lower Santa Margarita River Basin. This project will contribute to the overall body of knowledge for IPR and explore treatment requirements for livestream discharge for conveyance to a groundwater basin as an environmental buffer while remaining protective of human health. FPUD and its partner, Marine Corps Base Camp Pendleton (Camp Pendleton), currently operate water reclamation plants in the Lower Santa Margarita River Basin and discharge treated effluent to the ocean. If the treated effluent were to be conveyed to the existing Upper Ysidora Percolation Ponds and into the groundwater basin, it could be utilized as potable reuse supply.

This pilot project will install two pilot treatment facilities, in addition to developing several discharge testing protocols. The two treatment facilities are located at either end of the *Santa Margarita River Conjunctive Use Project*, and if full implementation is pursued (pending outcomes of this pilot project) would both contribute water for the *Santa Margarita River Conjunctive Use Project*. The first treatment facility will be located at FPUD's Fallbrook Water Reclamation Plant. At this facility, FPUD will determine the optimal dosage and efficacy of treatment options for its effluent. The second treatment facility will be constructed at Camp Pendleton's Southern Regional Tertiary Treatment Plant (SRTTP), where Camp Pendleton will determine the optimal dosage and efficacy of treatment options for its effluent. At this location, Camp Pendleton will also divert water from the treatment process to conduct off-site soil column filtration testing to determine pathogen removal in native soil. Each location will have a skid-mounted pilot treatment train specifically designed to address water quality needs of each plant's effluent. Together, these facilities would produce 64 AFY (32 AFY each) of treated effluent.

FPUD will develop a testing protocol to look at nutrient uptake through the discharge in Fallbrook Creek, which will include sampling of the effluent and testing through either an actual or simulated system to represent the nutrient uptake from vegetation. Camp Pendleton will conduct a tracer test at the Upper Ysidora Subbasin of the Santa Margarita Groundwater Basin. This involves release of an inert tracer at recharge ponds in the Upper Ysidora Subbasin and tracking progression through the basin to evaluate retention time. Existing monitoring and production wells will be used to map the vertical and horizontal distribution of the tracer (see **Figure 4-10**, below).

The project will evaluate pilot treatment equipment including a microfiltration system, ozone dosing system, biofiltration unit, hydrogen peroxide dosing system, and UV dosing system (see Figure 4-10, below). Source water for the pilot will be from a portion of the effluent stream from the two existing wastewater treatment facilities. After processing and testing, the water will initially be diverted back to FPUD's and Camp Pendleton's existing recycled water systems. Should the pilot project demonstrate feasibility and supports permitting for full-scale implementation, a future full-scale project would provide up to 1,770 AFY potable water for FPUD and Camp Pendleton.

Context: Decision Support Tool Applicability

This project is a component of the larger *Santa Margarita River Conjunctive Use Project*, which is designed to resolve water supply conflicts for users of the Santa Margarita River (including environmental uses), support supply availability and reliability, and protect water supplies from rising costs. This pilot project will employ innovative technology to increase scientific knowledge and understanding of water management by addressing the feasibility of effectively treating reclaimed water for potable reuse without the use of reverse osmosis before application to live stream discharge and groundwater basin infiltration. Currently, all approved IPR projects in California employ reverse osmosis as part of a treatment train before application of recycled water. However, in other parts of the country and around the world, it has been found that technologies such as biological activated

carbon (BAC) are effective in preparing reclaimed water for IPR. This project seeks to demonstrate the feasibility and safety of the proposed approach. By investigating alternative treatment methods, this project will add to the body of knowledge surrounding treatment options for IPR not using reverse osmosis. Specifically, this pilot project will focus on removal of contaminants of emerging concern (CECs) such as perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), as well as disinfection byproducts (DBPs) and total organic carbon (TOC). This project's testing protocols and findings can be used as a model for other agencies for whom the more conventional reverse osmosis approach is a barrier to the implementation of potable reuse.

Reverse osmosis as a treatment process for IPR is highly energy intensive, with significant energy use associated with the execution of the process itself and waste disposal. By using a less energy intensive process such as BAC filtration, significant energy savings for IPR could be made, reducing the amount of greenhouse gases in the atmosphere. GHG emissions will also be reduced by decreasing demand for imported supplies.

Results from the pilot project will be shared with the community and water reuse industry through a public outreach and education effort (included in this scope of work), and technical information anticipated to be included in abstracts and presentations submitted to future conferences (not included in this scope of work).

Project Need

Reduce Reliance on Imported Water. FPUD is entirely (100%) dependent on water purchased from SDCWA, and due to its location in the northernmost portion of SDCWA's service area, all physical water received by FPUD is imported from the State Water Project (SWP). This reliance on imported water leaves FPUD vulnerable to water restrictions due to drought and demand conditions, higher costs to purchase and transport water, and other forces outside of FPUD's control.

Drought Response. Camp Pendleton relies entirely on local water from the Santa Margarita River, via groundwater recharged by the river and surface water stored in the basin through Camp Pendleton's recharge operations. During extended drought, Camp Pendleton first conserves water and then must purchase imported water. Creating water security for Camp Pendleton is critical to ensuring water availability does not negatively impact critical military training activities. This pilot would provide the basis for future full-scale implementation of a reliable, drought proof, local supply for FPUD and Camp Pendleton.

Supply Reliability. In the face of climate change, where the region anticipates higher temperatures, greater variability in rainfall, increased frequency of drought, and increasing demands (see *2019 San Diego IRWM Plan's* Climate Change Vulnerability Assessment), supplies available to FPUD and Camp Pendleton are expected to become more constrained. Flows in the Santa Margarita River will become less reliable, limiting supply availability for Camp Pendleton and decreasing habitat for the many species who depend on the river. As local supplies are less available, demand for imported water will increase, though climate change is expected to result in a 164,000 AFY shortfall in imported supplies for the region. This decrease in imported supply was identified as the only "very high" priority in the vulnerability assessment. By developing information to support a new local supply that is reliable even in drought, the project helps address reliability concerns exacerbated by climate change.

Project Benefits

Pilot Water Supply. This pilot project will produce 64 AFY of water for testing of the proposed IPR approach. Because this is a pilot project, this water will not be used for IPR, and water produced by the pilot project will instead be added to the non-potable recycled water system. Should this pilot project lead to full implementation, FPUD and Camp Pendleton have planned a full-scale project that would produce 1,770 AFY water suitable for IPR, representing 10-20% of total demands for FPUD and Camp Pendleton.

Supply Reliability. IPR would be a reliable source of local supply, not subject to the reliability concerns and high costs of imported water. With full implementation meeting between 10% and 20% of total demands, the project represents a substantial improvement in reliability and would provide a strong baseline supply during a wide variety of climate and water availability scenarios.

Climate Resilience. The pilot project would inform agencies' decisions regarding options for addressing climate change impacts on traditional water supply sources. By exploring an IPR process that is less energy intensive than the more common reverse-osmosis approach, this pilot supports a climate change-sensitive approach. Full-scale implementation will also address the following climate change vulnerabilities related to water supply:

decrease in imported supply, lack of groundwater storage to buffer drought, decrease in groundwater supply, and limited ability to meet summer demand.

Habitat Protection. By using live stream discharge full-scale implementation of the project would support flows in the Santa Margarita River between FPUD and Camp Pendleton, protecting native habitat.

Primary Quantified Benefits
<p>The project will produce 64 AFY of water for testing the effectiveness of the proposed treatment for IPR. During the pilot project, this water will be incorporated into the recycled water supply for FPUD and Camp Pendleton. The project will provide information to support FPUD and Camp Pendleton’s decision on whether full-scale implementation is viable from a financial perspective. This determination will be made based on the most effective treatment process shown by the pilot project to produce the required water quality for groundwater augmentation. If shown to be viable, full-scale implementation would produce approximately 1,770 AFY (between 10% and 20% of both agency’s demand).</p> <p>By using a less energy intensive process such as biological activated carbon filtration, significant energy savings could be made, reducing the amount of greenhouse gases in the atmosphere. Increased energy efficiency will also be achieved by increasing local supply and reducing demand for imported supplies.</p> <p>This project would contribute to the greater body of knowledge regarding IPR in the state, in particular the effectiveness of alternative treatment options for meeting regulatory compliance for IPR, which could support IPR projects for smaller agencies and communities for whom traditional IPR has remained cost prohibitive.</p>

DAC Status

This project meets the definition of a DAC project, because 85% of the population in the project benefit area (including FPUD and Camp Pendleton’s service areas) as a DAC. While full implementation would serve DACs and meet DWR’s definition of a DAC project, because this is a pilot project, it is not considered a DAC project.

Completed Work

The project is a component of the *Santa Margarita River Conjunctive Use Project*, which has completed feasibility studies and an EIR. Because the project is a pilot project, it is an exploration of an alternative to existing practices and will not require extensive construction or design work. The project will have no environmental impacts and qualified for a Class 6 Exemption under CEQA, because it will be used for information collection purposes and will not result in a disturbance to an environmental resource. All completed work documents can be provided upon request.

Technical Feasibility Studies and Design:

- Camp Pendleton, *2012 Recycled Water Master Plan* (February 2012)
- Camp Pendleton, *Salt and Nutrient Management Plan* (November 2012)
- Camp Pendleton, *Indirect Potable Reuse Feasibility Study* (Nov 2013)
- FPUD, *Salt and Nutrient Management Plan* (October 2013)
- Camp Pendleton, *2018 Conceptual Report – Indirect Potable Reuse in the Lower Santa Margarita River Basin* (August 2018)

CEQA, NEPA, and Permits:

- CEQA Notice of Exemption (completed November 2018)
- NEPA Notice of Exclusion (completed November 2018)

Readiness to Proceed:
✓ Design RFP released November 2019
✓ CEQA Categorical Exemption
✓ NEPA Categorical Exclusion
✓ No permits needed for pilot treatment facilities

