

WaterSMART: Title XVI Congressionally Authorized Water
Reclamation and Reuse Projects

Padre Dam Water Recycling Facilities - Phase 1 Expansion

Grant Application Proposal
(BOR-DO-20-F008)

Prepared for:
United States Bureau of Reclamation



Prepared by:
Padre Dam Municipal Water
District

February 2020

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WaterSMART: Title XVI Water
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(FOA No. BOR-DO-20-F008)

Padre Dam Water Recycling Facilities –
Phase I Expansion Grant Application

Submitted by:
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

February 19, 2020

Title Page

Title of Title XVI Project: Padre Dam Water Recycling Facilities – Phase 1 Expansion

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1 Technical Proposal and Evaluation Criteria

1.1 Executive Summary

Padre Dam Municipal Water District (Padre Dam MWD) is applying to the *WaterSMART: Title XVI Water Reclamation and Reuse Projects* grant for approximately \$33 million to complete expansion of Padre Dam MWD’s recycled water production capacity and to implement the first phase of potable reuse within eastern San Diego County, under the Title XVI-authorized “San Diego Area Water Reclamation Program” (43 U.S.C. 390h-10). Of the Title XVI Project’s total maximum grant amount of \$33 million, to-date it has been awarded approximately \$16.4 million from Reclamation through the WaterSMART Title XVI program during the FY2016, FY2017, FY2018, and FY2019 solicitations. The Title XVI Project will implement Padre Dam MWD’s Phase I Water Recycling Project and includes expansion of the Ray Stoyer Water Recycling Facility (WRF), construction of a new advanced water purification facility, potable reuse conveyance pipelines, a product water pump station, and a biosolids digestion facility to process sludge and offset energy demands of the project. The Title XVI Project will create 3,900 AFY (or 3.5 MGD) of potable water, allowing an offset of an equal amount of imported water. Increasing local water supplies helps to increase supply reliability, reduce energy demands for water supply, improve surface water quality, and protect against the effects of droughts. In addition to the benefits realized through offsetting imported water demands, the Title XVI Project will divert wastewater flows that would otherwise be sent to the City of San Diego’s Metro System for treatment at the Point Loma Wastewater Treatment Plant (Point Loma WWTP) and final discharge to the Pacific Ocean.

Date: February 19, 2020

City: Santee

Applicant: Padre Dam Municipal Water District

County: San Diego

State: California

1.2 Technical Project Description

Padre Dam MWD is a leading member of the East County Advanced Water Purification (AWP) Program, a partnership of four water and wastewater agencies in eastern San Diego County: Padre Dam MWD, Elix Water District, City of El Cajon, and County of San Diego. The goal of the East County AWP Program is to explore and implement development of potable reuse and to increase the production and use of recycled water, both potable and non-potable, in eastern San Diego County.

Padre Dam MWD’s Phase I Project is part of the Title XVI-authorized “San Diego Area Water Reclamation Program”. The San Diego Area Water Reclamation Program was authorized under 43 USC 390h-10 in 1992 under the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992. This program includes projects for “planning, design and construction of demonstration and permanent facilities to reclaim and reuse water in the San Diego metropolitan service area,” and allows for use of federal funds for up to 25% of the total costs,

exclusive of operation and maintenance. The Phase I Project is also referred to herein as the “Title XVI Project” and is Phase I of the East County AWP Program.

The Padre Dam Water Recycling Facilities – Phase I Expansion (Phase I Project or Title XVI Project) will create an additional 3,900 AFY new potable water, and equally reduce demand for imported water. It will also offset wastewater flows to the regional wastewater treatment facility, Point Loma WWTP, which is anticipated to require substantial upgrades in the near future to provide appropriate environmental protections when discharging to the Pacific Ocean. Padre Dam MWD’s entire potable water supply is currently met with water purchased from the San Diego County Water Authority (SDCWA), which is primarily imported water from the State Water Project (SWP) and Colorado River. Construction of the Phase I Project would expand the Ray Stoyer WRF to 6.0 million gallon per day (MGD) capacity; construct a 3.5 MGD capacity Advanced Water Purification (AWP) facility; construct a conveyance pipeline and pump station for advanced treated water conveyance to Lake Jennings for potable reuse with surface water augmentation (SWA); add sludge thickeners; and construct a biosolids co-digestion facility to process sludge in conjunction with organic food waste diverted from landfills and to produce energy from biogas. The Phase I Project would create a new, drought-proof, local supply to improve water supply reliability, offset demands for imported water from the Sacramento-San Joaquin Bay-Delta and Colorado River systems, and reduce both wastewater treatment and water supply costs for Padre Dam MWD and its customers.

1.2.1 Project Needs and Objectives

Padre Dam MWD’s drinking water is entirely supplied by water purchased from SDCWA. SDCWA purchases water from Metropolitan Water District of Southern California (Metropolitan or MWD), receives imported water through agreements with other agencies, and supplies desalinated seawater. Approximately 90% of SDCWA’s supplies are imported from the SWP and Colorado River. These supplies are expensive and increasingly unreliable in times of drought. Throughout San Diego County, there is an effort to increase supply reliability through development of local, drought-proof, sustainable supplies, such as SDCWA’s use of desalinated water from the Carlsbad Desalination Project, which began deliveries to SDCWA’s system in December 2015. For Padre Dam MWD, increasing supply reliability means increased production and use of recycled water for non-potable uses to offset imported potable water demands, as well as development and implementation of potable reuse to help meet drinking water demands. In addition to being a local, drought-proof, and sustainable supply, recycled water also provides other regional benefits, such as offloading flows to the regional wastewater collection and treatment system (Metro System and Point Loma WWTP) that requires significant capital improvements in the near future, increasing supply reliability, reducing risks associated with imported water supply interruptions from natural disasters, and providing a buffer against potential supply impacts associated with drought. Due to the ever-increasing costs of imported water supplies, Padre Dam MWD’s water costs have risen 175% between 2006 and 2018. In addition, wastewater disposal cost to the regional

wastewater collection system is anticipated to increase significantly with the implementation of City of San Diego's Pure Water Program in the near future. Implementation of the Phase I Project will help reduce both water- and wastewater-related costs to Padre Dam MWD's ratepayers by mitigating future rate increases. The Title XVI Project was developed to help address these needs and objectives.

1.2.2 Padre Dam MWD

Padre Dam MWD provides potable water, recycled water, and wastewater treatment services to approximately 100,000 customers in eastern San Diego County (Padre Dam MWD, 2015b). Padre Dam MWD's service area is divided into two separate areas termed the Eastern Service Area (ESA) and Western Service Area (WSA), approximately 60 square miles and 20 square miles, respectively. The ESA includes the unincorporated communities of Alpine, Blossom Valley, Crest, Dehesa, Flinn Springs, and Harbison Canyon. The WSA includes the City of Santee, a portion of the City of El Cajon, and a portion of the unincorporated community of Lakeside. Padre Dam MWD provides drinking water services to both the ESA and the WSA while providing wastewater services to only the WSA. Padre Dam MWD's existing average wastewater flow is approximately 4.5 MGD. An average of 2.0 MGD wastewater is treated at the Ray Stoyer WRF, owned and operated by Padre Dam MWD, to produce Title 22 tertiary recycled water, and the remaining wastewater flow is conveyed to the City of San Diego's Metropolitan Sewerage System (Metro System). The Metro System conveys wastewater from the City of San Diego and 15 Participating Agencies, including Padre Dam MWD, to Point Loma WWTP for treatment prior to final disposal to the Pacific Ocean.

1.2.3 Phase I Project

Potable reuse as pursued by Padre Dam MWD with this Project will be implemented as indirect potable reuse (IPR), which uses advanced treatment to produce high-quality recycled water suitable for potable reuse when coupled with an environmental buffer. Following time spent traveling through an environmental buffer and blending with other raw supplies, the advanced treated water is extracted and treated at a water treatment plant before being distributed to customers for potable use. Padre Dam MWD identified two potential options for environmental buffers that could be used for IPR: groundwater recharge at Santee Basins and SWA at Lake Jennings.

The Project was originally envisioned to produce tertiary recycled water using groundwater recharge as the environmental buffer for potable reuse and was described in this way in the past FY2016 and FY2017 Title XVI funding applications. Groundwater recharge was selected at the time because regulations were already in place (unlike the SWA regulations) and would allow Padre Dam MWD to move forward with pursuit of IPR. However, the Santee Basin, which would have served as the environmental buffer, had limited capacity and would not have allowed for future expansion of IPR during the planned Phase II of the East County AWP Program. Since submittal of the Project under the FY2016 and FY2017 WaterSMART Title XVI FOAs, the State has issued regulations for IPR using SWA. Padre Dam MWD has completed

hydrodynamic modeling of Lake Innings that demonstrated its suitability as an environmental buffer and received a Conceptual Project Approval from the California State Water Resources Control Board’s Division of Drinking Water (DDW) in 2017. Lake Innings has sufficient capacity to provide the required residence time and dilution criteria set forth in the State’s SWA Regulations for the entire volume of water recycled by the expanded Ray Stoyer WRF in Phase I, as well as the additional advanced treated water flow planned for Phase II. As a result, Padre Dam MWD revised the Title XVI Project under the FY2018 WaterSMART Title XVI FOA such that all additional recycled water produced by the Project would be advanced treated for IPR using SWA at Lake Innings as the environmental buffer.

The Phase I Project will expand the existing Ray Stoyer WRF from 2.0 MGD to 6.0 MGD tertiary capacity and will add a new 3.5 MGD AWP facility. It will also construct conveyance facilities and a pump station for the advanced treated water for potable reuse at Lake Innings as an environmental buffer. Associated pipelines, pump stations, and other facilities will be constructed as required to achieve increased recycled water production, advanced water purification, and conveyance for SWA of the advanced treated water. Finally, the Phase I Project will construct a biosolids digestion facility to process sludge produced by the Ray Stoyer WRF. This biosolids digestion facility will also generate energy that can be used to offset a portion of the Project’s energy demands. The Phase I Project is divided into four sub-phases, as described here.

Phase IA-1: Ray Stoyer WRF Expansion

The Ray Stoyer WRF has a current capacity of 2.0 MGD and treats wastewater from approximately 69,000 people (Padre Dam MWD, 2016a). Title 22 recycled water produced at the Ray Stoyer WRF is currently used at the Santee Lakes Recreation area, as well as for irrigation by recycled water customers within Padre Dam MWD’s service area. The Ray Stoyer WRF is permitted for up to 2.0 MGD of live stream discharge from the Santee Lakes to the San Diego River via Sycamore Creek, a tributary to the San Diego River. The existing WRF treatment process includes primary sedimentation, biological nutrient removal, secondary clarification, rapid mix, flocculation, filtration, and chlorination (see **Figure 1-1**). At present, recycled water production and use are limited by the capacity of the Ray Stoyer WRF and demands. Excess wastewater flows from Padre Dam MWD’s service area not treated at Ray Stoyer WRF are conveyed to the Point Loma WWTP through the Metro System for treatment and final discharge to the Pacific Ocean. The Point Loma WWTP is owned and operated by the City of San Diego.

Figure 1-1: Existing Treatment Train for the Ray Stoyer WRF



Source: Padre Dam MWD, 2015b.

The Title XVI Project will retrofit the existing treatment trains for the Ray Stoyer WRF to increase its capacity to 6.0 MGD (to produce 5.7 MGD Title 22 tertiary water for recycled water use and advanced treatment). This upgrade will be accommodated within the existing footprint of the Ray Stoyer WRF site and will require the enlargement of the headworks and grit removal, an equalization tank, the addition of one Biological Nutrient Removal (BNR) basin and three secondary clarifiers, and the addition of tertiary filters. To accommodate the additional flows to the Ray Stoyer WRF, the existing influent pump station (IPS) will also be expanded.

Through the WRF expansion to 6.0 MGD, Padre Dam MWD will be able to treat for reuse purposes all of the wastewater that is projected to be produced within its service area through 2040. Title 22 tertiary water produced by the expanded Ray Stoyer WRF will be delivered to existing recycled water customers, discharged to Sycamore Creek via Santee Lakes with an option to recirculate it back to the IPS (to minimize live stream discharges to the San Diego River and maintain permit compliance), or diverted to the AWP facility constructed under Phase IA-2. The waste stream and sludge will be sent to the biosolids facility constructed under Phase IC for processing.