Proposed Tasks

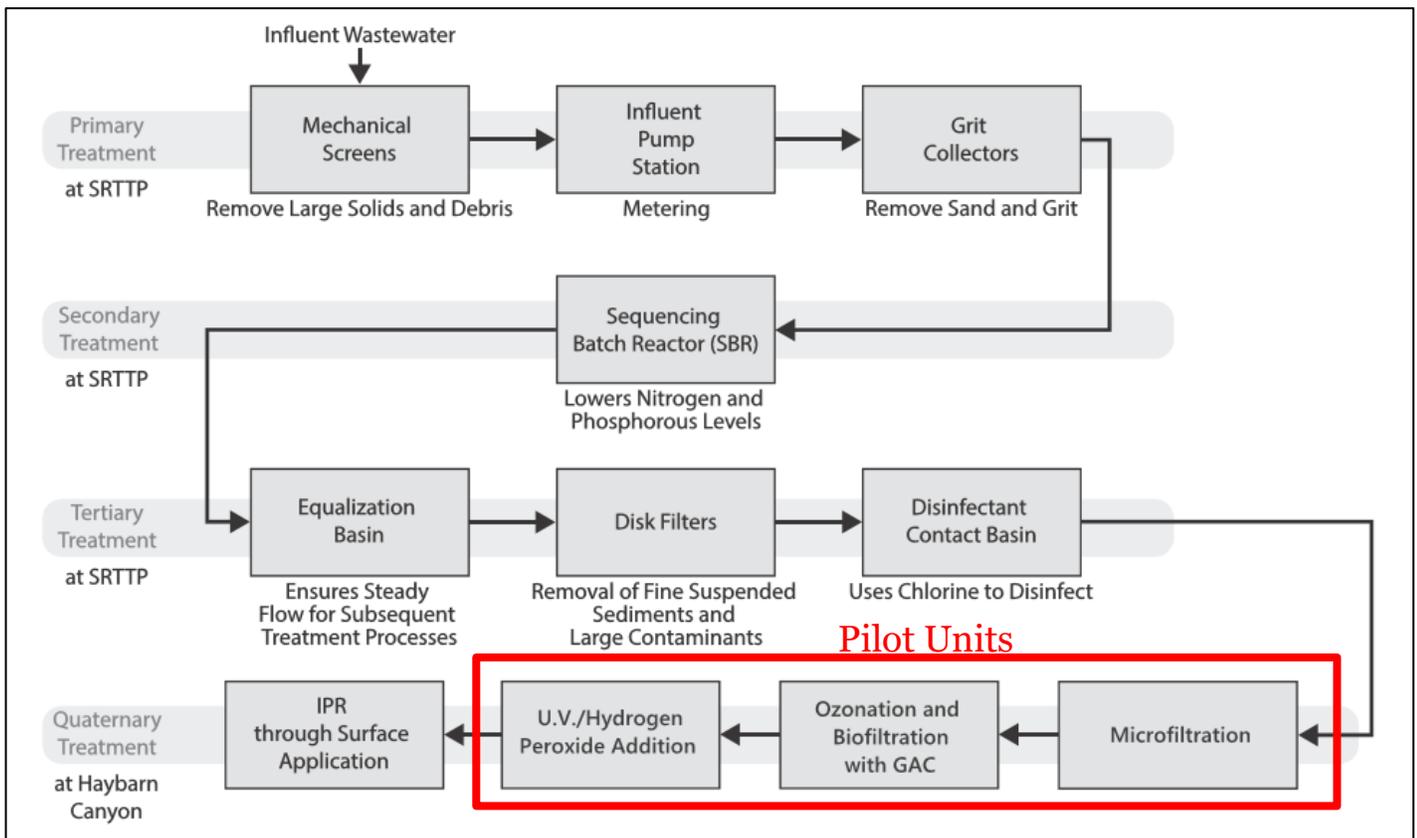
A Work Plan for the *Lower Santa Margarita River IPR Pilot Project*, including the anticipated tasks necessary to complete the project, deliverables, and current status of the project, is provided in **Table 4-4**. It is based on the Request for Proposals (RFP) issued by FPUD on November 4, 2019 and the requirements of the *Proposition 1 IRWM Implementation Grant*. FPUD staff will oversee Task 1, 2, 8, and 10. FPUD and Camp Pendleton will collectively complete Task 6, 9 and 11. A contracted consultant will complete Task 4, 6, 7, and 11.

Table 4-4: Work Plan for Lower Santa Margarita River IPR Pilot

Task and Description of Work to be Completed	Deliverables	%*
Row (a): Project Administration		
<p>1: Project Management – A FPUD Project Manager will manage grant agreement including compliance with grant requirements, and preparation and submittal of supporting documents for the grant agreement. The Project Manager will prepare invoices including relevant supporting documentation for submittal to DWR (via SDCWA as the grantee for the region). This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies, executing local project partner contracts, and managing consultants/contractors. The Project Manager’s tasks also include creating a design scope, procuring a consultant, overseeing pilot project design and treatment train equipment procurement/installation, and conducting education/outreach efforts.</p>	<ul style="list-style-type: none"> • Environmental Information Form • Financial Statements • Invoices and supporting documentation 	10%
<p>2: Reporting – This task consists of preparing quarterly progress reports detailing work completed during the reporting period and submitting to SDCWA as the region’s grantee, for submittal to DWR. This task will also involve preparing the Project Completion Report within 90 day after project completion and addressing DWR comments on the Completion Report.</p>	<ul style="list-style-type: none"> • Quarterly Project Progress Reports • Project Completion Report 	0%
Row (b): Land Purchase/Easement		
<p>3: Land Purchase – No land purchases or easements are required for this project. The pilot treatment facilities will be located at existing FPUD and Camp Pendleton-owned treatment plants.</p>	N/A	N/A
Row (c): Planning/Design/Engineering/Environmental Documentation		
<p>4: Feasibility Studies – FPUD’s design consultant will prepare a Pilot Project Feasibility Study. This task involves evaluating data collected during the livestream discharge and IPR studies, developing a feasibility analysis and initial process sizing criteria, initiating coordination with regulatory agencies, identifying long-term permitting needs (for full-scale implementation), and outlining testing process. The Pilot Project Feasibility Study also includes a work plan for tracer testing in the basin.</p>	<ul style="list-style-type: none"> • Pilot Project Feasibility Study 	0%
<p>5: CEQA Documentation –CEQA and NEPA requirements are complete. A Notice of Exemption was filed for FPUD and a Categorical Exclusion for Camp Pendleton in November 2018. No additional CEQA or NEPA is required.</p>	N/A	100%
<p>6: Permitting – No permitting is required to begin construction of the pilot treatment facilities included in this Proposal. A discharge permit from the San Diego RWQCB will be needed to conduct the tracer study in Upper Ysidora Subbasin. The design consultant will prepare the supporting information for the permit.</p>	<ul style="list-style-type: none"> • RWQCB Discharge Permit 	0%
<p>7: Design – <i>For the treatment facility</i> at FPUD’s site, design work includes development of Design TM summarizing layout of treatment facilities, including design, cost estimate, and operations manual. An approach to demonstrate criteria to achieve live stream discharge approval and potential to model nutrient uptake is also included in this task. For the facility at Camp Pendleton, this task includes development of a Design TM summarizing layout of treatment facilities, including design, cost estimate, and operations manual for IPR pilot. It will include appropriate recycled water contribution based on limiting factors in the source water and an approach to demonstrate removal efficiency of key potential CEC such as PFOA. <i>For the tracer test</i>, the design consultant will develop a Design TM summarizing the design, layout, water source, mixing, and discharge facilities required to perform a tracer study at Pond 3. This will include development of an operation and monitoring plan. The RFP for selection of this design consultant was released in November 2019 and work will begin in early 2020.</p>	<ul style="list-style-type: none"> • Design TM for FPUD treatment facility • Design TM for Camp Pendleton treatment facility • Design TM for Tracer Study 	0%

Task and Description of Work to be Completed	Deliverables	%*
<p>8: Project Performance Monitoring Plan – This task involves developing and submitting a Project Performance and Monitoring Plan, including baseline conditions, monitoring systems to be used, methodology of monitoring, frequency of monitoring, location of monitoring points, and any other stipulations required by DWR in the Final Grant Agreement.</p>	<ul style="list-style-type: none"> • Project Performance Monitoring Plan 	0%
<p>Row (d): Construction/Implementation</p>		
<p>9: Contract Services – Procurement, installation, and operation of pilot equipment will be done by FPUD/Camp Pendleton staff under Task 11, based on the Design TMs completed in Task 7. The extent of contract services is limited to the design consultant review of proper installation and operation, also included under Task 11.</p>	N/A	N/A
<p>10. Construction Administration – Construction administration activities are included in Task 1 and includes oversight of consultants and review of deliverables.</p>	N/A	N/A
<p>11. Construction/Implementation Activities –Implementation includes construction of the treatment facilities, implementation of the tracer study, and production of a final Feasibility Study that evaluates the outcome of the pilot project. This task has been divided into four subtasks, all of which will consist of data analysis and report preparation.</p>		
<p><u>Subtask 11.1: Fallbrook Pilot Treatment Train</u> – FPUD will procure and assemble the treatment train at its site, tie it into the existing treatment plant, and start up the equipment. FPUD staff will operate the pilot facility and collect samples. Samples will be sent to a certified lab for testing. After four months of pilot operations, FPUD’s consultant will prepare a summary report on pilot treatment performance, including recommendations to achieve live stream discharge approval in a full-scale scenario.</p>	<ul style="list-style-type: none"> • Summary report of pilot treatment performance 	0%
<p><u>Subtask 11.2: Camp Pendleton Pilot Treatment Train</u> – Camp Pendleton will procure and construct the pilot equipment at its SRTTP based on the design developed under Task 7. Construction involves mobilizing equipment, procuring and assembling the treatment train, tying it into the existing treatment plant, and starting up the equipment. Staff will operate the pilot facility and collect samples. Samples will be set to a certified lab for testing. After four months of pilot operations, the consultant will prepare a summary report on pilot treatment performance.</p>	<ul style="list-style-type: none"> • Summary report of pilot treatment performance 	0%
<p><u>Subtask 11.3: Upper Ysidora Subbasin Tracer Test</u> – FPUD’s consultant will perform groundwater tracer study to verify retention time and develop a report to secure DWR confirmation on retention time to support full-scale IPR. The tracer study will require procuring and assembling a mixing tank for the tracer and collecting water quality samples from existing wells to establish background water quality.</p>	<ul style="list-style-type: none"> • Tracer Study 	0%
<p><u>Subtask 11.4: Full Scale Feasibility Report</u> – This task includes preparation of an overall Full-Scale Feasibility Report that evaluates the pilot treatment facilities and tracer test. This Feasibility Report will include an updated process layout and sizing and design criteria, identify additional data needs and permitting requirements, and include anticipated capital and operating costs. It will also identify the next steps needed to pursue full-scale implementation.</p>	<ul style="list-style-type: none"> • Full-Scale Feasibility Report 	0%
<p><u>Subtask 11.5: Technology/Knowledge Transfer Report</u> – FPUD Staff and Consultant will work together to prepare initial and final fact sheets for distribution to the public, create and a Technology/Knowledge Transfer Report summarizing the broader application of the data and information learned, and develop a presentation with accompanying materials for public workshop and for industry conferences to support decision-making by other agencies interested in cost-effective potable reuse. Outreach is critical to building public support for successful full-scale implementation and for disseminating the findings and outcomes of this pilot project for use by other agencies considering alternative treatment trains for IPR.</p>	<ul style="list-style-type: none"> • Initial Fact Sheet • Final Fact Sheet • Technology/ Knowledge Transfer Report • Presentation • Workshop Materials 	0%
<p>* The right-hand column displays % complete for each task.</p>		

Figure 4-10: Lower Santa Margarita River IPR Pilot Project Proposed Treatment Train



Project 5: Pure Water Oceanside

Implementing Agency

Local Project Sponsor: City of Oceanside

Project Description

Project Description

Pure Water Oceanside is a potable reuse project that will inject 3,360 acre-feet per year (AFY) of advanced treated recycled water into the Mission Basin of the Lower San Luis Rey Groundwater Basin through injection wells and conveyance from the advanced water treatment facility (AWTF). Advanced treated recycled water from the AWTF will be conveyed by underground pipe to two injection wells, crossing the San Luis Rey River on Douglas Drive and then turning west to several injection well sites south of Pala Road (see **Figure 4-12**). The targeted annual injection volume is 3 mgd (3,360 AFY) for groundwater replenishment. Injection Well 1 will be located on Coco Palms Drive and Injection Well 3 will be located at the end of Alipaz Court (well numbering was assigned during development of the City's larger Pure Water Program). Both injection wells will be constructed south of the San Luis Rey River and will include the following components: injection well, piping, valves, and appurtenances; electrical and control equipment for power distribution to the facilities and local/remote control of monitoring of well operations; and concrete pad for mounting piping, electrical and other support equipment.

This Proposal includes the portion of conveyance pipelines from the Douglas Drive/Pala Road intersection to the injection wells; the conveyance pipelines from the AWTF to this intersection are being constructed simultaneously under a separate construction contract. Injection well supply pipelines (referred to as IWSP in the City's planning documents), or conveyance, will consist of 12- and 18-inch pipe beginning at the intersection of Douglas Drive and Pala Road and running west in Pala Road to Coco Palms Drive. Injection Well 1 will be located to the south along Coco Palms Drive. Injection Well 3 will be located at the end of Alipaz Court and supplied from a branch off the primary (18-inch) IWSP at Rio Vista Drive. The 12-inch branch to Injection Well 3 will run south in Rio Vista Drive to Alipaz Court, and then on to the end of the street. See **Figure 4-12** for more information.