Phase IA-2: Advanced Water Purification Facility

Phase IA-2 includes the construction of the AWP treatment train with a production capacity of 3.5 MGD for potable reuse. The AWP facility will provide additional treatment to the recycled water from the Ray Stoyer WRF using chlorine disinfection, microfiltration, reverse osmosis, and an advanced oxidation process (e.g. ultraviolet treatment with free chlorine). The resulting advanced treated water will be used for SWA at Lake Jennings (as described in Phase IB), in accordance with applicable permits. The brine will be conveyed to the Metro System (Padre Dam MWD, 2015a).

Phase IB: AWP Pipeline and Pump Station to Lake Jennings

Advanced treated water from the new AWP facility will be used for potable reuse. Padre Dam MWD has identified a preferred option for an environmental buffer for IPR-SWA at Lake Jennings. SWA at Lake Jennings provides an opportunity to grow the project in the future that would not be available if Padre Dam MWD implemented this project using groundwater recharge at the Santee Basin. The use of Lake Jennings allows for all water produced by the Phase I Project to be used for potable reuse.

Lake Jennings is located in Lakeside, California, and is owned and operated by Felix Water District. AWP product water will be conveyed to Lake Jennings using an approximately 10-mile long, 24-inch diameter pipeline. A 500-HP capacity pump station located at the AWP Facility site will be used for the conveyance. Product water will be dechlorinated before entering to the lake. AWP product water will mix with the native water sources in the lake before being pulled out for additional treatment at the existing Levy Water Treatment Plant for potable consumption. According to the completed hydrodynamic modeling effort, in Phase I of the

project, AWP product water would have a hydraulic residence time in the lake for approximately 24 months, which is conservatively higher than the minimum required hydraulic residence time of 6 months per the SWA regulations.

Phase IC: Biosolids Digestion Facility

The waste sludge from the expanded Ray Stoyer WRF will be sent to a new biosolids digestion facility constructed under Phase IC. The new biosolids digestion facility will be located at the Ray Stoyer WRF. The biosolids digestion facility will be designed and constructed to allow for potential co-digestion of the thickened WRF sludge with organic waste from the landfill or haulers to enhance bio-methane production which will be used to offset energy demands of the Phase I Project and to reduce greenhouse gas emissions. It is anticipated that the expanded Ray Stoyer WRF will produce 20,568 lbs/day or 0.32 MGD solids. Two 425 gpm capacity rotary drum thickeners will be constructed at the expanded Ray Stoyer WRF, and the resulting 38,000 gallon-per-day (gpd) 5% solids thickened sludge will be conveyed to the biosolids digestion facility. Organic material diverted from the landfill by haulers and fat oil and grease (FOG) will be trucked to the facility for co-digestion. The digester includes anaerobic digestion and dewatering and will allow co-digestion of sludge with organic waste of up to 100 tons/day and FOG of up to 10,000 gpd. Two 1,000,000 gallon mesophilic digesters will be constructed, along with two 85 gallon-per-minute (gpm) capacity screw presses for solids dewatering (Padre Dam MWD, 2018a). Waste heat from the biosolids digestion process will be used to power the digester facilities, while energy produced by the facility will be used onsite by Padre Dam MWD for the AWP facility electrical demand.

1.2.4 Phase I Project Status

Planning and Pre-Design Activities:

A Facilities Planning Report (Padre Dam MWD, 2015a) was completed for the Title XVI Project in October 2015. Padre Dam MWD hired Kennedy Jenks to complete the planning and preliminary design work for the Title XVI project. A notice to proceed was issued in February 2016 for both planning and pre-design work.

- **Phase IA: Ray Stoyer WRF Expansion and AWP Facility** – The draft Basis of Design Report and predesign drawings for the WRF expansion (Phase IA-1) and the AWP facility (Phase IA-2) were first completed in 2017. After changing the environmental buffer from Santee Groundwater Basin to Lake Jennings for SWA a few changes occurred to the Basis of Design Report. The revised 10% design for Phase 1A-1 and Phase 1A-2 was completed in 2019, and the Basis of Design Report is currently being finalized for inclusion in the procurement documents for the design-build contract. Final design work for Phase IA-1 and Phase IA-2 is anticipated to continue in 2020 under a design-build contract.

- **Phase IB: AWP Pipeline and Pump Station to Lake Jennings** – An AWP pipeline alignment study and preliminary analysis for the pump station were first completed in 2017. The alignment study was revised in 2018 after receiving the conceptual approval for use of Lake Jennings for SWA from DDW in 2017. The Basis of Design Report is currently being finalized for inclusion in the procurement documents for the design-build contract. Design of Phase IB is anticipated to begin in 2020.
- **Phase IC: Biosolids Digestion Facility** – A feasibility study for the biosolids co-digestion project under Phase 1C was first completed in 2017. Predesign of the biosolids digestion and energy recovery facility was finalized in 2018. The Basis of Design Report is currently being finalized for inclusion in the procurement documents for the design-build contract. Design of Phase IC is expected to begin in 2020.

Environmental Compliance Activities:

Environmental compliance is required before construction can begin. Phase IA project-level environmental documentation was certified in 2015 for California Environmental Quality Act (CEQA), and CEQA-Plus (including federal crosscutters for National Environmental Policy Act [NEPA] compliance) was completed in March 2017 (2015 MND). Due to project scope changes since the 2015 MND, Padre Dam MWD completed a Programmatic Environmental Impact Report (PEIR) in 2017 for both the Title XVI Project and Phase II of the East County AWP Program to comply with CEQA (2017 PEIR). The 2017 PEIR included federal crosscutters for compliance with NEPA. A CEQA project-level analysis was completed for Phase IA in the 2018 MND to address the Title XVI Project as currently being implemented (3.5 MGD AWP with SWA at Lake Jennings). This Project-level document is a Tiered MND based on the 2017 PEIR. CEQA-Plus requirements were addressed in 2019 as part of Padre Dam MWD’s State Water Resources Control Board (SWRCB) Clean Water State Revolving Fund application. Documentation with the federal crosscutters and alternatives was submitted to SWRCB in May 2019 and is expected to be finalized by June 2020 in cooperation with SWRCB. Reclamation is expected to issue a FONSI by Summer 2020 for the entire Project, because sufficient environmental documentation to make this determination for the Project was provided in previous rounds of Title XVI funding.

Table 1-1 shows the status and anticipated schedule for environmental compliance activities.

Table 1-1: Phase I Project Environmental Compliance Schedule - Anticipated

Activity	CEQA Document	NEPA Document	Completion Date
Phase IA-1 and Phase IA-2 Ray Stoyer WRF Expansion and Advanced Water Purification Facility	MND (SC No. 2015071078)	CEQA-Plus (SWRCB SRF Environmental Package)	July 2015 (CEQA); March 2017 (CEQA-Plus)

Activity	CEQA Document	NEPA Document	Completion Date
Title XVI Project (Phases IA, IB, and IC)	PEIR (SC No. 2015111014)	None	May 2017 (CEQA)
Title XVI Project (Phases IA, IB, and IC)	Tiered MND (SC No. 2018091029)	CEQA-Plus (SWRCB SRF Environmental Package); FONSI (Reclamation)	December 2018 (CEQA); expected completion June 2020 (CEQA-Plus); Summer 2020 (FONSI)

Design-Build Contract Procurement Activities:

Padre Dam MWD is executing the Title XVI Project with a progressive design-build contract for all components with two progressive design-build contract packages:

- Package #1 is for the design and construction of the WRF expansion, the AWP facility, and the biosolids handling facilities (Phase IA and Phase IC)
- Package #2 is for the design and construction of the AWP product water pipeline and the pump station to Lake Jennings (Phase IB)

Selection of the design-build contractor will be completed with a two-step approach. Step 1 includes releasing a Request for Qualifications (RFQ) and shortlisting the top three Proposers. Step 2 includes releasing a Request for Proposals (RFP) to the pre-selected Proposers to submit their scope and fee proposals to complete the design and construction of the project infrastructure elements.

Step 1 of the contract procurement for Package #1 has been completed. The RFQ was released in December 2019 and the shortlisting has been completed. The RFP for Package #1 is scheduled to be released in April 2020, and final selection of the design-build contractor is expected to be completed by August 2020.

Step 1 of the contract procurement for Package #2 has also been completed. The RFQ was released in January 2020, and shortlisting will be completed in April 2020. The RFP for Package #2 is scheduled to be released in May 2020. Final selection of the design-build contractor is expected to be completed by August 2020.

Scope of the progressive design-build contracts will include completing the full design and construction of all the infrastructure components. Construction of the Title XVI project components is expected to begin in Fall 2021 and end by the end of 2024. **Table 1-2** shows the anticipated schedule for construction activities.

Table 1-2: Phase I Project Construction Schedule - Anticipated

Title XVI Project Component	Construction Schedule
Phase IA-1 Ray Stoyer WRF Expansion	October 2021 - December 2024
Phase IA-2 Advanced Water Purification Facility	October 2020 - December 2024
Phase IB AWP Pipeline and Pump Station to Lake Jennings	October 2020 - December 2024
Phase IC Biosolids Digestion Facility	October 2020 - December 2024

1.3 Evaluation Criteria

1.3.1 Evaluation Criterion 1: Water Supply

The Title XVI Project will create an additional 3,900 AFY of potable water through the use of advanced treated water. Padre Dam MWD’s 100,000 gpd capacity AWP Demonstration Facility has been constructed and under operation since April 2015, demonstrating that the proposed AWP facility under the Title XVI Project will meet or exceed all DDW standards for potable reuse water, while the Lake Jennings hydrodynamic modeling results showed it was suitable for SWA. The Title XVI Project will implement Phase I of the East County AWP Program. Water produced by the Phase I Project will be used to offset a portion of the potable water demands currently met with imported water sourced from the SWP and the Colorado River.

1.3.1.1 Subcriterion No. 1a - Stretching Water Supplies

1. ***How many acre-feet of water are expected to be made available each year upon completion of the Project? What percentage of the present and/or future annual demand in the project sponsor’s service area will the Project’s reclaimed water provide upon Project completion? The percentage should be based on the total service area demand, not just recycled water demand. Use the total capacity of the entire Project upon completion, not just the water that will be produced by the activities that will be completed over the next two years.***

Upon completion of the *Title XVI Project*, Phase I will produce a total of 3,900 AFY of potable water from local, drought-proof, sustainable supplies. Full deliveries of potable water are expected at the start of 2025, immediately following completion of construction of the Title XVI Project at the end of 2024. Padre Dam MWD’s potable water demands and the percentage of potable demands offset by the Title XVI Project are presented in **Table 1-3**. The Title XVI Project will offset between 26% and 28% of Padre Dam MWD’s total imported water demands.

Table 1-3: Padre Dam MWD’s Imported Supplies and Percent Offset by the Title XVI Project

	2025	2030	2035	2040	Average (2025 2040) ¹
Imported Water without the Title XVI Project (AFY)	14,033	14,214	14,445	14,800	14,373
Total Imported Water Offset by Title XVI Project (AFY)	3,900	3,900	3,900	3,900	3,900
Imported Water with the Title XVI Project (AFY)	10,133	10,314	10,545	10,900	10,473
% Imported Water Offset	28%	27%	27%	26%	27%

¹ Averaged across the years for which the project will provide full deliveries

Source: Padre Dam MWD, 2016a.

2. Will the Project reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies? Explain.

Padre Dam MWD’s entire drinking water supply consists of water purchased from SDCWA and is primarily imported water from the SWP and Colorado River, with some local desalinated seawater from the Carlsbad Desalination Project. As a result of local policies to reduce reliance on imported water supplies, all water produced by the Title XVI Project (3,900 AFY) would be used to offset this purchased imported water, rather than offsetting both imported water and local desalinated water. Offsetting this source of water would reduce or postpone the need to develop future additional imported water supplies and associated infrastructure. Padre Dam MWD’s source opportunities are limited to water purchased from SDCWA, locally-produced recycled water, and minimal groundwater used to supplement the recycled water supply (Padre Dam MWD, 2016). Unless the Ray Stoyer WRF is expanded, any increase in demand as Padre Dam MWD’s population grows and the region experiences other factors that increase demand (including but not limited to economic growth, changes in precipitation regime and drought, or natural disaster) would need to be met by increased imported water purchases.