Context

Pure Water Oceanside overlies the Mission Subbasin of the Lower San Luis Rey Groundwater Basin (Mission Basin) within the City of Oceanside. The Lower San Luis Rey Groundwater Basin (including Mission Basin) has been determined by DWR to be subterranean flow of the San Luis Rey River, and is therefore managed as surface water and considered a very low priority basin. See Attachment 1: Eligibility for more information.

The project will augment the Mission Basin with advanced treated recycled water from a new AWTF located at the San Luis Rey Water Reclamation Facility (SLRWRF). Rather than discharge secondary treated effluent into the Pacific Ocean, *Pure Water Oceanside* will inject 3 million gallons per day (mgd) of advanced treated recycled water into the Mission Basin for later extraction by existing downgradient wells. Following treatment at the existing Mission Basin Groundwater Purification Facility (MBGPF), the water will supplement the City's potable water supply by 3,360 AFY. This adds an additional 92,400 AF of potable water supply over the life of the project, providing approximately 13% of the City's water supply needs. The City is implementing a phased approach that would consist of recharging 3,360 AFY (3.0 mgd) of advanced treated recycled water via injection wells in the near term and an additional 1,700 AFY (1.5 mgd) from a future project. The near-term project includes the construction of the AWTF, conveyance pipelines, injection wells, backwash piping, and monitoring wells. The IRWM funding requested in this Proposal is for the construction of two injection wells and a portion of the IWSP conveyance. The other portions of the near-term project will be constructed by the City of Oceanside concurrently with the injection wells, but have not been included herein in order to simplify this Proposal's work plan and budget.



Figure 4-11. *Pure Water Oceanside* Advanced Water Treatment Plant

Project Need

The San Diego IRWM Region and California are facing water supply concerns brought on by a variety of factors including drought, population growth, and historical over-drafting of our water resources. A safe, reliable, and local water supply is crucial for the vitality of the San Diego region's economy and quality of life.

Reduce Reliance on Imported Water. According to the City of Oceanside's *2015 Urban Water Management Plan (UWMP)*, the City is 85% reliant on imported SDCWA water but has set a long-term goal of 50% water independence by 2030. SDCWA supplies consist primarily of imported water from the Colorado River and the State Water Project. In 2018, imported water from the Metropolitan Water District of Southern California (MWD), the Imperial Irrigation District, and the Colorado River made up 73% of the SDCWA supply. SDCWA's dependence on imported water makes the City vulnerable to supply disruptions. During the drought, SWP allocations to SDCWA were limited to 5% in 2014, and 20% in 2015. The SWP has not had 100% allocation since 2006. Any reduction in purchased SDCWA water will directly result in a reduction of SDCWA's imported water supplies, which are considered the "last" drop of water after local desalination supplies are utilized. The project is directly creating a safe, reliable, and local water supply in the City of Oceanside through Mission Basin augmentation of 3,360 AFY.

Declining Water Quality. Declining yields and quality of the water extracted from the Mission Basin have resulted in increased purchases from non-local sources.

Supply Reliability. This project increases water resiliency for the City and helps mitigate impacts of climate change on water supply availability. This project will allow the region to become less impacted by climate change (extended drought, warmer temperatures), improve water management and supply in the Mission Basin through augmentation, and provide an additional source of recycled water for irrigation and industrial uses. Supply reliability in the face of drought was identified as a "high" priority vulnerability in the *San Diego IRWM Plan's* Climate Change Vulnerability Assessment. By contributing to a new local supply that is reliable even during drought, the project will help to address reliability concerns exacerbated by climate change, while also offsetting energy demands (and consequently greenhouse gas [GHG] emissions) associated with importing water.

Water Use Efficiency Regulations. The State has set mandatory water use reductions and water efficiency legislation, including SBx7-7, Assembly Bill 1668, and Senate Bill 606. SBx7-7 requires agencies to achieve a 20% reduction in per capita demand by 2020. The City of Oceanside's *2015 UWMP* assumed expanded beneficial use of recycled water, including Mission Basin recharge. Assembly Bill 1668 and Senate Bill 606, signed May 31, 2018, established guidelines for water use efficiency and a framework for new standards which will be in place by 2022. This legislation includes a 15% credit towards a city's water use reduction objective for water suppliers who achieve potable reuse by January 2022 to prepare for drought. *Pure Water Oceanside* will assist the City in reaching its mandated water use reduction goals.

Project Benefits

Potable Water Supply. The project will create a local source of water and thereby reduce demands for imported water, creating a more resilient water supply in the region. Creation of 3,360 AFY of advanced treated water is based on the design capacity of *Pure Water Oceanside* and the available Mission Basin capacity calculations. This new local water supply will decrease the demand on imported water and the associated carbon footprint.

Reduction in Greenhouse Gases. Advanced treated water has a much lower GHG footprint compared to the imported water it is replacing. Importing, treating, and conveying water to the San Diego region requires 2.297 MWh/AF to pump to San Diego (California Public Utilities Commission *Embedded Energy in Water Pilot Programs Impact Evaluation*), compared to 1.5-2.0 MWh/AF for potable reuse. Using an average of 1.75 MWh/AF energy demand of the project, this project would reduce energy demands by 0.547 MWh/AF. Based on the State's energy mix and associated emissions factors, approximately 0.327 MT CO₂e are released per MWh used (California Energy Commission and U.S. EPA). This project would save 601 MT CO₂e per year beginning in 2023.

Supply Reliability. This project creates an entirely new local water supply for the region, improving supply reliability because this local supply will be available in all climate and demand conditions.

Improve Water Quality in Mission Basin. The project is anticipated to decrease salinity (total dissolved solids [TDS]) concentrations in the Mission Basin. Current TDS levels in Mission Basin range between 500 mg/L and

2,000 mg/L, requiring desalting prior to distribution and use (thus current operation of the MBGPF). In contrast, advanced treated recycled water has an expected TDS of 50-100 mg/L, which would dilute TDS levels in Mission Basin over time. The project would further mitigate historic seawater intrusion through the continued injection of freshwater and maintenance of seaward groundwater gradients. Although the project does not specifically target the constituents identified in AB 1249, overall improvement in groundwater quality is expected to indirectly reduce concentrations of nitrate, perchlorate, arsenic, and hexavalent chromium, if present in the basin.

Climate Resilience. By creating new, local, drought-proof supplies, the project will provide climate change resiliency to the City. This supply will help to address the 164,000 AFY imported water shortfall projected for the San Diego Region as a result of climate change, provide supply even during droughts, which are expected to increase as a result of climate change, and protect local supplies from the impacts of sea level rise (which could increase seawater intrusion into the Mission Basin).

Primary Quantified Benefits	
Potable Water Supply. Annual injection of 3,360 AFY of advanced treated recycled water into the Mission Basin.	Reduction in Greenhouse Gases. Use of potable reuse water in lieu of imported water would offset 601 MT CO ₂ e annually beginning in the year 2023.
Additional Benefits	
<p>Supply Reliability. New local water supply will be created for the region, improving supply reliability.</p> <p>Improve Water Quality in Mission Basin. Recharge will decrease TDS in the Basin over time through dilution.</p> <p>Climate Resilience. Drought proof supply that addresses projected shortfalls, drought, and sea level rise impacts on Mission Basin.</p>	

DAC Status

The project does not meet the 75% DAC threshold to qualify as a DAC project. However, the project benefit area is 36% DAC by population and 21% by geography, and benefits residents throughout the City of Oceanside service area equally. This project is not requesting a partial DAC cost-share waiver.

Completed Work

The City of Oceanside has been pursuing this project since 2015 and is now ready for construction.

Readiness to Proceed:

- ✓ CEQA is complete
- ✓ Design will be 100% complete by DWR Award
- ✓ Pre-construction permits obtained in 2018/9

Technical Feasibility Studies and Design:

- RMC Water & Environment, *Indirect Potable Reuse Study* (March 2016)
- Tetrattech, *Preliminary Geotechnical Study: Proposed Pure Water Oceanside* (September 2018)
- Woodard & Curran, *Pure Water Oceanside Engineering Report* (December 2019)
- Trussell Technologies, *City of Oceanside Pathogen Removal Study* (April 2017)
- TetraTech, *Final Design Drawings and Specifications* (August 2019)

CEQA, NEPA, and Permits:

- Rincon Consultants, *Biological Resources Assessment for Pure Water Oceanside* (August 2018)
- Woodard & Curran, *Pure Water Oceanside: Mitigated Negative Declaration*, SCH #2018091044, (December 2018)
- City of Oceanside, Conditional Use Permit (December 2018)
- General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2012-0006-DQQ) and NPDES No. CAS000002

Note that for the conveyance pipeline under San Luis Rey River, which is NOT included in this Proposal, the City has obtained a USACE Section 404 Nationwide Permit 12 for San Luis Rey subsurface crossing (December 2019); a CDFW 1602 Streambed Alteration Agreement for San Luis Rey River subsurface crossing (December 2019); California Endangered Species Act consultation for sensitive riparian, coastal sage scrub, and chaparral species (December 2019); CA Fish & Wildlife Notification of Trenchless Construction (December 2018); California Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA) Tunnel Classification

(December 2018) and San Diego RWQCB Section 401 General Water Quality Certification and Order (December 2019). This information is provided to assure DWR that the City is ready to proceed in parallel with all portions of the near-term project necessary to deliver advanced treated water to the proposed injection wells.

Proposed Tasks

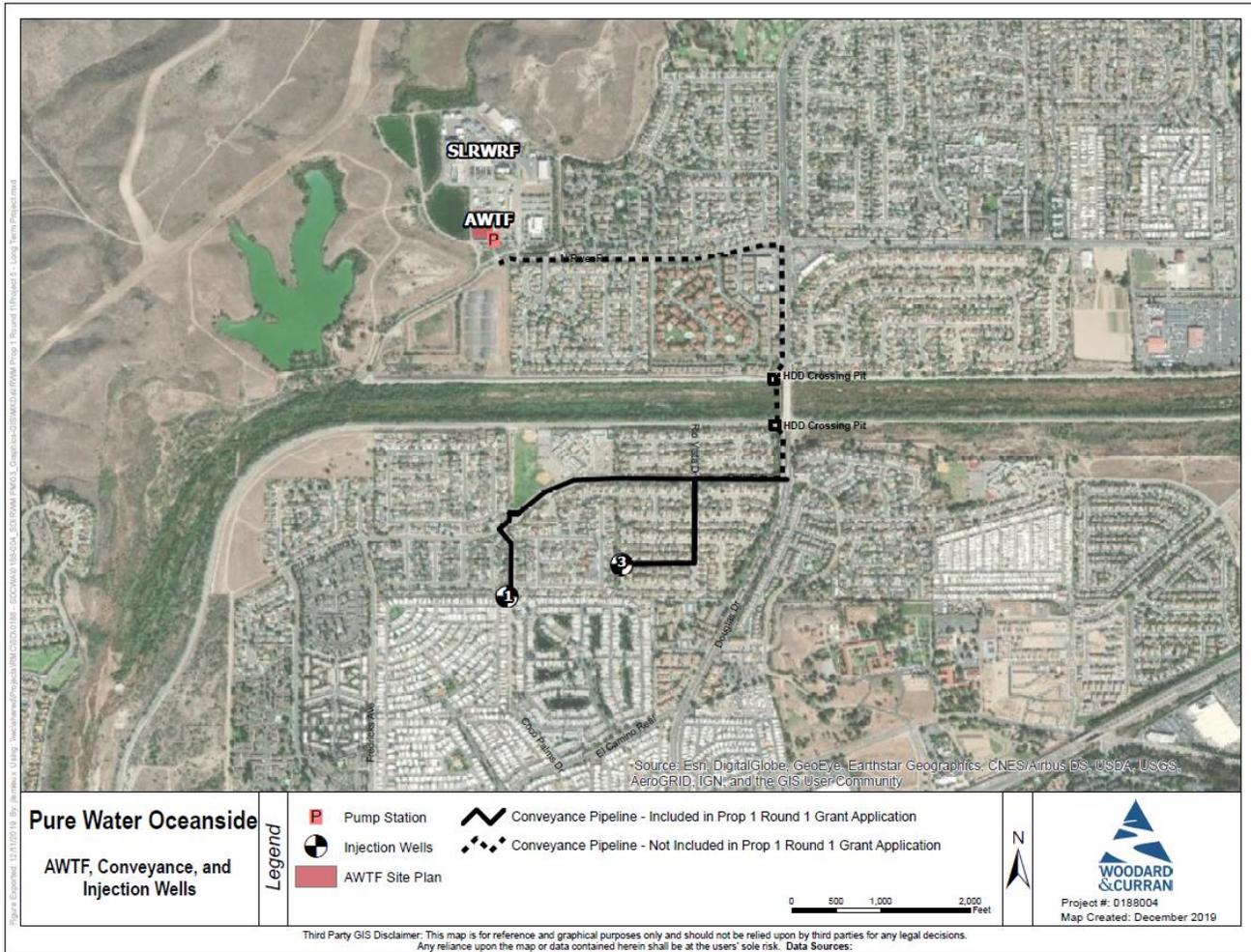
A Work Plan for the *Pure Water Oceanside* project, including the anticipated tasks necessary to complete the project, deliverables, and current status of the project, is provided in **Table 4-5** below. Tasks 1, 2, 8, and 10 will be completed by City of Oceanside staff, while Task 11 will be completed by the City’s construction contractor. Task 6, Permitting, will be completed jointly by City staff and its construction contractor.