Existing groundwater in the Santee Basin is unlikely to be developed as a supply due to groundwater rights-related challenges and the City of San Diego’s longstanding Pueblo rights to the shared basin. Surface water flows from the San Diego River also present limited supply opportunities for similar reasons. Advanced treated potable reuse water is a local, drought-proof, sustainable supply, and creates a new source of potable water for Padre Dam MWD’s customers that would reduce, postpone, or could eliminate the need for new or expanded non-recycled supplies for the future.

3. Will the Project alleviate pressure on existing water supplies and/or facilities? If so, please describe the existing water supplies and/or facilities that will be impacted and

explain how they will be impacted by the Project, including quantifications where applicable.

The Title XVI Project would alleviate pressure on imported water systems (SWP and the Colorado River) by offsetting demands for imported water.

Padre Dam MWD's entire potable water supplies are sourced from water purchased from SDCWA. These supplies comprise desalinated seawater (Carlsbad Desalination Project) and imported water (SWP and Colorado River water). In accordance with SDCWA's 2015 *Urban Water Management Plan* (UWMP) (SDCWA, 2016), and incorporating the supply mix of SDCWA's wholesaler, Metropolitan Water District of Southern California, approximately 60% of its water was supplied directly or indirectly from the Colorado River in 2015. Given the cost of imported water and the region's goal to reduce reliance on imported water, any water that offsets purchases from SDCWA would be used to offset demands on imported water (as opposed to desalinated seawater).

The SDCWA's 2015 UWMP assumes that near-term water supply projects being developed by its member agencies will be implemented, including the Title XVI Project. This application calculates reductions to imported water supply demands assuming that the planned projects for other agencies in SDCWA's service area move forward with their projects as incorporated into SDCWA's 2015 UWMP.

Table 1-4 presents projected percentage of SDCWA's imported water supplies that are anticipated from the SWP and Colorado River, assuming that this Title XVI Project is not implemented. It is anticipated that the Title XVI Project would offset both SWP and Colorado River demands, in proportion to their respective contribution to SDCWA's imported supply mix. An average of 2,826 AFY in Federal water and 1,074 AFY in State water is anticipated to be offset by the Phase I Project. **Table 1-4** also shows the volume of Federal water anticipated to be offset by the Title XVI Project, in 5-year increments based on supply projections in SDCWA's 2015 UWMP and Metropolitan's 2015 Integrated Water Resources Plan (Metropolitan, 2016), which was used to develop Metropolitan's 2015 UWMP.

By offsetting demands for imported water, diversions from natural watercourses will also be reduced by the Title XVI Project. As stated above, the Title XVI Project will offset 3,900 AFY of imported water that is currently diverted from the Colorado River and the Sacramento-San Joaquin Bay-Delta (via the SWP), allowing these volumes to remain in the rivers instead.

Table 1-4: SDCWA Imported Water Supply Mix and Federal Water Offsets from the Project¹

Imported Water Source	2025	2030	2035	2040	Avg. (2025 2040) ⁴
Colorado River	77%	73%	71%	70%	72%
SWP	23%	27%	29%	30%	28%
Water Offset by Project					
Total Imported Water Offset (AFY)	3,900	3,900	3,900	3,900	3,900
Federal Water Offset (AFY) ²	2,985	2,830	2,777	2,712	2,826
State Water Offset (AFY) ³	915	1,070	1,123	1,188	1,074

¹ Some differences may occur due to rounding

² Percentage of imported water from Colorado River times the total imported water offset.

³ Percentage of imported water from SWP times the total imported water offset.

⁴ Averaged over the years that will realize full deliveries from the Title XVI Project

Source: SDCWA, 2016 and Metropolitan, 2016

Additionally, the Title XVI Project would also alleviate pressure on the regional wastewater conveyance and treatment system, and specifically on Point Loma WWTP, by treating an additional 3.5 MGD wastewater flows at the expanded Ray Stoyer WRF instead of sending it to the regional wastewater collection system and pumping to the Point Loma WWTP, which is 20-miles away from Padre Dam MWD service area.

4. What performance measures will be used to quantify actual benefits upon completion of the Project?

The Title XVI Project will provide multiple benefits. Of these, the primary benefit will be the creation of a new local water supply for Padre Dam MWD, with secondary benefits including offsetting flows to Point Loma WWTP, reducing the need for future expansion of water and wastewater infrastructure to accommodate continued and/or increased demand for imported water and increased capacity and treatment capabilities at Point Loma WWTP, reduced pollutant discharges to local surface waters, and improved water supply reliability. These secondary benefits all stem from the primary benefit of creation of new water. **Table 1-5** briefly describes how the project’s quantifiable physical benefits will be measured and what quantified benefit is expected.

Table 1-5: Project Performance Measures for Title XVI Project

Physical Benefits	Measurement Tools and Methods	Targets
Augmented Potable Water Supply	Padre Dam MWD will record annual advanced treated water data and water delivery from Lake Jennings data to determine how much potable water is produced and used from the Title XVI Project.	3.5 MGD (3,900 AFY)
Imported Water Offset	Padre Dam MWD will measure offset imported water as equivalent to the total water delivered by the Title XVI Project.	3,900 AFY
Offloading from	The volume of wastewater flows sent to Point Loma	3.0 MGD

Physical Benefits	Measurement Tools and Methods	Targets
Point Loma WWTP	WWTP that are offloaded as a result of the Title XVI Project is equivalent to the increased volume of wastewater diverted to the Ray Stoyer WRF (3.5 MGD), less brine and thickened sludge supernatant discharged to the Metro System (0.5 MGD).	
Water Quality Improvement	<p>Padre Dam MWD will provide flow monitoring data for wastewater effluent sent to the Metro System along with water supplied to customers by the expanded Ray Stoyer WRF to determine the total offloading from Point Loma WWTP. In addition, Padre Dam MWD will provide effluent water quality (TSS) data for ocean discharges from Point Loma WWTP to determine the reduction in TSS concentration discharged to the Pacific Ocean attributable to this project.</p> <p>Padre Dam MWD will provide flow monitoring data for advanced treated water sent to Lake Jennings, along with water quality data for water supplied from Lake Jennings to the water treatment plant to determine the total dissolved solids (TDS) improvements at Lake Jennings associated with the Project.</p>	<p>60 mg/L reduction in TSS¹</p> <p><50 mg/L TDS for advanced treated water delivered to Lake Jennings</p>

¹ Effluent discharge TSS concentration limitation of the Point Loma WWTP is 60 mg/L based on Order No. R9-2017-0007, NPDES No CA0107409, Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean Through the Point Loma Ocean Outfall. TSS concentration may fluctuate based on Point Loma WWTP treatment performance

1.3.1.2 Subcriterion No.1b - Contributions to Water Supply Reliability

Will the Project make water available to address a specific concern? Consider the number of acre-feet of water and/or the percentage of overall water supply to be made available by the Project. Explain the specific concern and its severity. Also explain the role of the Project in addressing that concern and the extent to which the Project will address it.

Yes, the Title XVI Project makes water available to address the specific concern of *water supply shortages* and *reduced water supply reliability* of imported water supplies from drought and the increased cost of imported water. The specific concerns, their severity, and the Title XVI Project’s role in addressing the concerns are addressed here.

The Title XVI Project addresses the concern of *limited availability of alternative supplies*. Local supplies are available to varying degrees to agencies in the San Diego region, and include surface water, groundwater, recycled water, and desalinated seawater. Rainfall in the region averages ten inches per year, and each of the eleven watersheds in San Diego County has a short enough residence time for all surface water flows to

meet the criteria for flash flooding (less than 6 hours from headwaters to coast). This short residence time, coupled with limited rainfall and virtually no snowmelt, limits surface water availability and capture opportunities. During the 2019 Water Year (October 1, 2018 – September 30, 2019), San Diego received approximately 14.6 inches of rain (CIMIS, 2020). However, rainfall can be as little as 3.34 inches, or 32% of normal, as experienced during the 2018 Water Year (October 1, 2017 – September 30, 2018) (SDCWA, 2018). Regionally, groundwater is limited by relatively small groundwater basins that are generally not suited for long-term storage and/or face water quality issues. The California Statewide Groundwater Elevation Monitoring (CASGEM) program has designated all groundwater basins in the region as very low priority. While local agencies and SDCWA are working towards improving their use and collection of surface and groundwater supplies, recycled water and desalination represent the greatest opportunities for local supply development.

The San Diego region has worked to improve water supply reliability by diversifying its water portfolio and seeking to develop sustainable local supplies. This is a key objective in the San Diego Integrated Regional Water Management (IRWM) Plan (SDRWMG, 2019), in whose program Padre Dam MWD is an active participant. A ten-year average from 2007-2016 found that imported water comprised 85% of the IRWM region's water supply (includes local supplies from SDCWA member agencies). Surface water represented 9% of supply, while groundwater and recycled water provided 3% and 5%, respectively (SDRWMG, 2014).

The Title XVI Project will produce a total of 3,900 AFY new water. Potable reuse water is a drought-proof, sustainable, local supply that is reliable so long as the infrastructure is functioning. The risks to Padre Dam MWD's water reuse infrastructure is minimal compared to risks to imported water infrastructure due to the smaller size and limited area covered by Padre Dam MWD's reuse infrastructure. In this way, the Title XVI Project helps to buffer against the impacts of potential natural disasters that may impact water infrastructure should such a disaster affect the long-distance imported water infrastructure. Reliability of the water produced by the Title XVI Project is very high compared to other water supplies. This water will offset approximately 27% of Padre Dam MWD's imported water purchases (see **Table 1-3**, above).

Imported water also requires substantial energy inputs to pump water from sources hundreds of miles to the San Diego region. Energy inputs for potable reuse water provided by the Title XVI Project in comparison, are substantially less and will help Padre Dam MWD reduce its overall energy consumption.

The Title XVI Project was developed to make an additional 3,900 AFY potable water available to meet demands within Padre Dam MWD's service area. As noted in *Section 1.2.1*, above, Padre Dam MWD's entire potable supply is purchased from SDCWA, 90% of which is imported water. Supply projections show SDCWA's supply mix as 11%

desalinated seawater and 89% imported water in 2020, with imported water projected to be 91% of SDCWA supplies by 2040, assuming all planned local supply projects in the region are implemented. As experienced in the 2012-2016 drought, SWP supplies can be restricted during times of water shortages, in addition to increased risks of supply disruption that is inherent with transporting resources over a large distance. Padre Dam MWD has seen its water costs rise 175% since 2006; the increased expenses also contribute to reliability concerns of imported water. SDCWA water rates are projected to continue to increase, as addressed in *Evaluation Criterion 3*, below. By implementing a lower cost supply solution, the Title XVI Project addresses *increasing cost of water supplies*.

Imported water reliability is threatened by increasing challenges to the use of the SWP and Colorado River. The recent drought led to restrictions on SWP allocations, which can lead to trickle-down restrictions on deliveries from Metropolitan to SDCWA, and from SDCWA to Padre Dam MWD and other member agencies. In 2015, SWP deliveries were cut to 20% of allocations (DWR, 2015), while in 2014, deliveries were limited to 5% of allocations (DWR, 2014). California experienced a few storms that allowed allocations to be as high as 60% in 2016 and 85% in 2017 (DWR, 2016 and 2017), though water restrictions remained in place. However, 2018 allocations were set at only 35% as a result of another dry year (DWR, 2018), and 2019 allocations were 70% (DWR, 2019). In years with restricted allocation, competition for imported supplies increases. As demonstrated by the range of allocations from 2014 to 2019, they can be highly variable, difficult to predict, and compound the lack of reliability. By offsetting demand for imported water with a drought-proof local supply, the Title XVI Project directly addresses *heightened competition for water supplies*.

Improving surface water quality in Lake Jennings through SWA with high quality advanced treated water, the Title XVI Project also addresses *water quality issues*.