Table 4-5: Work Plan for *Pure Water Oceanside*

Task and Description of Work to be Completed	Deliverables	%*
Row (a): Project Administration		
1: Project Management – Manage grant agreement including compliance with grant requirements, and preparation/submittal of supporting grant documents. Prepare invoices including relevant supporting documentation for submittal to DWR via SDCWA. This task also includes administrative responsibilities associated with the project such as managing consultants/contractors.	<ul style="list-style-type: none"> • Environmental Information Form • Financial Statements • Invoices and supporting documentation 	0%
2: Reporting – This task consists of preparing quarterly progress reports detailing work completed during the reporting period. Reports will be submitted to SDCWA for review and inclusion in a progress report and submitted to DWR. This task will also involve preparing the Project Completion Report through the SDCWA no later than 90 days after project completion. The City of Oceanside will address and incorporate any comments from SDCWA and DWR for the preparation and submission of a Final Project Completion Report to DWR.	<ul style="list-style-type: none"> • Quarterly Project Progress Reports • Project Completion Report 	0%
Row (b): Land Purchase/Easement		
3: Land Purchase – No land purchases or easements are required for this project because the City of Oceanside will construct injection wells and conveyance pipelines in existing public rights-of-way.	N/A	N/A
Row (c): Planning/Design/Engineering/Environmental Documentation		
4: Feasibility Studies – All necessary studies have been completed (see Completed Work, above). No additional feasibility studies will be prepared.	N/A	100%
5: CEQA Documentation – CEQA for the project has been completed. A Final MND was completed and certified in December 2018. All required Tribal notifications (per PRC §75102) were completed during the CEQA process.	N/A	100%
6: Permitting – The City of Oceanside has been actively securing permits for the project since 2018, see <i>Completed Work</i> above. Permits required for injection wells and conveyance that cannot be secured in advance of construction will be procured during construction in partnership between the City and its contractors. Such permits include a Well Discharge Permit, a Well/Boring Installation Permit, a Well/Boring Destruction Permit, and an Air Pollution Control Permit for Standby Generator. The first three permits will be secured from the San Diego County Department of Environmental Health, while the Air Pollution Control Permit will be secured from the San Diego Air Pollution Control District. The City has already begun securing these permits.	<ul style="list-style-type: none"> • Well Discharge Permit • Well/Boring Installation Permit • Well/Boring Destruction Permit • Air Pollution Control Permit for Standby Generator 	75%
7: Design – Final design is currently at 90% for the injection wells and 30% for conveyance by TetraTech. All design will be completed by May 2020 and is included in the Proposal as part of the project’s funding match.	<ul style="list-style-type: none"> • Final Drawings and specifications 	60%

Task and Description of Work to be Completed	Deliverables	%*
<p>8: Project Performance Monitoring Plan – This task involves developing and submitting a Project Performance Monitoring Plan, including baseline conditions, monitoring systems to be used, methodology of monitoring, frequency of monitoring, location of monitoring points, and any other stipulations required by DWR in the Final Grant Agreement.</p>	<ul style="list-style-type: none"> • Project Performance Monitoring Plan 	0%
<p>Row (d): Construction/Implementation</p>		
<p>9: Contract Services – The City has already issued a Request for Proposals, evaluated submitted Proposals, and selected a construction contractor. One contract for the injection wells and two contracts for conveyance will be secured prior to construction. This task will be completed in-house, and is not included in this work plan, budget, or schedule.</p>	N/A	N/A
<p>10. Construction Administration – This task includes managing contractor submittal review, answering requests for information, and issuing work directives. Construction will be observed by a competent field inspector or construction manager who will document pre-construction conditions, maintain daily inspection reports, prepare change orders, address questions of the contractor, review the project schedule, review submittals and pay requests, prepare as-built drawings, and notify the contractor of deficient work.</p>	<ul style="list-style-type: none"> • Notice of Completion • As-Built Drawings 	0%
<p>11. Construction/Implementation Activities – Task 11 includes three subtasks: 1) mobilization/demobilization, 2) conveyance pipelines, and 3) injection wells. All construction will be completed in accordance with applicable design and construction standards.</p>		
<p><u>Subtask 11.1 Mobilization/Demobilization</u> - This subtask involves setting up and breaking down equipment, moving equipment and materials in and out of the construction site, and restoration to pre-construction conditions.</p>	<ul style="list-style-type: none"> • Pre- and post-construction photographs 	0%
<p><u>Subtask 11.2 Conveyance Pipelines</u> - Conveyance pipelines will consist of 1,740 linear feet of 12-inch and 4,350 linear feet of 18-inch diameter pipe, consistent with the product water pipeline from the AWTF site. The conveyance pipeline will have isolation valves every 1,000 feet for maintenance purposes and in accordance with the City's Design Manual. Construction will include open trenching in the public right-of-way, installation of pipelines, backfilling, and restoration of the road to pre-construction conditions.</p>	<ul style="list-style-type: none"> • Pre- and post-construction photographs • Frac-out plan • Engineer's Certification 	0%
<p><u>Subtask 11.3 Injection Wells</u> – Injection well construction will involve drilling and installing injection wells, piping, valves, and appurtenances; electrical and control equipment for power distribution to the facilities and local/remote control of monitoring of well operations; and concrete pad for mounting piping, electrical and other support equipment. The impacted area during construction of the injection wells will be limited to approximately 4,000 square-feet with the final well area of 20-feet by 20-feet with a 12-foot by 6-foot vault with two 2-foot by 3-foot access hatches. The vault will be approximately 7-feet deep.</p>	<ul style="list-style-type: none"> • Pre- and post-construction photographs • Engineer's Certification 	0%
<p>* The right-hand column displays % complete for each task.</p>		

Figure 4-12: Pure Water Oceanside Infrastructure and Injection Wells



Project 6: North County Recycled Water Project

Implementing Agency

Local Project Sponsor: San Elijo Joint Powers Authority (San Elijo JPA)

Partners: City of Oceanside and Olivenhain Municipal Water District (Olivenhain MWD)

Project Description

Project Description

The *North County Recycled Water Project* will implement a series of recycled water conveyance and storage reservoir improvements to expand and maximize recycled water storage, distribution, and use across service areas of multiple water purveyors: San Dieguito Water District, Santa Fe Irrigation District, City of Del Mar, the City of Oceanside, and Olivenhain MWD in northern San Diego County. Project Partners will construct 39,000 linear feet (LF) of new pipeline, expand distribution pumping by up to 1,200 gallons per minute (gpm) and add 0.25 million gallon (MG) recycled water storage at the San Elijo Water Reclamation Facility (SWERF). Project components are described in more detail below. The Project will result in 245 AFY of recycled water supply for mostly landscape and agricultural irrigation customers, which will offset potable use.

Recycled Water Storage and Pumping System Expansion (SE) – Project includes 0.25 MG recycled water storage constructed at SEWRF for finished water storage, prior to distribution and expansion of the existing distribution pump station to increase peak demand deliveries. Tank construction will be reinforced concrete that will expand the existing recycled water storage from approximately 15,000 to 265,000 gallons (additional 250,000 gallons). Existing distribution pump station capacity will be increased with the construction of 150 HP pump motor, 1,200 gpm vertical turbine pump, approximately 80 LF of 12-inch diameter ductile iron connecting piping, 12-inch diameter gate and check valves, altitude valves, and other electrical, SCADA, and appurtenances necessary for automated control and operation to move water efficiently between the existing 3 offsite system reservoirs.

Recycled Water Pipeline: North El Camino Real (OC) - This will replace the existing 10-inch recycled water main with a larger main from the San Luis Rey Water Reclamation Facility (SLRWRF) south on El Camino Real to the Fire Mountain neighborhood to serve current and new customers (see **Figure 4-13**). The recycled water pipeline will extend east on North River Road from SLRWRF to Douglas Drive, south on Douglas Drive (including an HDD crossing of the San Luis Rey River), and continue south on El Camino Real to Fire Mountain. A new 2.2 MG tank and 75 HP pump station are being constructed separately from, and concurrent with the Project to allow the increased pipeline capacity to be used (not included in this proposal). This system will install 36,000 LF of new pipeline and deliver over 200 AFY recycled water with construction beginning in May 2020.

Recycled Water Pipeline: South El Camino Real (OM) – This alignment will construct approximately 3,700 LF of 6-inch pipe along South El Camino Real, from Calle Ryan to Manchester Avenue, within the of City of Encinitas (see **Figure 4-14**). The extension will serve 45 AFY of recycled water to 9 customers for irrigation. An additional southern section of pipe was previously funded through a Proposition 84, Round 4 IRWM Implementation Grant.

Context

This project is part of the North San Diego Water Reuse Coalition (Coalition) Regional Recycled Water Project, which aims to develop regional recycled water infrastructure to increase the capacity and connectivity of the Coalition partners' recycled water systems and maximize reuse of available wastewater supplies. The Coalition itself is a partnership of nine northern San Diego County water and wastewater agencies working together to expand recycled water deliveries to northern San Diego County. **Figure 4-15** shows the overall Regional Recycled Water Project as proposed in the Coalition's 2012 *Regional Recycled Water Facilities Plan*. Due to the size and complexity of the project, components of the regional project are implemented as funding becomes available. The project in this proposal is spread across the Regional Recycled Water Project's area, and each component contributes to the overall Regional Recycled Water Project's goal of optimizing recycled water production and use.

Project Need

Due to California's increasing water supply concerns stemming from drought, population growth and over-drafting of water resources, water suppliers are mandated to conserve potable water at increasing levels (e.g., AB 1668

and SB 606). Agencies in the Coalition are working together to implement projects designed to conserve local water supply resources and improve resiliency to climate change. This project is part of this greater effort and is designed to expand a multi-agency recycled water distribution and storage system, significantly increasing the supply of local, safe, and reliable drinking water across multiple cities and watersheds in the region.