- 5. Will water made available by this Project continue to be available during periods of drought? To what extent is the water made available by this Project more drought resistant than alternative water supply options? Explain. Has the area served by the Project been identified by the United States Drought Monitor as experiencing severe, extreme, or exceptional drought at any time in the last four years? Has the area served by the Project been designated as a drought disaster area by the State in the last four years?**

Purified water produced by the Title XVI Project through advanced treatment of recycled water is a drought-proof supply. The source for recycled water in the Title XVI Project area is wastewater and any other flows entering the Padre Dam MWD sanitary sewer system. Wastewater flows decrease by 10% to 20% during drought as people reduce water use by shortening showers, reducing toilet flushes, turning off taps, and

other conservation measures; however, wastewater is still produced and could be recycled.

The water produced by the Phase I Project is significantly more drought resistant than alternative water supply options. Alternative water supply options available to Padre Dam MWD are limited to additional imported water supplies from SDCWA. As stated above, imported water currently used by Padre Dam MWD customers is subject to potential restrictions during drought. As shown in **Table 1-3**, utilizing the water provided by the Title XVI Project will reduce the use of imported supplies by approximately 27% through the creation of drought-proof local supplies.

From mid-February 2014 to late January 2017, portions of San Diego County were in Extreme Drought, including Padre Dam MWD's service area. The U.S. Drought Monitor map showed San Diego County as being in Severe Drought, from mid-May 2018 to the end of December 2018. Some portion of San Diego County was classified as Severe, Extreme, or Exceptional Drought from April 2013 to January 2019 (U.S. Drought Monitor, 2019). The governor of California declared a drought state of emergency for the State in January 2014, which remained in effect until April 2017 (State of California, 2014). Further, the U.S. Department of Agriculture and the Small Business Administration both declared San Diego County a drought disaster area in 2016 (County of San Diego, 2016).

1.3.2 Evaluation Criterion 2: Environment and Water Quality

1. *Will the Project improve the quality of surface water or groundwater? Will the Project improve effluent quality beyond levels necessary to meet State or Federal discharge requirements?*

The Title XVI Project will improve surface water quality in Lake Jennings through delivery of advanced treated water for blending with other supplies for the reservoir, as well as improve potable water quality by reducing salinity in the potable water source; as a result, groundwater salinity will eventually be improved as lower salinity water is used in the region. The Title XVI Project will also improve surface water quality through reduction of wastewater flows to Point Loma WWTP (and ultimately discharge to the Pacific Ocean).

Salt management has been a key water quality consideration for Southern California. Reclamation, Metropolitan, and Southern California Salinity Coalition (SCSC) completed the 1999 Salinity Management Study which presented the findings and recommendations of an investigation of the impacts of total dissolved solids (TDS) – or salinity – in Southern California water supplies. The three entities engaged in a joint effort to update the findings of the 1999 Salinity Management Study in 2012. The imported water supply, particularly Colorado River water, has high TDS levels (630 mg/L on average). Metropolitan's Board of Directors adopted the 1999 Salinity

Management Policy to focus on long-term salinity control (e.g., 500-mg/L annual TDS goal) (SCSC, 2012).

Potable reuse projects produce water low in TDS, which will improve water quality in areas with impacted water supplies – a major issue for Southern California due to the high salinity of imported water sources. For example, advanced treated water from the Title XVI Project is highly purified, with anticipated TDS concentrations less than 50 mg/L after post treatment (Padre Dam MWD, 2015c). As this high-quality AWP water is added to Lake Jennings, it mixes with the existing water in the reservoir, primarily imported water known to be high in TDS (500 mg/L or higher depending on the imported water source). This mixed water is then treated for potable use. As a result, potable reuse water from the Title XVI Project would not only reduce salinity levels in the reservoir to benefit the aquatic life but also reduce salinity in the potable water. It is estimated that local potable reuse projects in the San Diego area could produce water with salinity levels 20 times lower than non-potable recycled water and 10 times lower than the drinking water currently delivered to residents (City of San Diego, 2012). Potable water with lower salinity level would result in lower salinity in the wastewater and therefore less salinity in the recycled water which is mainly used for irrigation and for Santee Lakes Preserve in the Padre Dam MWD service area. As a result, salinity of surface water and groundwater within the watershed would improve over time. In addition, there is a benefit to water customers, because water heaters, clothes washers, dishwashers, and fixtures will also last longer with lower salinity levels.

The Title XVI Project will also improve wastewater effluent discharge quality by reducing the volume of wastewater sent to the Point Loma WWTP and thereby reducing the TSS discharged through Point Loma WWTP's ocean outfall into Pacific Ocean. Currently, wastewater collected within the Padre Dam MWD service area either flows to the Ray Stoyer WRF or passes through diversion structures to the City of San Diego Metropolitan Sewer System, where it is treated at the Point Loma WWTP and ultimately discharged through the ocean outfall. Wastewater treated at the Point Loma WWTP has an average TSS of 60 mg/L. This project, by diverting 3,900 AFY water from the Point Loma WWTP, will reduce the TSS discharged through the ocean outfall by approximately 288,635 kg per year.

$$60 \frac{mg}{L} \times \frac{1,233,482 L}{AF} \times \frac{3,900 AF}{Year} \times \frac{1 kg}{1,000,000 mg} = 288,635 kg/year$$

2. Will the Project improve flow conditions in a natural stream channel? Will the Project restore or enhance habitat for non-listed species? If so, how?

The Title XVI Project will decrease demand for imported water supplies drawn from both the Sacramento-San Joaquin Bay-Delta (Bay-Delta) and the Colorado River by a total of 3,900 AFY thereby improving flow conditions in the natural stream channels (i.e. the Bay-Delta and Colorado River). Each of these supply sources support a variety

of fish and wildlife species that could benefit from the increased flows that are the direct result of reduced exports. By decreasing the importation of water from these supply sources, Padre Dam MWD could increase flows within those systems and enhance the habitat for the associated species.

The Bay-Delta encompasses 1,600 square miles and provides habitat for more than 500 species of fish and wildlife. The 2013 Bay Delta Conservation Plan identified over 30 non-listed species potentially impacted by withdrawals from that system through the SWP (Reclamation and DWR, 2013). Impacts occur due to the change of river flow by pumping, capture within pumping equipment, and increased saltwater intrusion due to pumping. A decrease in water imported through the SWP could help to alleviate these pressures on the Bay-Delta ecosystem and could help restore habitat for non-listed species.

The Lower Colorado River supports several hundred species of wildlife. Water is diverted from the Colorado River primarily at Lake Mead and transported to Southern California via the Colorado River Aqueduct. The result of this and other diversions is a decrease in flows to support the Lower Colorado River ecosystem. The 2004 Lower Colorado River Multi-Species Conservation Program covers 17 species that are not federally listed (LCRMSCP, 2004). The plan estimates that flow reductions could reach 1,574,000 AFY by 2051, resulting in lower water levels and higher concentrations of contaminants from agricultural runoff. Water, in sufficient quantity and quality, is fundamental to the health of the Colorado River and to the local survival of those 17 non-listed species. By decreasing their reliance on imported water supplies, Padre Dam MWD could increase the quality and quantity of water in the Colorado River thereby supporting the health of the River and restoring and enhancing the habitat for all those species dependent upon it.

3. Will the Project provide water or habitat for federally listed threatened or endangered species? If so, how?

As described above, the Title XVI Project would produce water supplies that would directly offset imported water. In the Bay-Delta system, this could mean increased outflow through the San Francisco Bay helping to reduce salinity and improve habitat for fish and other species. In addition to the non-listed species mentioned above, there are 21 federally listed threatened and endangered species in the Bay-Delta that would benefit from the reduction in imported water required by the Padre Dam MWD.

The Lower Colorado River is home to six federally listed endangered or threatened species. As described above, decreasing the importation of water from the Colorado River could improve both the quality and quantity of water there and lead to improved habitat for the federally listed species.

4. Will the Project reduce threats to native fish or wildlife, their habitat, or water supply reliability, caused by invasive species? If so, how?

The project will indirectly reduce threats caused by invasive species to native ecosystems and their water supplies by reducing diversions from natural watercourses. Keeping more flows in these waterways provides for a healthier ecosystem, which in turn supports native species and minimizes invasive species. Healthy ecosystems and native species are generally better able to resist invasion. Additionally, by reducing diversions, these systems are better able to maintain their natural hydrology, which reduces the opportunity for invasive species to find a niche and become established.

1.3.3 Evaluation Criterion 3: Economic Benefits

1.3.3.1 Subcriterion No.3a – Cost Effectiveness

Padre Dam MWD has determined the costs of the Title XVI Project and its benefits based on planning documents and updated cost estimates. Cost estimates were revised in 2018 to reflect the changes to the project, including the increased capacity of the Ray Stoyer WRF expansion and the shift from groundwater recharge to SWA as the environmental buffer. Project costs are presented in 2018 dollars for consistency with the previous year's FOA.

1. Reclamation will calculate the cost per acre-foot of water produced by the Project using information provided by Project sponsors. Please provide the following information for this calculation:

(a) The total estimated construction costs, by year, for the Project (include all previous and planned work).

Construction costs by year for the Title XVI Project are listed in **Table 1-6** below, and are based on cost estimates provided in the project's *Facilities Planning Report* (Padre Dam MWD, 2015a), and revised based on coordination with Reclamation related to Padre Dam MWD's FY2016 through FY2019 grant awards, as well as changes made to the Project since the *Facilities Planning Report* was developed. The total construction cost for the Title XVI Project is \$109,000,199, all of which is anticipated to be spent between 2021 and 2024. No previous construction work has been completed for the Title XVI project. The project includes construction of four project components: Ray Stoyer WRF Expansion (Phase IA-1), the AWP Facility (Phase IA-2), AWP Conveyance Pipeline and Pump Station (Phase IB), and Biosolids Digestion Facility (Phase IC), described in *Section 1.2.3 Phase I Project*. Construction cost estimates for each of these components, along with a summary of the facilities that will be constructed is as follows.

- Phase IA-1 Ray Stoyer WRF Expansion: Primary and secondary processes, tertiary process, and IPS expansion, associated appurtenances (\$29.2 million)
- Phase IA-2 AWP Facility: AWP treatment process and associated appurtenances (\$35.4 million)

- Phase IB AWP Conveyance and Pump Station: AWP conveyance pipeline and pump station (\$26.9 million)
- Phase IC Biosolids Digestion Facility: Solids handling processes at the expanded Ray Stoyer WRF, biosolids digester (\$17.4 million)

Construction will begin by the fourth quarter of 2021 and will be completed by the end of 2024. Water deliveries will begin immediately following completion of construction of Phases IA and IB, with the first full year of deliveries in 2025.

Table 1-6: Total Construction Costs by Year for Title XVI Project

Calendar Year	Construction Activity	Cost
2021	Ray Stoyer WRF Expansion, AWP Facility, AWP Pipeline and Pump Station, and Biosolids Digestion Facility	\$7,000,000
2022	Ray Stoyer WRF Expansion, AWP Facility, AWP Pipeline and Pump Station, and Biosolids Digestion Facility	\$36,500,000
2023	Ray Stoyer WRF Expansion, AWP Facility, AWP Pipeline and Pump Station, and Biosolids Digestion Facility	\$36,761,406
2024	Ray Stoyer WRF Expansion, AWP Facility, AWP Pipeline and Pump Station, and Biosolids Digestion Facility	\$ 28,738,793
	Total	\$109,000,199

(b) The total estimated or actual costs to plan and design the Project. Note: This should not include the cost to complete a feasibility study that meets the requirements of Reclamation’s Directives and Standards WTR 11-01, Title XVI Water Reclamation and Reuse Program Feasibility Study Review Process.

The total planning and design costs for the Title XVI Project is approximately \$23.3 million. **Table 1-7** below details these costs broken down by year. Previously completed design and planning work includes the Ray Stoyer WRF Planning Study done as part of the Comprehensive Facilities Master Plan, completed in 2014 at a cost of \$27,493; the 2015 MND for the Phase IA-1 and IA-2 components of the Title XVI Project was completed at a cost of \$84,676; and initial planning (including the 2017 PEIR and 2018 MND) and preliminary design for all four phases of the project, at a cost of \$6,664,630. Through December 2019, Padre Dam MWD has spent \$8,917,447 for planning and design work on the Title XVI Project. Planning and design costs are based on the actual costs spent to-date (through December 2019) along with estimates included in the project’s *Padre Dam Water Recycling Facility Phase 1 Expansion Facilities Planning Report* (Padre Dam MWD, 2015a), and as updated by Padre Dam MWD over the last few years. This Title XVI project is part of the San Diego Area Water Reclamation Program and was authorized under 43 USC 390h-10 in 1992 under the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992. Because the Title XVI Project was authorized prior to 1996, a feasibility study is not required.

Table 1-7: Total Planning and Design Costs by Year for Title XVI Project

Year	Planning or Design Activity	Cost
2014	Ray Stoyer WRF Planning Study	\$27,493
2015	Phase IA MND	\$84,676
2016	Ray Stoyer WRF Expansion pre-design, NEPA approval; AWP Facility pre-design and NEPA approval; AWP pipeline alignment study and Basis of Design; Biosolids Digestion Facility feasibility study; PEIR for Title XVI Project	\$1,922,630
2017	Ray Stoyer WRF Expansion pre-design; AWP Facility pre-design; AWP Conveyance and Pump Station environmental documentation and pre-design; and Biosolids Digestion Facility design and environmental documentation	\$2,172,000
2018	Ray Stoyer WRF Expansion pre-design; AWP Facility pre-design; AWP Conveyance and Pump Station pre-design and environmental documentation; Biosolids Digestion Facility and brine management facilities pre-design and environmental documentation; Tiered MND for Title XVI Project	\$2,052,000
2019	Ray Stoyer WRF Expansion pre-design update; AWP Facility pre-design update; AWP Conveyance and Pump Station pre-design update; Biosolids Digestion Facility and brine management facilities pre-design update; CEQA-Plus documentation for Title XVI Project; preparation of design-build solicitation documents and release of Request of Qualification and Request of Proposal for the design-build contract; and Title 22 Engineering Report preparation	\$2,658,648
2020	Ray Stoyer WRF Expansion, AWP Facility, AWP Conveyance and Pump Station, Biosolids Digestion Facility and brine management facilities final Basis of Design documentation by the design-build contractor and start of design activities.	\$4,224,200
2021	Ray Stoyer WRF Expansion design and permitting; AWP Facility design and permitting; AWP Conveyance and Pump Station design and permitting; Biosolids Digestion Facility and brine management facilities design, and permitting	\$8,124,238
2022	Ray Stoyer WRF Expansion final design and permitting; AWP Facility final design and permitting; AWP Conveyance and Pump Station final design and permitting; Biosolids Digestion Facility and brine management facilities final design, and permitting	\$2,031,060
Total		\$23,296,945

(c) The average annual operation and maintenance costs for the life of the Project. Please do not include the periodic replacement costs in the operation and maintenance costs. Periodic replacement costs should be provided separately in response to (f) below. Note: this is an annual cost – not total cost.

Annual O&M costs for the Title XVI project over the project life are approximately \$7 million per year. O&M costs include chemical costs such as chlorine and labor. Average annual O&M costs for the Title XVI Project are presented in **Table 1-8**. Note that O&M costs are slightly less in the cost per AF analysis (*Subcriterion No. 3a. 2(b)*) because of the cost savings associated with the use of energy produced by the project.

Table 1-8: Average Annual O&M Costs for the Title XVI Project

Project Component	Estimated Annual O&M Cost (excluding Replacement Costs)
Phase IA-1 Ray Stoyer WRF Expansion	
<i>IPS Expansion</i>	\$417,000
<i>WRF Primary & Secondary Processes</i>	\$573,000
<i>Additional Labor</i>	\$525,000
<i>WRF Tertiary Treatment & Disinfection</i>	\$171,000
Phase IA-2 AWP Facility	
<i>AWP Facility</i>	\$2,608,000
<i>Brine Disposal to Metro</i>	\$216,000
<i>Additional Labor</i>	\$910,000
Phase IB AWP Pipeline and Pump Station	
<i>Pipeline</i>	\$100,000
<i>Pump Station</i>	\$490,000
Phase IC Biosolids Digestion Facility	
<i>WRF Solids Handling Processes</i>	\$296,000
<i>Solids Disposal</i>	\$440,000
<i>Centrate Disposal</i>	\$394,000
Total O&M Costs	\$7,140,000

(d) The year the Project will begin to deliver reclaimed water.

The Title XVI Project will begin deliveries of potable reuse water at the end of 2024, with the first full year of deliveries anticipated in 2025.

(e) The projected life (in years) that the Project is expected to last. Note: this should be measured from the time the Project starts delivering water.

The Title XVI Project’s project life is expected to last for 60 years, from beginning of first full year of deliveries in 2025 to 2084. Full project delivery of 3,900 AFY from the

Phase I Title XVI Project is expected to extend throughout the project lifetime. As additional phases for the East County AWP Program are implemented, total potable reuse volumes produced at the Ray Stoyer WRF will increase.

(f) All estimated replacement costs by year as shown in Table 1-9.

The Title XVI Project achieves two goals: water production to offset imported water demands and wastewater treatment that offsets flows to the Metro System. Costs for these two services, both included in the Title XVI Project, are presented for each service, as well as an overall Title XVI Project cost. A summary of the timing of the replacement costs are provided in **Table 1-9**, and total replacement costs by year are presented in **Table 1-10**. The timing and costs for replacement are based on an analysis from Kennedy/Jenks that were rolled into the overall O&M costs presented in the *Padre Dam Water Recycling Facility Phase 1 Expansion Facilities Planning Study* (Padre Dam MWD, 2015a).

Table 1-9: Replacement Cost Timing

Description of Replacement Requirement	Replacement Frequency	Cost	Service
Generator Overhaul	Every 5 years	\$50,000	Wastewater Treatment and Water Production
IPS High Head Pumps	Every 10 years	\$262,000	Wastewater Treatment
IPS Low Head Pumps	Every 10 years	\$368,000	Wastewater Treatment
Chemical Feed Pumps at Ray Stoyer WRF	Every 10 years	\$40,000	Water Production
MF Membranes	Every 10 years	\$1,066,000	Water Production
RO Membranes	Every 5 years	\$414,000	Water Production
UV Bulbs	Every year	\$94,000	Water Production
UV Ballast	Every 10 years	\$82,000	Water Production
Lake Jennings Dechlorination System Replacement	Every 10 years	\$82,000	Water Production
Primary Clarifier Sludge Pumps	Every 10 years	\$105,000	Wastewater Treatment
Primary Clarifier Sump Pumps	Every 10 years	\$12,000	Wastewater Treatment
Aeration Basin Internal Recycle Pumps	Every 10 years	\$112,000	Wastewater Treatment
Secondary Clarifier Sump Pumps	Every 10 years	\$16,000	Wastewater Treatment
Secondary Clarifier RAS Pumps	Every 10 years	\$72,000	Wastewater Treatment
Equalization Basin Pumps	Every 10 years	\$66,000	Wastewater Treatment
Odor Control System Overhaul	Every 10 years	\$75,000	Wastewater Treatment
Aeration Basin Blowers	Every 15 years	\$450,000	Wastewater Treatment
Purified Water to Lake Jennings	Every 15 years	\$448,000	Water Production
Tertiary Filter Pumps	Every 15 years	\$15,000	Water Production

Table 1-10: Estimated Replacement Costs by Year¹

Year	Cost	Year	Cost	Year	Cost
2029	\$463,646	2049	\$463,646	2069	\$1,152,646
2034	\$2,821,974	2054	\$3,510,974	2074	\$2,821,974
2039	\$1,152,646	2059	\$463,646	2079	\$463,646
2044	\$2,821,974	2064	\$2,821,974	2084	\$3,510,974

¹ Annual replacement costs are incorporated into annual O&M

(g) The maximum volume of water (in acre-feet) that will be produced upon completion of the Project.

The Title XVI Project will begin producing water in late 2024, with full deliveries of 3,900 AFY starting in 2025, and continue to produce that quantity for the expected lifespan of the project, 60 years, until 2084. Title XVI Project will create 3,900 AFY of new potable water supply at the AWP Facility. Following completion of the Title XVI Project, the Ray Stoyer WRF will produce 2,016 AFY recycled water (the same amount it currently produces) and 3,900 AFY advanced treated water for potable reuse from the Phase IB component of the Title XVI Project, for a total production of 5,916 AFY of recycled water (potable and non-potable).

2. Reclamation will calculate the cost per acre-foot for the Title XVI Project using the information requested in question No. 1 and compare it to the nonreclaimed water alternative, and other water supply options identified by the applicant to evaluate the cost effectiveness of the Project. Please provide the following information for this comparison:

(a) A description of the conditions that exist in the area and projections of the future with, and without, the Project.

As previously described, Padre Dam MWD purchases the entirety of its potable supplies from SDCWA. The bulk of these supplies are imported from the Colorado River and the SWP. Padre Dam MWD’s opportunities for expanding its local supplies are limited, and as a result have developed the Title XVI Project to create new potable water through potable reuse of recycled water. Without the Title XVI Project, Padre Dam will continue to purchase water from SDCWA to meet potable demands and will be subject to substantial projected cost increases associated with continued reliance on imported water.

(b) Provide the cost per acre-foot of other water supply alternatives that could be implemented by the non-Federal Project sponsor in lieu of the Project, this must include, but is not limited to, one nonreclaimed water alternative that would satisfy the same demand as the Project. Other water supply alternatives beyond one nonreclaimed water alternative are not required, but may be provided where available to demonstrate the cost effectiveness of the Project.

The Title XVI Project has a single water supply alternative, to continue purchasing potable water from SDCWA. This non-reclaimed water alternative also results in the need to continue to send wastewater flows to the Metro System for treatment. Therefore, the Title XVI Project's wastewater treatment service is compared to the alternative of sending wastewater to the Metro System, while the Title XVI Project's water production service is compared to the cost of purchasing imported water to meet demands when considering the non-reclaimed water alternative. The cost per acre foot of water produced by the Title XVI Project is calculated on an annual basis by summing annual O&M costs, replacement costs, and debt service costs, and dividing by the annual volume of wastewater treated or water produced. Debt service will repay an anticipated 30-year term SRF loan and assumes a 2% interest rate. Note that energy offsets from Phase IC will reduce O&M costs by reducing energy costs.

Wastewater Treatment Services Costs

Following completion of the Title XVI Project, the Ray Stoyer WRF will have increased its treatment capacity by approximately 4.0 MGD, or 1,460 MG per year. Wastewater treatment services costs, to be borne by the Project, include the costs associated with treating wastewater through secondary, which is a higher level of treatment than that provided by the alternative of treating wastewaters at Point Loma WWTP included in the Metro System. Costs for the Title XVI Project's wastewater treatment services are presented in **Table 1-11**. Debt service for the wastewater treatment services includes repayment of a \$37 million 30-year SRF loan with a 2% interest rate. This is based on the capital costs for the wastewater treatment components of the project, less the presumed Title XVI grant funds that would be awarded by Reclamation and secured Proposition 84 IRWM grant funds. Total capital costs for the components providing wastewater treatment services are \$56.5 million, with \$19.5 million assumed in grant funds based on funding awarded and applied for. O&M costs for the wastewater components have been identified as the replacement costs presented in **Table 1-9**, above, and annual costs including operation, maintenance, chemicals, and labor. On average, annual wastewater treatment costs include \$1.65 million debt services and \$2.64 million O&M costs (including replacement costs). Note that for the purposes of this analysis, replacement costs incurred on an annual basis (i.e. miscellaneous instrumentation, electrical, and mechanical) are considered part of normal O&M and are not included in the replacement costs.

The alternative to treating wastewater at the Ray Stoyer WRF expanded in Phase IA is to continue to send wastewater flows to the City of San Diego Metro System for conveyance and treatment at Point Loma WWTP. Metro System's treatment costs are projected to increase significantly over the next few years due to planned system upgrades under the City of San Diego's Pure Water Program. The Pure Water Program is a potable reuse program similar to the Padre Dam MWD's East County AWP Program. In order to generate potable reuse water, the City of San Diego is planning to construct

approximately 108 MGD capacity (38 MGD in Phase 1 and 70 MGD in Phase 2) new wastewater treatment facilities and pump stations upstream of Point Loma WWTP to generate tertiary treated recycled water to feed AWP facilities. These wastewater related improvements are driving the unit wastewater treatment cost up for the participating agencies to the Metro System, which Padre Dam MWD is part of. Phase 1 of the Pure Water Program (with potable reuse production capacity of 30 mgd) is expected to be online by 2023 and is expected to increase the wastewater treatment costs to approximately \$5,500/MG until the implementation of Phase 2 of Pure Water Program (with additional potable reuse production capacity of 53 mgd) in 2035 when the Metro System treatment cost is projected to exceed \$10,000/MG (in 2035 dollars, equivalent to \$9,218 in 2018 dollars). Costs to send wastewater to the Metro System are anticipated to average \$10,288/MG wastewater during the course of the Title XVI Project's life. This cost projection is based on 5-year Metro System cost projections provided by the City of San Diego for Phase 1 and the initial financial modeling results developed by Padre Dam MWD for Phase 2 of Pure Water Program impacts. Given the source data did not extend through the full 60-year project life, a conservative approach was taken where projected Metro System disposal costs were not escalated for the years 2040-2084.