Decrease Reliance on Imported Water. Members of the Coalition purchase water from the San Diego County Water Authority (SDCWA), the regional wholesaler. SDCWA's supplies are a blend of treated and raw imported water and desalinated sea water. SDCWA's imported water includes State Water Project (SWP) and Colorado River supplies. Increased environmental regulations and competition for water have resulted in changes in delivery patterns and timing of imported water supply availability. At the same time, the Colorado River watershed has experienced a protracted drought since 2000. Due to the cost of the imported supplies and long-term reliability concerns, the region is pursuing local supply opportunities to offset demands for imported water. All recycled water delivered by the project will be used to offset purchases of imported water.

Supply Reliability. As San Diego County's major sources of potable water – the SWP and the Colorado River – are facing significant challenges, local supplies such as recycled water are imperative to maintaining a reliable source of water. The Regional Recycled Water Project, and these project components, involve connecting discrete recycled water systems to one another, increasing recycled water storage capacity, and distributing recycled water to effectively meet recycled water demands. Supply reliability in the face of drought was identified as a "high" priority vulnerability in the *San Diego IRWM Plan's* Climate Change Vulnerability Assessment. By increasing use of recycled water, Coalition partners will be able to reduce their purchases of imported water from SDCWA by 245 AFY, creating a resilient, local water supply while helping to mitigate their impacts on climate change (including energy demands and associated greenhouse gases).

Project Benefits

Recycled Water Supply. Recycled water delivered by this project would offset demands for imported potable water. The volume of potable water offset by the project is equivalent to the volume of recycled water delivered - 245 AFY based on current water demands for project customers - contributing to a local, resilient supply of water.

Reduction in Greenhouse Gases. Imported water is more energy intensive to deliver and treat than recycled water, with an average energy demand of 2.297 MWh/AF (California Public Utilities Commission *Embedded Energy in Water Pilot Programs Impact Evaluation*, 2011). Recycled water has an energy intensity of approximately 1.3 MWh/AF, so conversion to recycled water would offset energy demands by 0.997 MWh/AF (2010 Equinox Report). Based on U.S. EPA data on emissions from different energy grids in the country and data from the California Energy Commission on the state's sources of energy, each MWh of energy used in the state results in 0.327 metric tons of carbon dioxide equivalent (MT CO₂e). By offsetting 245 AFY imported water with recycled water, this project will reduce emissions by 80 MT CO₂e per year.

Reduction in Ocean Discharge. Wastewater effluent currently treated to secondary level is discharged to the Pacific Ocean. By putting the recycled water to use, the project will result in less effluent being discharged to the Pacific Ocean. In addition to reducing effluent discharge to the Pacific Ocean, dry weather flows that eventually discharge to the Pacific Ocean are also reduced.

Reduction in Dry Weather Flows. The majority of the proposed recycled water developed under the Project will be used to fulfill irrigation demands. Recycled water use regulations include strict controls for overspray and irrigation efficiency requirements. This can help to reduce the volume of dry weather flows and associated pollutants to local streams and drainages and eventually to the Pacific Ocean.

Reduced Nitrate Mass in Waterways. The California Environmental Data Exchange Network (CEDEN) database (<https://ceden.waterboards.ca.gov>) shows that northern San Diego County waterways sampled as part of the Dry Weather MS4 NPDES monitoring program often have elevated nitrogen including values up to twice the drinking water standard of 10 mg/L for nitrate. Coalition partners estimate that switching to recycled water from potable water results in a 20% reduction in demand due to the controls on overspray and runoff for use of recycled water. The concentration of nitrate to the waterway may remain unchanged, but the reduction in flow would result in a reduced mass of nitrogen in the waterway and ultimately in the Pacific Ocean, which should improve water quality and reduce the potential for algal blooms.

Supply Reliability. This project expands availability of a local recycled water supply for the region, improving supply reliability because this local supply will be available in all climate and demand conditions.

Climate Resilience. The *North San Diego Recycled Water Project* will help to address climate resiliency by preparing the area for an increased occurrence of drought conditions expected as a result of climate change.

Primary Quantified Benefits	
Recycled Water Supply. 245 AFY of potable water savings through the delivery of recycled water supply.	Reduction in Greenhouse Gases. 80 MT CO ₂ e per year of emissions offset by recycled water use.
Additional Benefits	
Reduction in Ocean Discharge. Less wastewater effluent discharged will decrease contaminants and improve the water quality of the Pacific Ocean.	
Reduction in Dry Weather Flows. Recycled water includes strict controls for overspray and irrigation efficiency.	
Reduced Nitrate Mass in Waterways. Reduction in flow would result in a reduced mass of nitrogen in the waterway and ultimately in the Pacific Ocean, improving water quality and the potential for algal blooms.	
Supply Reliability. New local water supply will be created for the region, improving supply reliability.	
Climate Resilience. Local water supply will help the community be more resilient to future climate changes.	

DAC Status

Project benefit area is 16% DAC by population and 7% by geography. It benefits residents throughout the area equally, increasing availability of recycled water, offsetting imported water and decreasing cost of local water.

Completed Work

The Coalition has spent many years collaborating on a plan to connect the region, taking inventory of where there is a supply of wastewater and a demand for recycled water for irrigation, industrial, or potable uses. By working together, these agencies are demonstrating a commitment to provide a reliable, drought-proof source of water for the region and reduce discharge of wastewater to the ocean.

Technical Feasibility Studies and Design:

- DLM, *Olivenhain MWD 2015 Potable Water and Recycled Water Master Plan*, (April 2016)
- RMC Water & Environment, *North San Diego County Regional Recycled Water Project – Regional Recycled Water Facilities Plan* (February 2013)
- RMC Water & Environment, *North San Diego County Water Reuse Coalition Regional Recycled Water Program – 2020 Project Feasibility Study* (March 2017)
- *Recycled Water Pipeline: North El Camino Real (OC): NV5 and Dudek*, Final Design Drawings and Specification (December 2019)
- *Recycled Water Pipeline: South El Camino Real (OM): NV5, 90% Design Complete*

Readiness to Proceed:

- ✓ CEQA for all components complete in February 2020
- ✓ Coalition 2020 Feasibility Study complete
- ✓ All permits will be secured by November 2020

CEQA, NEPA, and Permits:

- RMC Water & Environment, *North San Diego Water Reuse Coalition Regional Recycled Water Project - Final Program Environmental Impact Report*; SCH #2014081028, (October 2015)
- *Recycled Water Storage and Pumping System Expansion (SE): Dudek, Recycled Water Pipeline and Facility Upgrades, Mitigated Negative Declaration*; SCH #2016021055 (May 2016)
- *Recycled Water Pipeline: North El Camino Real (OC):*
 - City of Oceanside, *Upper and Lower San Luis Rey Water Reclamation Facility Recycled Water Conveyance System*, Addendum to the North San Diego Water Reuse Coalition Regional Recycled Water Program EIR; SCH#2014081028, (October 2019)
 - USACE Section 404 Nationwide Permit 12 for San Luis Rey subsurface crossing (Dec 2019)
 - CDFW 1602 Streambed Alteration Agreement for San Luis Rey River subsurface crossing (Dec 2019)
 - California Endangered Species Act consultation for sensitive riparian, coastal sage scrub, and

- chaparral species (December 2019)
- San Diego RWQCB Section 401 General Water Quality Certification and Order (December 2019)
- California Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA) Tunnel Classification (December 2018)
- CDFW Notification of Trenchless construction (December 2018)
- *Recycled Water Pipeline: South El Camino Real (OM):* RECON Environmental, Inc, *Initial Study/Environmental Checklist and Mitigated Negative Declaration for the Manchester Avenue Recycled Water Pipeline Project Encinitas, California;* Public Review December 1 to December 30, 2019.

Proposed Tasks

A Work Plan for the *North County Recycled Water Project*, including the anticipated tasks necessary to complete the project, deliverables, and current status of the project, is provided in **Table 4-6** below. Although the project is being completed by the Coalition, certain components such as CEQA, design, permitting, and contracting will be completed by individual agencies for specific elements due to different jurisdictions and implementing agencies.

Table 4-6: Work Plan for North County Recycled Water

Task and Description of Work to be Completed	Deliverables	%*
Row (a): Direct Project Administration		
1: Project Management – Manage grant agreement including compliance with grant requirements, and preparation/submission of supporting documents. Prepare invoices including relevant supporting documentation for submittal to DWR via SDCWA. This task also includes administrative responsibilities associated with the project such as coordinating with project partners, managing consultants/contractors, and executing project partner contracts.	<ul style="list-style-type: none"> ● Environmental Information Form ● Financial Statements ● Invoices and supporting documentation 	0%
2: Reporting – This task consists of preparing quarterly progress reports detailing work completed during the reporting period. Reports will be submitted to SDCWA for review and inclusion in a progress report and submitted to DWR. This task will also involve preparing the Project Completion Report through the SDCWA no later than 90 days after project completion and incorporating any comments from SDCWA and DWR for the submission of a Final Project Completion Report to DWR in accordance with the grant agreement.	<ul style="list-style-type: none"> ● Quarterly Project Progress Reports ● Project Completion Report 	0%
Row (b): Land Purchase/Easement		
3: Land Purchase – Land purchase and easement acquisition will not be required. The Project will primarily be constructed within roadway rights-of-way, and upsized transmission mains will replace existing mains to which the Project partners already have access.	N/A	N/A
Row (c): Planning/Design/Engineering/Environmental Documentation		
4: Feasibility Studies – Completed feasibility studies are listed in completed work above. No additional feasibility studies will be prepared.	N/A	N/A
5: CEQA Documentation – This task involves preparation of environmental documentation for each component of the project. All required Tribal notifications (per PRC §75102) were or will be completed during the CEQA process. CEQA for <i>Recycled Water Storage and Pumping System Expansion (SE)</i> and <i>Recycled Water Pipeline: North El Camino Real (OC)</i> is complete (see Completed Work above). <i>Recycled Water Pipeline: South El Camino Real (OM)</i> – Recon Environmental, Inc has prepared an Initial Study/Mitigated Negative Declaration (IS/MND), which is currently in the required public review period. Anticipated Board adoption for the IS/MND is on February 12, 2020.	<i>Recycled Water Pipeline: S. El Camino Real (OM)</i> <ul style="list-style-type: none"> ● Notice of Preparation ● Initial Study/MND ● Tribal Notifications ● Notice of Completion ● Notice of Determination 	66%
6: Permitting – Permits for <i>Recycled Water Storage and Pumping System Expansion (SE)</i> are not required; San Elijo JPA is a self-permitting agency for treatment improvements. <i>Recycled Water Pipeline: North El Camino Real (OC)</i> will	<i>Recycled Water Pipeline: South El Camino Real</i>	50%