Table 1-11 provides an estimate of annual costs for the Title XVI Project's wastewater treatment services compared to the costs of continuing to send wastewater flows to the Metro System. The final column provides discounted value, using a discount rate of 2.75%, per the U.S. Federal Register's Fiscal Year 2018 (U.S. Federal Register, 2018). Over the 60-year project life, the Title XVI Project will provide an average saving of \$2,917/MG (\$951/AF) wastewater treated in net present value (2018 dollars).

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Table 1-11: Wastewater Treatment Services Costs

Year(s)	Annual Wastewater Treated (MG)	Annual O&M	Replacement Costs	Debt Service	Total Annual Cost	Title XVI Project WW Treatment Annual Cost (\$/MG)	Average Annual Cost for WW Treatment at Metro System (\$/MG) ¹	Annual Savings From Title XVI Project (\$/MG)	Average Discounted Savings (\$/MG) ²
2025-2028	\$ 1460	2,500,942	\$ 0	1,650,228	\$4,151,170	2,843	\$5,712	\$2,869	\$2,279
2029	\$ 1460	2,500,942	25,000	1,650,228	\$4,176,170	2,860	\$5,958	\$3,098	\$2,298
2030-2033	\$ 1460	2,500,942	\$ 0	1,650,228	\$4,151,170	2,843	\$6,840	\$3,996	\$2,759
2034	\$ 1460	2,500,942	1,113,000	1,650,228	\$5,264,170	3,606	\$8,109	\$4,504	\$2,918
2035-2038	\$ 1460	2,500,942	\$ 0	1,650,228	\$4,151,170	2,843	\$9,797	\$6,953	\$4,196
2039	\$ 1460	2,500,942	\$475,000	1,650,228	\$4,626,170	3,169	\$10,966	\$7,797	\$4,411
2040-2043	\$ 1460	2,500,942	\$ 0	1,650,228	\$4,151,170	2,843	\$11,305	\$8,462	\$4,475
2044	\$ 1460	2,500,942	1,113,000	1,650,228	\$5,264,170	3,606	\$11,305	\$7,700	\$3,803
2045-2048	\$ 1460	2,500,942	\$ 0	1,650,228	\$4,151,170	2,843	11,305	\$8,462	\$3,907
2049	\$ 1460	2,500,942	25,000	1,650,228	\$4,176,170	2,860	11,305	\$8,445	\$3,642
2050-2053	\$ 1460	2,500,942	\$ 0	1,650,228	\$4,151,170	2,843	11,305	\$8,462	\$3,412
2054	\$ 1460	2,500,942	1,563,000	1,650,228	\$5,714,170	3,914	\$11,305	\$7,391	\$2,783
2055-2058	\$ 1460	2,500,942	0	\$ 0	2,500,942	\$ 1,713	11,305	\$9,592	\$3,377
2059	\$ 1460	2,500,942	\$ 25,000	\$ 0	2,525,942	\$ 1,730	11,305	\$9,575	\$3,148
2060-2063	\$ 1460	2,500,942	0	\$ 0	2,500,942	\$ 1,713	11,305	\$9,592	\$2,949
2064	\$ 1460	2,500,942	1,113,000	\$ 0	3,613,942	2,475	\$11,305	\$8,830	\$2,535
2065-2068	\$ 1460	2,500,942	0	\$ 0	2,500,942	\$ 1,713	11,305	\$9,592	\$2,575
2069	\$ 1460	2,500,942	\$475,000	\$ 0	2,975,942	\$ 2,038	11,305	\$9,267	\$2,323
2070-2073	\$ 1460	2,500,942	0	\$ 0	2,500,942	\$ 1,713	11,305	\$9,592	\$2,248
2074	\$ 1460	2,500,942	1,113,000	\$ 0	3,613,942	2,475	\$11,305	\$8,830	\$1,933
2075-2078	\$ 1460	2,500,942	0	\$ 0	2,500,942	\$ 1,713	11,305	\$9,592	\$1,963
2079	\$ 1460	2,500,942	\$ 25,000	\$ 0	2,525,942	\$ 1,730	11,305	\$9,575	\$1,830
2080-2083	\$ 1460	2,500,942	0	\$ 0	2,500,942	\$ 1,713	11,305	\$9,592	\$1,714
2084	\$ 1460	2,500,942	1,563,000	0	\$4,063,942	2,784	\$11,305	\$8,522	\$1,422
				Average	\$2,330	\$2,330	\$10,198	\$7,867	\$2,917

¹ Due to annual variability, an average was used for the years indicated.

² Discount rate of 2.750% was used, per the U.S. Federal Register's Fiscal Year 2018 (U.S. Federal Register, 2018).

Water Production Services Costs

The Title XVI Project will provide water production services by treating secondary flows produced by the wastewater treatment services components to tertiary recycled water and advanced purified water. This water will have beneficial reuse as potable supplies and will offset Padre Dam MWD's demands for imported water purchased from SDCWA.

Costs for water production are those costs to treat from secondary through tertiary and advanced purification. As noted in *Section 1.2 Technical Project Description*, the Title XVI Project will produce 3,900 AFY of advanced treated water. Costs include debt services, O&M, and replacement costs. As with the debt service for the wastewater treatment components, debt service for water production is based on the total capital costs for the water production components (\$75.8 million), less assumed grant funding (\$19.5 million). The remaining capital costs will be funded through a 30-year SRF loan, with a conservative assumption of a 2% interest rate. Replacement costs include those identified in **Table 1-9**, above, while O&M costs include operations, maintenance, supplies, labor, chemicals, cost to send brine to the Metro System, and annual replacement costs.

The alternative to water production via the Title XVI Project is to continue to purchase imported water from SDCWA. Imported water costs are calculated based on values from SDCWA that include the costs to transport, treat, and deliver imported water to member agencies, and are presented in **Table 1-12**. Padre Dam MWD and Elix Water District have completed an extensive analysis of SDCWA's projected costs based on SDCWA 2015 Long Range Financing Plan as the starting basis for the forecast and the May 2017 Member Agency Managers meeting presentation. Costs include a melded supply rate, transportation, storage, and customer service fees, and escalated to reflect the increasing costs of imported water associated with supply limitations due to increased conservation regulations, rebound of sales from drought levels, and infrastructure improvements due to the California WaterFix project and other capital improvement projects, along with inflation. The projection also includes rate impacts from SDCWA member agencies that will opt-out as they are developing local water supply projects in the future (such as City of San Diego with their Pure Water Program) from the system. This analysis extended costs to 2045. Given the source data did not extend through the full 60-year project life, a conservative approach was taken where projected SDCWA costs were not escalated for the years 2046-2084.

Table 1-13 provides an estimate of annual costs for the Title XVI Project's water production services compared to the costs of purchasing an equal volume of imported water. The final column provides discounted value, using a discount rate of 2.750%, per the U.S. Federal Register's Fiscal Year 2018 (U.S. Federal Register, 2018). Over the 60-

year project life, the Title XVI Project will provide an average saving of \$1,131/AF water produced in net present value (\$3,204/AF without discounting).

Table 1-12: Cost per Acre-Foot of Imported Water

Year	Cost per AF	Year	Cost per AF	Year	Cost per AF	Year	Cost per AF
2025	\$2,354	2040	\$4,305	2055	\$5,268	2070	\$5,268
2026	\$2,484	2041	\$4,483	2056	\$5,268	2071	\$5,268
2027	\$2,590	2042	\$4,669	2057	\$5,268	2072	\$5,268
2028	\$2,684	2043	\$4,859	2058	\$5,268	2073	\$5,268
2029	\$2,784	2044	\$5,059	2059	\$5,268	2074	\$5,268
2030	\$2,889	2045	\$5,268	2060	\$5,268	2075	\$5,268
2031	\$2,999	2046	\$5,268	2061	\$5,268	2076	\$5,268
2032	\$3,114	2047	\$5,268	2062	\$5,268	2077	\$5,268
2033	\$3,236	2048	\$5,268	2063	\$5,268	2078	\$5,268
2034	\$3,363	2049	\$5,268	2064	\$5,268	2079	\$5,268
2035	\$3,496	2050	\$5,268	2065	\$5,268	2080	\$5,268
2036	\$3,634	2051	\$5,268	2066	\$5,268	2081	\$5,268
2037	\$3,779	2052	\$5,268	2067	\$5,268	2082	\$5,268
2038	\$3,947	2053	\$5,268	2068	\$5,268	2083	\$5,268
2039	\$4,122	2054	\$5,268	2069	\$5,268	2084	\$5,268

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Table 1-13: Water Production Services Cost for the Title XVI Project

Year(s)	Annual Water Production (AF)	Annual O&M	Replacement Costs	Debt Service	Total Annual Cost	Annual Cost (\$/AF)	Annual Cost Imported Water (\$/AF) ¹	Annual Savings From Title XVI Project (\$/AF)	Discounted Savings (\$/AF) ²
2025-2028	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	2,528	\$838	\$663
2029	3900	\$4,075,672	\$438,646	\$2,515,482	7,029,800	\$1,803	2,784	\$981	\$728
2030-2033	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	3,060	\$1,369	\$947
2034	3900	\$4,075,672	1,708,974	\$2,515,482	8,300,128	\$ 2,128	3,363	\$1,235	\$800
2035-2038	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	3,714	\$2,024	\$1,223
2039	3900	\$4,075,672	\$677,646	\$2,515,482	7,268,800	1,864	4,122	\$2,258	\$1,277
2040-2043	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	4,579	\$2,889	\$1,524
2044	3900	\$4,075,672	1,708,974	\$2,515,482	8,300,128	2,128	5,059	\$2,930	\$1,447
2045-2048	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$3,578	\$1,652
2049	3900	\$4,075,672	\$438,646	\$2,515,482	7,029,800	1,803	5,268	\$3,466	\$1,495
2050-2053	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$3,578	\$1,443
2054	3900	\$4,075,672	1,947,974	\$2,515,482	8,539,128	2,190	5,268	\$3,724	\$1,159
2055-2058	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$4,223	\$1,487
2059	3900	\$4,075,672	\$438,646	\$ 0	\$4,514,318	1,158	5,268	\$4,111	\$1,352
2060-2063	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$4,223	\$1,298
2064	3900	\$4,075,672	1,708,974	\$ 0	\$5,784,646	\$1,483	5,268	\$3,785	\$1,087
2065-2068	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$4,223	\$1,133
2069	3900	\$4,075,672	\$677,646	\$ 0	\$4,753,318	1,219	5,268	\$4,049	\$1,015
2070-2073	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$4,223	\$990
2074	3900	\$4,075,672	1,708,974	\$ 0	\$5,784,646	\$1,483	5,268	\$3,785	\$828
2075-2078	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$4,223	\$864
2079	3900	\$4,075,672	\$438,646	\$ 0	\$4,514,318	1,158	5,268	\$4,111	\$786
2080-2083	3900	\$4,075,672	\$ 0	2,515,482	\$6,591,154	\$1,690	5,268	\$4,223	\$755
2084	3900	\$4,075,672	1,947,974	\$ 0	\$6,023,646	\$1,545	5,268	\$3,724	\$621
				Average Costs (\$/AF)	\$4,605	\$1,427	\$4,605	\$3,204	\$1,131

¹ An average was used for the date range shown due to annual variability in the costs.

² Discount rate of 2.750% was used, per the U.S. Federal Register's Fiscal Year 2018 (U.S. Federal Register, 2018).