Task and Description of Work to be Completed	Deliverables	%*
acquire general construction permits in Task 11. <i>Recycled Water Pipeline: South El Camino Real (OM)</i> will acquire a Coastal Development Permit for pipeline installation (anticipated by November 2020).	(OM) • Coastal Development Permit	
7: Design – Complete preliminary design including geotechnical investigations, topographic survey, preliminary cost estimates, preliminary design reports, final design plans and specifications for each project component. <i>Recycled Water Storage and Pumping System Expansion (SE)</i> - Design for the project at the SEWRF is planned for 2020. <i>Recycled Water Pipeline: North El Camino Real (OC)</i> – Design is 100% complete by NV5 and Dudek on December 12, 2019. <i>Recycled Water Pipeline: South El Camino Real (OM)</i> – 90% design complete by NV5; final drawings and specifications will be completed by February 2020.	<i>Recycled Water Storage and Pumping System Expansion (SE)</i> • Final Design Plans and Specifications	50%
8: Project Performance Monitoring Plan – This task involves developing and submitting a Project Performance Monitoring Plan, including baseline conditions, monitoring systems to be used, methodology of monitoring, frequency of monitoring, location of monitoring points, and any other stipulations required by DWR in the Final Grant Agreement.	• Project Performance Monitoring Plan	0%
Row (d): Construction/Implementation		
9: Contract Services – This task includes activities necessary to secure a contractor and award the contract. Contract services will be conducted in-house by each agency and are not included as part of this project.	N/A	N/A
10. Construction Administration – This task includes managing contractor submittal review, answering requests for information, and issuing work directives. Construction will be observed by a competent field inspector or construction manager who will document pre-construction conditions, maintain daily inspection reports, prepare change orders, address questions of the contractor, review the project schedule, review submittals and pay requests, and notify the contractor of deficient work.	For each component: • Notice of Completion	0%
11. Construction/Implementation Activities – Construction includes mobilization/ demobilization, trenching, shoring, excavation, paving, pipe installation, backfill and compaction, masonry, mechanical, and electrical as described in the following subtasks. Construction activities will be in compliance with applicable standards.		
<i>Subtask 11.1 Recycled Water Storage and Pumping System Expansion (SE)</i> - Construction will involve the installation of 0.25 MG recycled water storage concrete tank and expansion of an existing distribution pump station on existing San Elijo JPA property and includes site preparation and excavation, construction of the tank, installation of pipes and valves, pump and motor, electrical and instrumentation, and appurtenances to connect to San Elijo JPA's recycled water system.	• Photographic Documentation • Engineer's Certification • As-Built Drawings	0%
<i>Subtask 11.2 Recycled Water Pipeline: North El Camino Real (OC)</i> - Construction will involve the installation of 17,044 linear feet of 10" PVC pipeline, 4,519 linear feet of 12" PVC, and 18,964 linear feet of 16" PVC. Pipeline installation will include trenching along roadway right-of-ways, installation of pipe, testing, backfill and compaction, and restoration to pre-construction conditions including procurement of a General Construction, Traffic Control, and Water Meter permits.	• Photographic Documentation • Engineer's Certification • As-Built Drawings	0%
<i>Subtask 11.3 Recycled Water Pipeline: South El Camino Real (OM)</i> - Construction will involve the installation of 3,700 linear feet of 6" PVC pipeline in addition to traffic control. Pipeline installation will include mobilization of equipment, trenching and shoring, installation of the pipelines, backfill and compaction, and restoration to pre-construction conditions.	• Photographic Documentation • Engineer's Certification • As-Built Drawings	0%
* The right-hand column displays % complete for each task.		

Figure 4-13: Recycled Water Pipeline: North El Camino Real

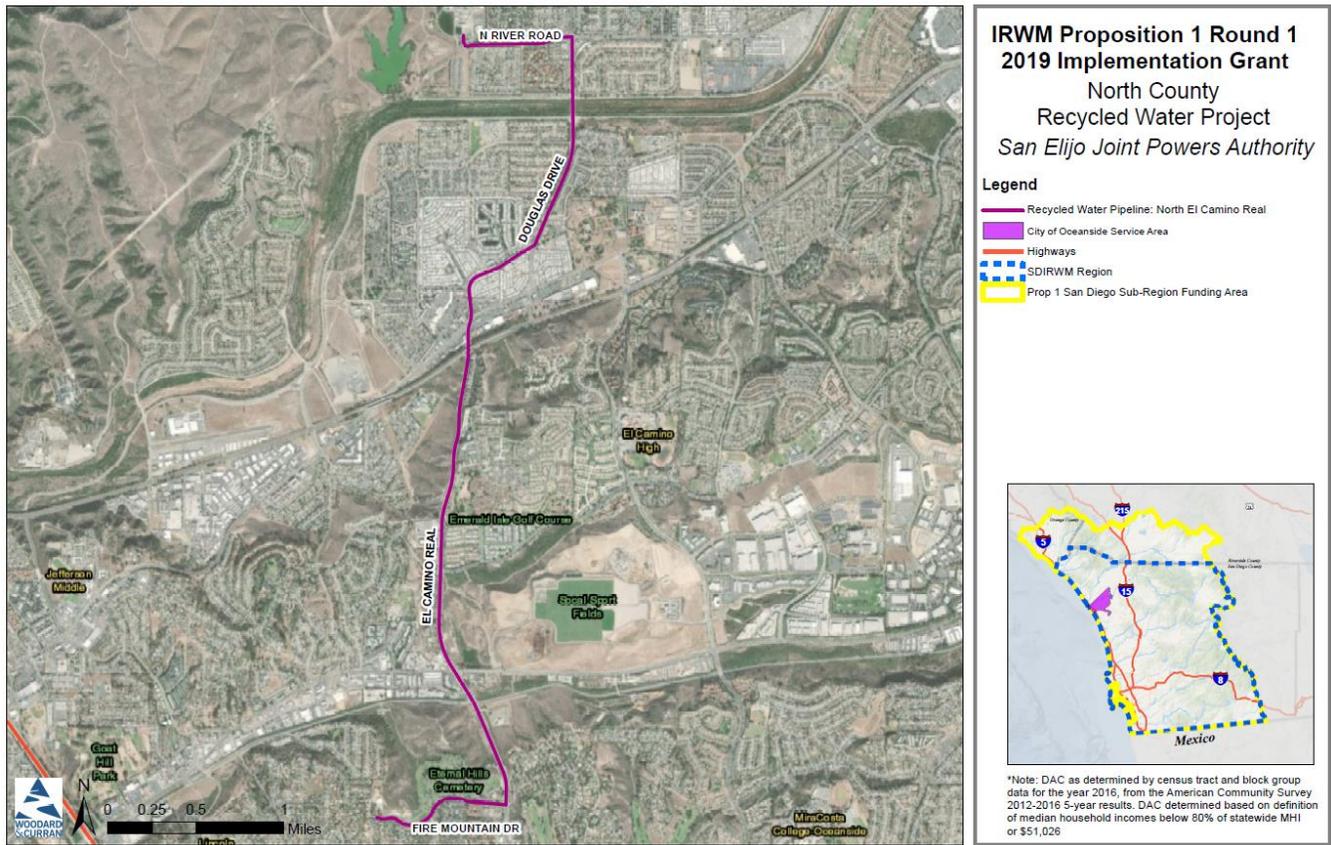


Figure 4-14: Recycled Water Pipeline: South El Camino Real

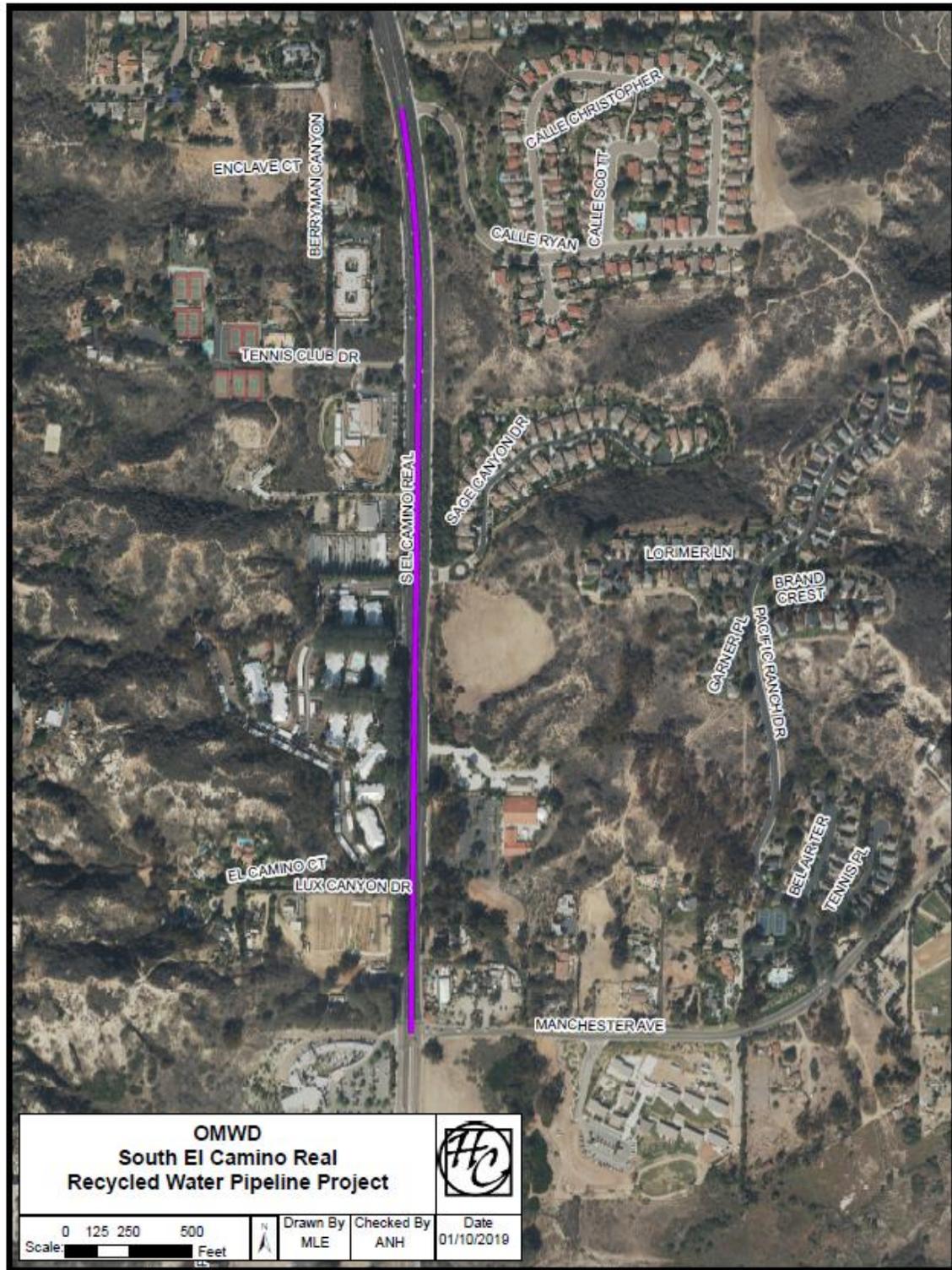
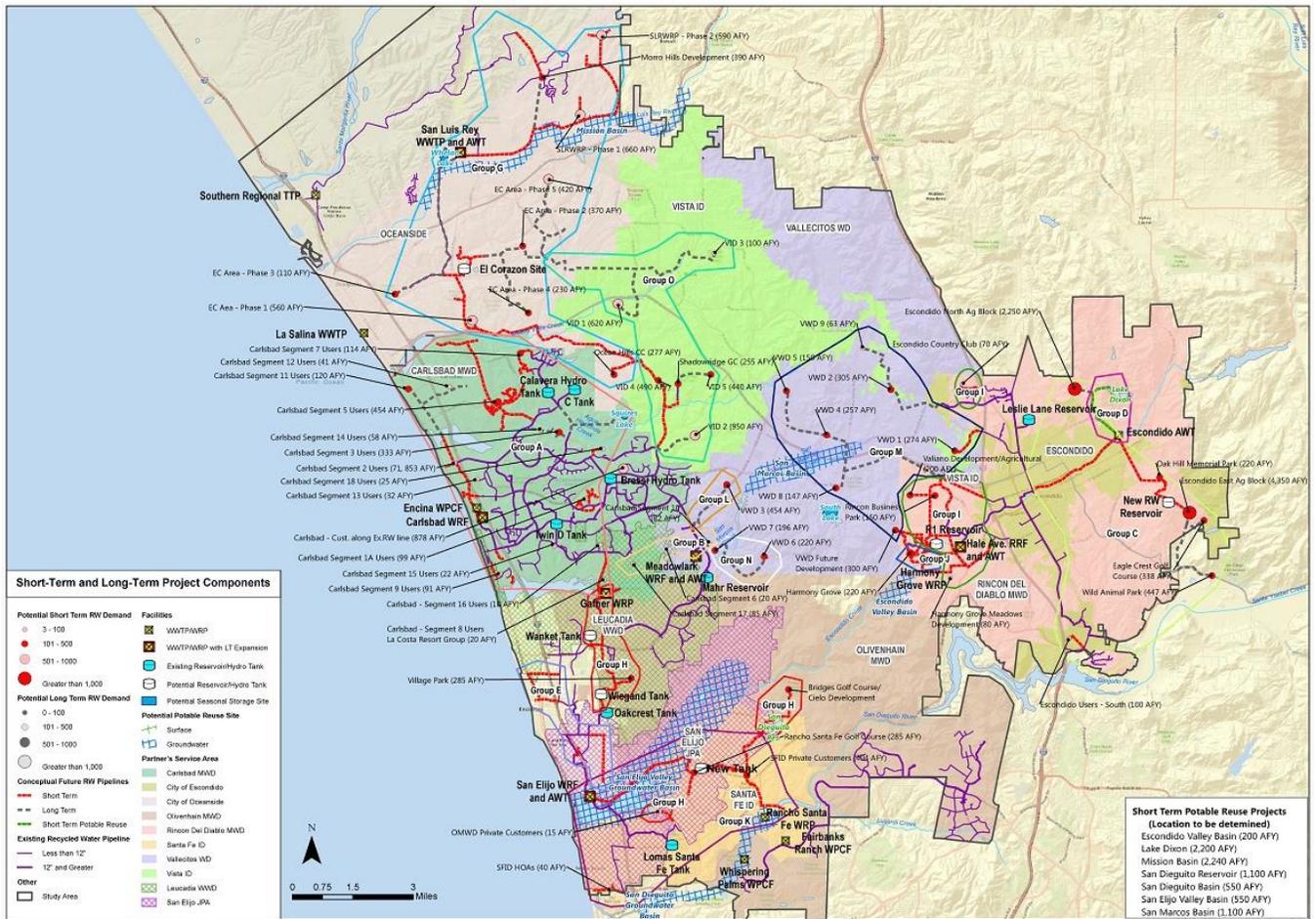


Figure 4-15: North San Diego Water Reuse Coalition Regional Recycled Water Project



Project 7: San Elijo Stormwater Capture & Reuse

Implementing Agency

Local Project Sponsor: San Elijo Joint Powers Authority (San Elijo JPA)

Partners: The Nature Collective

Project Description

Project Description

This project involves construction of stormwater capture and reuse improvements in San Elijo JPA's service area, including 1) upgrades at the San Elijo Water Reclamation Facility (SEWRF); 2) desilting basin improvements to reduce sediment transportation into the San Elijo Lagoon; and 3) education and outreach for storm water pollution prevention and health watersheds conducted at the SEWRF and San Elijo Lagoon. San Elijo JPA will construct improvements to divert and treat stormwater from the regional stormwater channel that runs along the facility, as well as provide treatment for stormwater runoff from the SEWRF site (see **Figure 4-18**). The regional stormwater channel collects stormwater from a 0.78 square mile watershed that discharges directly into the San Elijo Lagoon. Treatment will include the construction of desilting basins and vegetated earthen basins to remove trash, sediment, and nutrients. Treated stormwater will be diverted to the SEWRF headworks for final treatment, filtration, and recycling. The stormwater flow diversion will include a precast pump vault with inlet pipe to regional channel and pumps to move stormwater through approximately 450 ft of 4-inch pipe from the existing channel to a concrete desilting structure, then into the desilting and vegetated earthen basins, before entering the SEWRF. The basins will be approximately 450 feet long by 20 feet wide and range in depth from 3-6 feet. SEWRF treatment includes screening and debris removal, biological treatment, sand filtration and/or microfiltration/reverse osmosis (for a portion of the effluent) to clean the water to meet California Title 22 recycled water standards. The treated and disinfected water will then be fed into the recycled water distribution system for offsite storage and use.

In order to handle the flows from the stormwater diversion project, some upgrades to the SEWRF headworks are needed. Construction of these upgrades began in June 2017 and are currently underway. Work includes the construction and installation of new preliminary treatment to improve debris screening and trash removal, construction of new concrete channels to increase hydraulic capacity, construction of new emergency overflow protection, and improved system automation.

San Elijo JPA is partnered with The Nature Collective, a non-governmental organization (NGO), that will provide community outreach directly related to the project and its benefits. The Nature Collective will provide educational field trips to the San Elijo Lagoon for approximately 2,000 students and educators annually to educate on stormwater capture and reuse for community benefit, along with protection of stormwater quality and pollution impacts on the environment. The Nature Collective will also introduce a pilot for high school students to visit SEWRF along with the lagoon field trip to discuss the similarities and difference between natural and engineered treatment systems. The Nature Collective will teach the value of clean stormwater for the local drinking water supply and to protect the health of the watershed through signage at the Nature Center. Through this effort, the community will better understand sources of pollutants, pollutants impacts to the environment and to reclaiming stormwater, and actions that the students and their families can take to prevent stormwater pollution.

Context

The existing regional stormwater channel captures stormwater flow from a 0.78 square mile watershed (486 acres) and traverses across San Elijo JPA property (adjacent to the SEWRF) to discharge into the San Elijo Lagoon. San Elijo JPA will construct a flow diversion and sedimentation system and will upgrade the SEWRF to allow for increased inflow capacity into the facility to treat captured stormwater. The SEWRF, located in the City of Encinitas, is owned and operated by the San Elijo JPA and has a wastewater treatment capacity of 5.25 million gallons per day (mgd). Although the average daily flow to the SEWRF is approximately 3 mgd, winter storms can peak flows for short durations to approximately 9 mgd. This project will increase the robustness and effectiveness of the preliminary treatment system, increasing peak flow acceptance by 50%, or up to 13 mgd. This additional peak flow capacity will provide the opportunity for stormwater acceptance during rain events without compromising

sewage overflow protection. This will protect the environment and public health from storm water pollution, while harvesting storm water for local water reuse.

The education component of the project complements other existing outreach efforts regarding watershed health, the value of local water, water recycling, and stormwater pollution protection. Educational information will be provided to school tours and classrooms, as well as on signage boards on watershed health and stormwater capture posted along a new multi-use path being constructed along the western edge of SEWRF. The path and signage will be funded by the San Elijo JPA and will be complementary to and separate from this IRWM project.

Project Need

Stormwater Runoff to an Impaired Water Body. Currently, the concrete-lined stormwater channel adjacent to the SEWRF drains stormwater runoff from the watershed directly to the San Elijo Lagoon, a state marine reserve and popular local nature center that is home to or hosts over 1,000 plant and animal species. This stormwater carries trash, bacteria, sediment, metals, and other pollutants. The Lagoon is an impaired water body under the Clean Water Act, listed on the 303(d) list of impaired water bodies for bacteria, sediment, and nutrients. The location of the stormwater channel presents a unique opportunity for stormwater capture and reuse in the area, while improving the quality of water delivered to the San Elijo Lagoon. While a valued recreation area, the San Elijo Lagoon is also locally important for ecological reasons, and includes a variety of wetland habitats that are home to endangered and threatened species. Protecting water quality in the lagoon is important to the continued health of the lagoon.



Figure 4-16. San Elijo Lagoon

Reduce Reliance on Imported Water through Recycled Water Supply. In San Elijo JPA's service area, there are more demands for recycled water that supply available. Diverting polluted stormwater away from the San Elijo Lagoon and routing it to the SEWRF will increase the volume of recycled water in the existing San Elijo JPA non-potable recycled water system serving communities in northern San Diego County. The San Elijo recycled water system serves four water purveyors San Dieguito Water District, Santa Fe Irrigation District, Olivenhain Municipal Water District, and the City of Del Mar.

Climate Resilience. The San Diego region and California are facing water supply concerns brought on by a variety of factors including drought, population growth, and limited local water supplies. San Diego is heavily reliant on imported water, with up to 80% of its demands being met with water imported from the State Water Project (SWP) and Colorado River. As identified in the Climate Change Vulnerability Assessment included in the 2019 *San Diego IRWM Plan*, climate change is expected to reduce the availability of imported water by 20%-25%, and a regional shortfall of 164,000 AFY imported water is anticipated. Captured stormwater will be treated and utilized as recycled water for irrigation, directly offsetting imported water supply. In doing so, the project also helps to address the causes of climate change by reducing energy demands associated with imported water.

Project Benefits

Potable Water Supply. The project will create a local source of water thereby reducing the amount of imported water supplies and creating a more resilient water supply in the region. Captured stormwater will be used as recycled water, offsetting demands for potable water, specifically imported supplies. This project is designed to capture and treat 19 AFY of stormwater. The reduced volume of stormwater runoff was calculated based on an assumed storage capacity of 2.3 acre-feet, and site-specific stormwater runoff parameters gathered from previous stormwater reports prepared for the SEWRF. The runoff volume benefit is based on an estimate of 10 inches of rainfall per year (average for the region), a runoff coefficient of 0.79, a drainage area of 486.4 acres, a water quality volume of stormwater runoff of 18.89 ac-ft based on an 85th percentile storm, and runoff losses of 50%. All 19 AFY captured will be treated for recycled water use. Offsetting potable water will reduce the need to import water to meet non-potable demands.

Reduce Pollutant Loading to Impaired Water Body. By capturing and diverting polluted stormwater flows, the project will reduce pollutant loading to the San Elijo Lagoon, listed on the 303(d) list of impaired water bodies for bacteria, sediment, and nutrients. Based on collected stormwater water samples, the average total suspended solids (TSS) is 285 mg/L, which equates to approximately 14,715 pounds of sediment removed annually.

Reduction in Greenhouse Gases. Importing water is energy intensive, requiring 2.297 MWh/AF to pump to San Diego (California Public Utilities Commission *Embedded Energy in Water Pilot Programs Impact Evaluation*). In contrast, recycled water requires an estimated 0.8 MWh/AF to treat (Equinox Center Report, 2010). The project would use MF/RO to treat a portion of the stormwater for recycled water use, which is more energy intensive than disinfected tertiary recycled water treatment, so the energy required for the project is estimated at 1.3 MWh/AF, reducing energy demands by 0.997 MWh. Based on the State’s energy mix and associated emissions factors, 0.327 metric tons of carbon dioxide equivalent (MT CO₂e) is emitted per MWh used (California Energy Commission and U.S. EPA). This project would save 6.19 MT CO₂e per year.

Supply Reliability. This project expands availability of a local recycled water supply for the region, improving supply reliability because this local supply will be available in all climate and demand conditions.

Climate Resilience. The project will help to address climate resiliency by preparing the area for an increased occurrence of drought conditions expected as a result of climate change.

Improve Understanding of Stormwater. Additional benefits include community education that will improve understanding of stormwater and its relation with watershed systems and health. This outreach is important to promoting a conscientious community that acts to reduce pollutants that affect stormwater quality and the lagoon. It will also help improve understanding of treatment systems and how a combination of engineered and natural systems can address water quality issues.



Figure 4-17. Field trip with The Nature Collective

Primary Quantified Benefits	
Potable Water Supply. 19 AFY of potable water savings through the capture, treatment, and reuse of stormwater.	Reduce Pollutant Loading to Impaired Water Body. Reduce pollutant loading by 14,715 pounds of TSS (285 mg/L) to the San Elijo Lagoon.
Additional Benefits	
Reduction in Greenhouse Gases. 6.19 MT CO ₂ e per year of emissions reduced.	
Supply Reliability. New local water supply will be created for the region, improving supply reliability.	
Climate Resilience. Local water supply will help the community be more resilient to future climate changes	
Improve Understanding of Stormwater. Community outreach will promote a conscientious community to reduce pollutants that affect stormwater quality.	