Overall Title XVI Project Costs

The average annual O&M (without replacement) costs for the Title XVI Project is estimated to be \$6.58 million (with a portion of the Project's energy demands offset by Phase IC). Applying this value over the 60-year project life, total O&M costs are anticipated to be \$395 million. Replacement costs are anticipated to average approximately \$375,000 per year over the course of the project life, or approximately \$22.5 million total. Debt service will repay an anticipated 30-year term SRF loan, and assumes a 2% interest rate. Annual debt service for the first 30 years of the Title XVI Project life is anticipated to equal \$4,165,710. Once the SRF loan is repaid, debt service will no longer apply to the Title XVI project. Throughout the Title XVI Project life, total volume of water produced will be 3,900 AFY. The average cost per AF of the Title XVI Project over its entire life is \$2,316/AF (not discounted). **Table 1-14** summarizes the annual cost per acre-foot, while **Table 1-15** breaks down annual costs by year to provide an average annual cost per AF. Both tables present a comparison of the Title XVI Project's total costs with those of the non-reclaimed water alternative to send wastewater to the Metro System and continued purchases of imported water. The Title XVI Project provides cost savings compared to the alternatives both immediately and over the long term, with an average of \$2,048/AF savings over the life of the Project (present value, at a 2.750% discount rate) and a total cost savings of approximately \$480 million in present value.

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Table 1-14: Annual Cost per AF of Water from Title XVI Project

Year(s)	Annual Water Produced (AF)	Annual Wastewater Treatment Services Costs	Annual Water Production Costs	Total Annual Cost	Annual Cost (\$/AF)	Alternative Costs (Wastewater Treatment at Metro System + Imported Water Purchases; (\$/AF)	Annual Savings from Title XVI Project (\$/AF)	Discounted Annual Savings from Title XVI Project (\$/AF)
2025-2028	3900	\$4,151,170	\$6,591,154	\$10,742,324	\$2,754	\$4,389	\$1,635	\$1,296
2029	3900	\$4,176,170	\$7,029,800	\$11,205,970	\$2,873	\$4,725	\$1,852	\$1,374
2030-2033	3900	\$4,151,170	\$6,591,154	\$10,742,324	\$2,754	\$5,288	\$2,534	\$1,750
2034	3900	\$5,264,170	\$8,300,128	\$13,564,298	\$3,478	\$6,005	\$2,527	\$1,637
2035-2038	3900	\$4,151,170	\$6,591,154	\$10,742,324	\$2,754	\$6,906	\$4,152	\$2,506
2039	3900	\$4,626,170	\$7,268,800	\$11,894,970	\$3,050	\$7,695	\$4,645	\$2,628
2040-2043	3900	\$4,151,170	\$6,591,154	\$10,742,324	\$2,754	\$8,263	\$5,508	\$2,910
2044	3900	\$5,264,170	\$8,300,128	\$13,564,298	\$3,478	\$8,742	\$5,264	\$2,600
2045-2048	3900	\$4,151,170	\$6,591,154	\$10,742,324	\$2,754	\$8,952	\$6,197	\$2,862
2049	3900	\$4,176,170	\$7,029,800	\$11,205,970	\$2,873	\$8,952	\$6,079	\$2,622
2050-2053	3900	\$4,151,170	\$6,591,154	\$10,742,324	\$2,754	\$8,952	\$6,197	\$2,499
2054	3900	\$5,714,170	\$8,539,128	\$14,253,298	\$3,655	\$8,952	\$5,297	\$1,995
2055-2058	3900	\$2,500,942	\$4,075,672	\$6,576,614	\$1,686	\$8,952	\$7,266	\$2,558
2059	3900	\$2,525,942	\$4,514,318	\$7,040,260	\$1,805	\$8,952	\$7,147	\$2,350
2060-2063	3900	\$2,500,942	\$4,075,672	\$6,576,614	\$1,686	\$8,952	\$7,266	\$2,233
2064	3900	\$3,613,942	\$5,784,646	\$9,398,588	\$2,410	\$8,952	\$6,542	\$1,878
2065-2068	3900	\$2,500,942	\$4,075,672	\$6,576,614	\$1,686	\$8,952	\$7,266	\$1,950
2069	3900	\$2,975,942	\$4,753,318	\$7,729,260	\$1,982	\$8,952	\$6,970	\$1,747
2070-2073	3900	\$2,500,942	\$4,075,672	\$6,576,614	\$1,686	\$8,952	\$7,266	\$1,703
2074	3900	\$3,613,942	\$5,784,646	\$9,398,588	\$2,410	\$8,952	\$6,542	\$1,432
2075-2078	3900	\$2,500,942	\$4,075,672	\$6,576,614	\$1,686	\$8,952	\$7,266	\$1,487
2079	3900	\$2,525,942	\$4,514,318	\$7,040,260	\$1,805	\$8,952	\$7,147	\$1,366
2080-2083	3900	\$2,500,942	\$4,075,672	\$6,576,614	\$1,686	\$8,952	\$7,266	\$1,298
2084	3900	\$4,063,942	\$6,023,646	\$10,087,588	\$2,587	\$8,952	\$6,365	\$1,062
Average Costs and Savings (\$/AF)						\$8,077	\$5,761	\$2,048

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Table 1-15: Annual Cost of Title XVI Project

Year(s)	Annual Water Produced (AF)	Annual O&M	Replacement Costs	Debt Service	Annual Cost (\$/AF)	Alternative Costs (Wastewater Treatment + Imported Water Purchases; (\$/AF)	Annual Savings from Project (\$/AF)	Discounted Annual Savings from Project (\$/AF)
2025	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$4,227	\$ 1,472	1,218
2026	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$4,307	\$ 1,553	1,250
2027	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$4,467	\$ 1,713	1,342
2028	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$4,556	\$ 1,802	1,374
2029	3900	\$6,576,614	\$463,646	\$4,165,710	2,873	\$4,725	\$ 1,852	1,374
2030	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$4,856	\$ 2,101	1,517
2031	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$5,107	\$ 2,353	1,654
2032	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$5,422	\$ 2,668	1,825
2033	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$5,768	\$ 3,013	2,006
2034	3900	\$6,576,614	\$2,821,974	\$4,165,710	3,478	\$6,005	\$ 3,257	1,637
2035	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$6,170	\$ 3,415	\$2,154
2036	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$6,899	\$4,144	\$2,543
2037	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$7,143	\$ 4,389	2,621
2038	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$7,413	\$ 4,659	2,708
2039	3900	\$6,576,614	\$1,152,646	\$4,057,10	3,050	7,695	\$4,645	\$2,628
2040	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$7,988	\$5,234	\$2,882
2041	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,167	\$ 5,412	2,900
2042	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,353	\$ 5,598	2,919
2043	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,543	\$ 5,788	2,938
2044	3900	\$6,576,614	\$2,821,974	\$4,165,710	3,478	8,742	\$5,264	\$2,600
2045	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,979
2046	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,899
2047	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,822
2048	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,746
2049	3900	\$6,576,614	\$463,646	\$4,165,710	2,873	8,952	\$ 6,079	2,622
2050	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,601
2051	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,532
2052	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,464
2053	3900	\$6,576,614	\$0	\$4,165,710	2,754	\$8,952	\$ 6,197	2,398
2054	3900	\$6,576,614	\$3,510,974	\$4,165,710	3,655	\$8,952	\$ 5,297	1,995

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 Title XVI Grant Application 2020

Year(s)	Annual Water Produced (AF)	Annual O&M	Replacement Costs	Debt Service	Annual Cost (\$/AF)	Alternative Costs (Wastewater Treatment + Imported Water Purchases; (\$/AF)	Annual Savings from Project (\$/AF)	Discounted Annual Savings from Project (\$/AF)
2055	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,663
2056	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,592
2057	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,522
2058	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,455
2059	3900	\$6,576,614	\$463,646	\$0	1,805	\$8,952	\$7,147	2,350
2060	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,325
2061	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,263
2062	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,202
2063	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,143
2064	3900	\$6,576,614	\$2,821,974	\$0	2,410	8,952	\$6,542	1,878
2065	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$2,030
2066	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,976
2067	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,923
2068	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,871
2069	3900	\$6,576,614	\$1,152,646	\$0	1,982	8,952	\$6,970	1,747
2070	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,773
2071	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,725
2072	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,679
2073	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,634
2074	3900	\$6,576,614	\$2,821,974	\$0	2,410	8,952	\$6,542	1,432
2075	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,548
2076	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,506
2077	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,466
2078	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,427
2079	3900	\$6,576,614	\$463,646	\$0	1,805	\$8,952	\$7,147	1,366
2080	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,351
2081	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,315
2082	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,280
2083	3900	\$6,576,614	\$0	\$0	1,686	\$8,952	7,266	\$1,246
2084	3900	\$6,576,614	\$3,510,974	\$0	2,587	8,952	\$6,365	\$1,062
			Average Costs and Savings (\$/AF)		\$2,316	\$8,077	\$5,761	\$2,048

- (c) If available, provide the cost per acre foot of one water supply project with similar characteristics to the Project. This information does not have to be provided if it not available. It is intended to provide another possible comparison to demonstrate the cost effectiveness of the Project.**

As stated previously the only alternative to the project is the no-project alternative to continue purchasing water from SDCWA. The City of San Diego's Pure Water project is another potable reuse effort in the region and had a projected cost of between \$1,700 to \$1,900 in 2016 based on the predesign work (City of San Diego, 2016). This corresponds to \$1,774 to \$1,983 per AF (in 2018 dollars). This estimated unit cost value is expected to increase due to recent design changes and 25% increase in construction cost estimate the City released in October 2018. Overall, the City's Pure Water project is able to take advantage of cost efficiencies related to scale, as it is designed to provide a total volume of 30 MGD when Phase 1 of that project is complete.

- (d) Discussion of the degree to which the Project is cost-effective. Including, where applicable, a discussion of why the Project may be cost effective even if the overall Project cost appears to be high.**

As demonstrated in the evaluation of the project costs against the non-reclaimed water alternative to continue purchasing water from SDCWA, the Title XVI Project is cost effective, with a projected savings of over \$2,048 per AF in net present value. The average cost per AF of the Title XVI Project over the 60-year Project life is \$1,040/AF, compared to the average cost per AF of the no-project alternative of \$3,088/AF (including cost of sending wastewater to the Metro System and the cost of water purchased from SDCWA), in 2018 dollars.

1.3.3.2 Subcriterion No.3b – Economic Analysis and Project Benefits

- 1. Summarize the economic analysis performed for the Project including information on the Project's estimated benefits and costs. Describe the methodologies used for the analysis that has been conducted. Points will be awarded based on a comparison of the benefits and costs of the Project. The information provided should include:**

- (a) Quantified and monetized Project costs, including capital costs and operations and maintenance costs.**

As previously described, the Project's costs were developed based on the 2015 Facilities Planning Report and revised to reflect changes made to the project since then. Total project costs are approximately \$132 million in capital costs, \$395 million in O&M, \$22 million in replacement costs over the 60-year project life, and \$42 million in debt interest for a total cost of \$591 million (not discounted) from planning through the end of the 60-year project life. Debt interest assumes an approximately \$83 million loan, with 2% interest. This loan covers the capital costs of the project that was not paid for by grants. Grant funding, either already secured or anticipated to be secured, is used

to reduce the project costs. The benefit-cost ratio uses a cost that already takes into consideration receipt of grant dollars to reduce costs. Explanations for the basis of these costs were provided above. When discounting to net present value, the cost of the project over the 60-year project life is approximately \$250 million.

(b) Quantified and monetized Project benefits. This includes benefits that can be quantified and expressed as a monetized benefit per acre-foot. This may include, but is not limited to, benefits related to water supply quantity and water supply reliability, recreational benefits, ecosystem benefits, water quality, energy efficiency, and environmental compliance and permitting. Benefits may also include the avoided cost of no action, and the willingness of users or customers to pay for a benefit or avoid a negative outcome. If quantified and/or monetized information for these benefits is not available, they may be addressed in response to question 2 below.

Avoided Wastewater Treatment

The Title XVI project would provide wastewater treatment locally instead of sending wastewater to the regional Metro System for 20-mile conveyance to Point Loma WWTP for treatment and final disposal to the ocean, which would have the benefit of avoiding costs associated with the projected treatment cost rate increases with the Metro System due to City of San Diego's Pure Water Program.