Disadvantaged Community (DAC) Status

Only 3% of the population within San Elijo JPA’s service area is considered a DAC. However, The Nature Collective outreach will include field trips for 90 high school classes in Escondido and Vista, of which approximately 60 classes are from Title 1 schools.

Completed Work

Technical Feasibility Studies and Design:

- ESA, *San Diego Region Stormwater Capture and Use Feasibility Study* (November 2018)
- Dudek, *SEWRF Stormwater Bioretention Basins Basis of Design* (January 2017)
- Dudek, *San Elijo Water Reclamation Facility Preliminary Treatment Upgrades Preliminary Design Report* (November 2015)

Readiness to Proceed:

- ✓ CEQA and design are 100% complete for *Preliminary Treatment Upgrades*
- ✓ Remaining CEQA and design for *Desilting Basins & Pumping System* is expected to be complete June 2020

CEQA, NEPA, and Permits:

- Dudek, *Recycled Water Pipeline and Facility Upgrades, Mitigated Negative Declaration*; SCH #2016021055 (May 2016)
- Helix Environmental Planning, Inc., *San Elijo Reclamation Facility Upgrades, Addendum to the Final Mitigated Negative Declaration*; SCH #2016021055 (January 2019)
- San Diego RWQCB, Clean Water Act Section 401 Water Quality Certification, September 2019

- US Army Corps of Engineers, Clean Water Act, Section 404, September 2019

Proposed Tasks

A Work Plan for the *San Elijo Stormwater Capture & Reuse* project, including the anticipated tasks necessary to complete the project, deliverables, and current status of the project, is provided in **Table 4-7** below.

Table 4-7: Work Plan for *San Elijo Stormwater Capture & Reuse*

Task and Description of Work to be Completed	Deliverables	%*
Row (a): Project Administration		
1: Project Management – Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents. Prepare invoices including relevant supporting documentation for submittal to DWR via SDCWA. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies, executing local project partner contracts, and managing consultants/contractors.	<ul style="list-style-type: none"> • Environmental Information Form • Financial Statements • Invoices and supporting documentation 	0%
2: Reporting – This task consists of preparing quarterly progress reports detailing work completed during the reporting period. Reports will be submitted to SDCWA for review and inclusion in a progress report and submitted to DWR. This task will also involve preparing the Project Completion Report through the SDCWA no later than 90 days after project completion.	<ul style="list-style-type: none"> • Quarterly Project Progress Reports • Project Completion Report 	0%
Row (b): Land Purchase/Easement		
3: Land Purchase – No land purchases or easements are required for this project because the SEWRF is owned and operated by San Elijo JPA, and The Nature Collective already has access to the Lagoon.	N/A	N/A
Row (c): Planning/Design/Engineering/Environmental Documentation		
4: Feasibility Studies – A feasibility study was already completed for the project (see Completed Work, above).	N/A	100%
5: CEQA Documentation – This task involves preparation of environmental documentation for applicable components of the project. All required Tribal notifications (per PRC §75102) will be completed during the CEQA process. CEQA was completed in May 2016 for <i>Preliminary Treatment Upgrades</i> , and an Addendum to the Facilities Initial Study/Mitigated Negative Declaration will be prepared for the <i>Desilting Basins & Pumping System</i> element by June 2020. CEQA does not apply to <i>Signage and Messaging</i> .	<ul style="list-style-type: none"> • MND Addendum • Tribal Notifications • Notice of Completion • Notice of Determination 	50%
6: Permitting – Acquire all relevant permits for construction of the project. Permits for <i>Preliminary Treatment Upgrades</i> were not required; San Elijo JPA is a self-permitting agency for treatment improvements. Permits for the <i>Desilting Basins & Pumping Station</i> will include CDFW 1602 Streambed Alteration Agreement. San Elijo JPA currently has open San Diego RWQCB Section 401 and USACE Section 404 permits for ongoing work within the storm drain channel; proposed work falls within the allowance of these open permits.	<ul style="list-style-type: none"> • CDFW 1602 Streambed Alteration Agreement 	50%
7: Design – Complete preliminary design, preliminary cost estimates, preliminary design reports, final design plans and specifications for the project. Design was completed for <i>Preliminary Treatment Upgrades</i> by Dudek in November 2015. Design for <i>Desilting Basins & Pumping System</i> is currently underway by Fusco and Kimley Horn and Associates and is at 30% design.	<ul style="list-style-type: none"> • Final Design Plans and Specifications 	50%
8: Project Performance Monitoring Plan – This task involves developing and submitting a Project Performance and Monitoring Plan, including baseline conditions, monitoring systems to be used, methodology of monitoring, frequency	<ul style="list-style-type: none"> • Project Performance Monitoring Plan 	0%

Task and Description of Work to be Completed	Deliverables	%*
of monitoring, location of monitoring points, and any other stipulations required by DWR in the Final Grant Agreement.		
Row (d): Construction/Implementation		
<p>9: Contract Services – Activities necessary to secure a contractor and award the <i>Desilting Basins & Pumping System</i> contract including developing and bidding documents, preparing advertisement and contract documents for construction contract bidding, conducting a pre-bid meeting, opening and evaluating bids, selecting a contractor, awarding the contract, and issuing notices to proceed. Contracting for the <i>Preliminary Treatment Upgrades</i> is complete and not included in this work plan and budget. <i>Signage and Messaging</i> will be directly implemented by the project partner.</p>	<ul style="list-style-type: none"> • Bid Documents • Proof of Advertisement • Notice of Award • Notice to Proceed 	50%
<p>10. Construction Administration – This task includes managing contractor submittal review, answering requests for information, and issuing work directives. Construction will be observed by a competent field inspector or construction manager who will document pre-construction conditions, maintain daily inspection reports, prepare change orders, address questions of the contractor, review the project schedule, review submittals and pay requests, and notify the contractor of deficient work. Construction administration is underway for the <i>Preliminary Treatment Upgrades</i> and is not included in this budget; <i>Desilting Basins & Pumping System</i> will begin in December 2020.</p>	<ul style="list-style-type: none"> • Notice of Completion 	50%
<p>11. Construction/Implementation Activities – Construction/Implementation activities are included in more detail below. Construction activities in Subtasks 11.1 and 11.2 will be in compliance with applicable standards.</p>		
<p><i>Subtask 11.1: Preliminary Treatment Upgrades</i> – Construction includes mobilization, demobilization, post-construction asphalt restoration, start-up programming, commissioning of new screening and dewatering equipment. This task includes replacing existing 19-millimeter (mm) bar screens with 6-mm step-screens; construction of rock and heavy debris catch basin, installation of new washing and dewatering equipment for efficient disposal of screening material; installation of process monitoring equipment; and development of SCADA interface for system automation and control.</p>	<ul style="list-style-type: none"> • Photographic Documentation • Engineer’s Certification 	100%
<p><i>Subtask 11.2: Desilting Basins & Pumping System</i> – Construction includes mobilization and demobilization, construction of 450 feet long by 20 feet wide desilting and earthen vegetated basins (ranging in depth from 3-6 feet), and cleanup. Construction of 450 feet of 4-inch pipe to regional stormwater channel and pump diversion system.</p>	<ul style="list-style-type: none"> • Photographic Documentation • Engineer’s Certification 	0%
<p><i>Subtask 11.3: Signage and Messaging</i> – The Nature Collective will install permanent signage at the Nature Center to teach the value of diverting stormwater and making it part of the drinking water supply, in addition to the benefits of reduced pollutant loading to the San Elijo Lagoon. The Nature Collective will provide educational field trips to the San Elijo Lagoon for approximately 2,000 students and educators annually for a period of two years to educate on stormwater pollution impacts on the environment.</p>	<ul style="list-style-type: none"> • Display board layout (PDF) • Watershed curriculum with stormwater capture lesson 	0%
<p>* The right-hand column displays % complete for each task.</p>		

Figure 4-18: Stormwater Capture & Reuse Project Site



Grant Administration

Implementing Agency

Implementing Agency: San Diego County Water Authority (SDCWA)

Partners: Local project sponsors (City of National City, City of San Diego, Fallbrook Public Utility Department, City of Oceanside, and San Elijo Joint Powers Authority)

Project Description

Project Description

SDCWA is the applicant for the *2019 IRWM Implementation Grant Proposal* and will be responsible for contracting with DWR, contracting with local project sponsors (LPS), submitting all invoices, progress reports, and deliverables to DWR on behalf of LPS, ensuring compliance with all grant requirements, and coordinating with DWR and LPS. SDCWA has served as the grant administrator and has been awarded and managed eight IRWM grant programs since 2010 including: two Proposition 1 IRWM Grants (Planning Grant and Disadvantaged Community Involvement Grant), four Proposition 84 IRWM Implementation Grants (Round 1, Round 2, Drought Round, and Final Round), one Proposition 84 IRWM Planning Grant, and one Proposition 50 IRWM Implementation Grant.

Proposed Tasks

A Work Plan for *Grant Administration*, including the anticipated tasks necessary to complete the project, deliverables, and current status of the project, is provided in **Table 4-8** below.

Table 4-8: Work Plan for Grant Administration

Task and Description of Work to be Completed	Deliverables	% Complete
Row (a): Project Administration		
<p>1. Agreement Administration – SDCWA will be responsible for reporting and compliance requirements associated with administration of the grant and will coordinate with the LPS project managers responsible for implementing the projects included in this proposal and any associated grant sub-agreements. SDCWA will respond to DWR’s reporting and compliance requirements upon grant award and coordinate with DWR on agreement execution and administration, in coordination with LPS project managers. SDCWA will develop and execute individual agreements with LPS governing grant funding requirements and the responsibilities for each party. SDCWA will coordinate on project amendments, as necessary, with DWR and LPS project managers. To track and submit reports and project deliverables, as required, this task includes enhancement of the existing Grants Webtool to incorporate a new Proposition 1- Round 1 Implementation Grant module for LPS use and maintenance of the module throughout the program period. SDCWA will also participate in grant administration workshops and coordination meetings to obtain knowledge related to grant compliance requirements and regulations essential to administering this grant program</p>	<ul style="list-style-type: none"> Executed Grant Agreement 	0%
<p>2. Invoicing – SDCWA will coordinate with LPS project managers to compile invoices for submittal to DWR. This includes collecting invoice documentation from each of the project sponsors, reviewing invoice materials for accuracy and adequacy in accordance with Grant Agreement criteria, coordinating necessary updates with LPS, and compiling information into a DWR Invoice Packet. This task also includes tracking and monitoring the Grant Program’s budget and LPS reimbursements and coordinating with LPS and DWR on comments and questions related to billing, funding disbursements and other grant requirements. This task</p>	<ul style="list-style-type: none"> Invoices and associated backup documentation 	0%

Task and Description of Work to be Completed	Deliverables	% Complete
also includes invoicing and managing grant administration costs incurred by SDCWA for the program.		
<p>3. Progress Reports and Completion Reports – SDCWA will be responsible for compiling quarterly progress reports, as well as all project Completion Reports for submittal to DWR. SDCWA will coordinate with LPS to address any report comments and issues. SDCWA will also develop and submit quarterly grant administration progress report and the Completion report for the Program.</p> <p>Reports will meet generally accepted professional standards for technical reporting and the requirements outlined in provisions of the Grant Agreement. For example, progress reports will explain the status of the project and will include the following information:</p> <ul style="list-style-type: none"> • summary of the work completed for the project during the reporting period; • activities and milestones achieved; and • accomplishments and any problems encountered in the performance of work. <p>Project completion reports will include:</p> <ul style="list-style-type: none"> • documentation of actual work done; • changes and amendments to each project; • a final schedule showing actual progress versus planned progress; and • copies of final documents and reports generated during the project. <p>This task also includes development of a grant completion report following completion of all projects included in the grant agreement.</p>	<ul style="list-style-type: none"> • Quarterly Project Progress Reports • Grant Completion Report 	0%