Based on the annual costs of treating wastewater at the Metro System and the annual expected treatment of the Title XVI project, the average annual benefit (not discounted) of avoided wastewater treatment would be approximately \$13 million. Over the 60-year lifetime of the project, the present value of avoided wastewater treatment costs would be around \$307 million, using a discount rate of 2.75%.¹

Avoided Imported Water

The Title XVI project would produce a local source of treated water, which would have the benefit of avoiding costs associated with purchasing water from SDCWA.

Costs for purchasing water from SDCWA are calculated based on values from SDCWA that include the costs to transport, treat, and deliver water to member agencies. As described in Subcriterion No. 3a, Question 2(b), these costs were projected to 2045; the cost of imported water post-2045 was then assumed to be constant. This results in the calculations for comparing the cost of water produced by the Title XVI Project and the cost of imported water being conservative.

Based on the Title XVI project offsetting 3,900 AFY of SDCWA water supplies, and the cost per acre foot of water from SDCWA (e.g., \$2,354/AF in 2025, the first full year of Project deliveries), the average annual value (not discounted) of avoided imported

¹ Present value calculated using the US Bureau of Reclamation Discount Rate for Water Resources Planning of 2.75% published in the Federal Register in January 2018.

water would be approximately \$18 million. Over the 60-year lifetime of the project, the present value of avoided imported water costs would be approximately \$417 million, using a discount rate of 2.75%.

Reduced Greenhouse Gas Emissions and Associated Social Benefit

Reduced reliance on imported water will avoid the extensive energy requirements associated with transporting water from Northern California and the Colorado River to San Diego County. This will indirectly result in avoided air quality impacts associated with energy production and use. There is a social cost to these air quality impacts that can be estimated using CO₂ equivalents.

To estimate the avoided air quality impacts from energy production and use from the Title XVI project, the amount of energy associated with operating the Title XVI project (8,341,680 kWh/year) was subtracted from the amount of energy associated with the imported water supplies (9,937,429 kWh/year) to arrive at the net energy savings from the project (1,595,749 kWh/year). According to estimates provided by the California Air Pollution Control Officers Association, the carbon intensity of energy provided by San Diego Gas & Electric (SDG&E) is 720.49 lbs of CO₂ per MWh (i.e., 0.000360 tons of CO₂ per kWh).

The U.S. Government produced a technical support documentation on the social cost of carbon in 2016 (Interagency Working Group on Social Cost of Greenhouse Gases, United States Government 2016). The social cost of carbon is the monetized damages associated with an incremental increase in emissions in a given year, and includes (but is not limited to) changes in net agricultural productivity, human health, and the value of ecosystem services that may be affected by air quality impacts. The social cost of carbon increases over time because future emissions are expected to produce larger incremental damages as physical and economic systems become more stressed in response to the build-up of emissions.

Based on the forecasted social cost of carbon, the economic benefit of the Title XVI project's 1,595,749 kWh/year energy savings would equate to approximately \$16,000 annually discounted to 2018 dollars. Over the 60-year lifetime of the project, the social benefit of reduced air quality impacts from energy production and use would be approximately \$0.97 million, using a discount rate of 2.75%.

Increased Supply Reliability

Imported water supplies, in addition to being energy intensive and expensive, are also less reliable than local supplies. In 2014, allocations from the SWP dropped to just 5% due to ongoing drought conditions and increased concern for the Bay-Delta ecosystem. Although deliveries have rebounded somewhat, to 20% in 2015, 60% in 2016, and 85% in 2017, they declined again in 2018 (35%) and it has become clear that deliveries through

the SWP system are variable and may not be available in the future during times of drought when they are most needed.

A reliable supply is important to maintaining a vibrant local economy. An unreliable local water supply increases risks for businesses and could create economic instability for the community having deeper economic impacts than a rate hike.

Substituting local water supplies for imported water will increase the reliability of water supplies and may help provide a buffer from rate increases driven by the increased cost of imported water during times of scarcity.

Previous studies have estimated consumers' willingness to pay to avoid water service interruptions (i.e., water service reliability). Other previous studies have employed statistical models to estimate the welfare loss of a water shortage, or mathematical models to approximate customers' cost-minimizing behaviors. The dollar amount depends on the level of rationing, as well as the duration and frequency of the shortage event. According to a literature search, residential household willingness to pay ranges from around \$85 to around \$575 per year (Barakat and Chamberlin, Inc. 1994; Griffin and Mjelde, 2000; Lund, 1995; Buck et al., 2016).

Considering these ranges in the literature, which generally focused on California or the western United States, it was assumed that Padre Dam MWD residential customers would be willing to pay approximately \$270 per household per year (in 2018 dollars), for a reliable water supply (i.e., to avoid a shortage). This value was approximated by taking the median per household annual willingness to pay value in each of the studies reviewed, then averaging these median numbers.

To adjust for the partial improvement in reliability from the Title XVI project, it is assumed that household willingness to pay for improved reliability is directly proportional to the amount of recycled water that will offset imported water, as a percentage of the total potable water supply. This represents the percentage of total supply that has been improved by offsetting imported water demand with local sources.

The project will offset 3,900 AFY of imported water. Padre Dam MWD's 2015 UWMP reports that total imported water demand in 2025 will be approximately 14,033 AF. Therefore, in 2025, about 28% of total imported water demand would have been met by recycled water if made available by the project. Thus, a conservative estimate of the value of improved reliability associated with this water, is about \$75 per household per year (\$270 multiplied by 28%). Applying this per household dollar value to the 19,684 residential connections within the service areas results in \$1.4M of benefits per year (not discounted). This equates to a present value of \$37M over the 60-year life of the project, using a discount rate of 2.75%.

Improved Salinity in Potable Water

The Title XVI Project will improve water quality in Lake Jennings through delivery of advanced treated water for blending with other supplies for the reservoir, as well as improve potable water quality by reducing salinity in the potable water source.

As described in Evaluation Criterion 2, question 1, potable reuse projects produce water low in TDS, which will improve water quality in areas with impacted water supplies. As high-quality AWP water is added to Lake Jennings, it mixes with the existing, high-TDS, water in the reservoir, prior to treatment for potable use. Local potable reuse projects could produce water with salinity levels 20 times lower than non-potable recycled water and 10 times lower than the drinking water currently delivered to residents (City of San Diego, 2012).

The 2012 Recycled Water Study completed by the City of San Diego estimated a salt credit to account for the benefits of salinity reduction in the watershed through potable reuse. The salt credit basis was from the 1999 Salinity Management Study (Metropolitan and Reclamation, 1999). The quantitative credit of \$100/AF was estimated to account for the financial benefits of extending the life of the municipal water and wastewater treatment systems from having lower salinity levels in the water and wastewater flows. Lower TDS levels in the reservoirs would result in reductions in salinity levels in the downstream facilities including the drinking water treatment plant, wastewater conveyance and treatment processes, and recycled water facilities. Applying the \$100/AF of savings to the annual potable water production of 3,900 AF equates to \$390,000 of benefits per year (not discounted). This equates to a present value of \$10M over the 60-year life of the project, using a discount rate of 2.75%.

Table 1-16 provides a summary of the monetized benefits of the Title XVI Project.

Table 1-16: Summary of Economic Benefits

Benefit	Present Value
Avoided Wastewater Treatment	\$307 M
Avoided Imported Water	\$417 M
Reduced Energy Demands and Associated Social Benefit	\$0.97 M
Reliable Water Supply	\$37 M
Improved Salinity in Water Quality	\$10 M
Total Monetized Benefit	\$772 M

(c) A comparison of the Project’s quantified and monetized benefits and costs.

As described above, the total monetized benefit of the Title XVI Project is \$772 million in net present value. The total cost of the Project is \$250 million, in net present value, as noted in Section 1.3.3.2. The benefit cost ratio of the Title XVI Project is 3.08, with

substantial benefits, even when using a relatively conservative estimate for monetizable benefits.

- 2. Some project benefits may be difficult to quantify and/or monetize. Describe any economic benefits of the Project that are difficult to quantify and/or monetize. Provide a qualitative discussion of the economic impact of these benefits. Points will be awarded based on the potential economic impact of the Project-related benefits. Some examples of benefits may include, but are not limited to, acres of land or stream miles that may be benefitted or not harmed, benefits to habitat or species, flood risk mitigation, local impacts on residents and/or businesses, job creation, and regional impacts. This may also include benefits listed in question 1, if they have not been monetized.***

Regional Wastewater Treatment Cost Savings

In 2017, the U.S. Environmental Protection Agency (USEPA) granted a modification to the City of San Diego's NPDES permit allowing the City to continue to operate the Point Loma WWTP as a chemically enhanced primary treatment facility with the implementation of Pure Water Program (RWQCB, 2017) to offload the Point Loma WWTP and to produce product water for recycled water projects upstream of the WWTP. The City of San Diego is committed to offloading 100 MGD from the Point Loma WWTP for recycled water projects (City of San Diego, 2012). An additional benefit of the Title XVI Project is that sending 4 MGD less wastewater flow to the Point Loma WWTP would result in less offload from the City of San Diego to achieve the same 100 MGD offload goal because Padre Dam MWD is a contributor to the regional Metro System flow. The City of San Diego is already planning to implement Phase 1 of the Pure Water Program by 2023, however with implementation of the Title XVI Project, Phase 2 of Pure Water Program could be 4 MGD smaller. Therefore, the Title XVI Project could help reduce the need for expensive regional conveyance and treatment upgrades, which could help reduce the unit cost of treatment for the regional Metro System for all 13 participating agencies.

Improved Surface Water and Groundwater Quality

As stated earlier, the Title XVI Project will improve surface water quality (TDS and nutrients) in Lake Jennings through delivery of advanced treated water for blending with other supplies for the reservoir. Improved water quality in the lake would not only benefit the potable water salinity but also benefit the aquatic life and fish within the lake. Further, potable water with lower salinity level would result in lower salinity in the wastewater and therefore less salinity in the recycled water which is mainly used for irrigation and for Santee Lakes Preserve in the Padre Dam MWD service area. Decreasing TDS in the recycled water would support the aquatic life and fish in Santee Lakes.

Supporting aquatic life and fish in the Santee Lakes will help to maintain or bolster economic benefits of recreation activities at the lakes, including fishing.

Sustainable Solution to Meet Organic Waste Diversion Requirements

A recent legislation in the State of California mandates waste haulers divert organic waste from landfills for recycling to reduce greenhouse gases (Assembly Bill No. 1826). According to the mandate, waste haulers are required to report their diversion plan to CalRecycle and transition into the diversion program in 2021 timeframe. Padre Dam MWD is proposing to accept diverted organic waste within East County for co-digestion with the municipal sludge as part of the Title XVI Project. Implementing an anaerobic digestion process at part of the Title XVI Project provides a unique opportunity in the East County to find an economical and sustainable solution to the organic waste diversion requirement and meet the greenhouse gas emission reduction goals. Waste haulers would pass projected cost increases on their operations to meet the additional requirements by AB1826; therefore, having a more economical solution for them would mean less cost impact on the customers in East County.

Future Funding

Project success could better position Padre Dam MWD to pursue future funding opportunities. The groundwork laid by this project could be built upon on a regional level to increase local water supply, decrease dependence on imported supplies and increase overall reliability. Because of these far reaching potential benefits and the work done as part of this Title XVI Project, Padre Dam MWD will be positioned to take advantage of future funding opportunities as they become available.

1.3.4 Evaluation Criterion 4: Department of Interior and Bureau of Reclamation Priorities

This application only includes responses to those Department of Interior (DOI) Priorities and Bureau of Reclamation Priorities met by the Title XVI Project.

DOI Priorities

- 1. *Creating a conservation stewardship legacy second only to Teddy Roosevelt***
 - a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment**

The Title XVI Project uses a relatively new scientific approach to water supply development: potable reuse with SWA. This project was designed to meet stringent Federal and State regulatory requirements for potable reuse and relies on sound scientific understanding of the hydrodynamic of Lake Jennings related to the required residence time and dilution of the advanced treated water within the reservoir, as well as a thorough series of water quality tests and analyses (at the existing AWP demonstration facility previously discussed) to confirm the AWP treatment train will reliably meet the appropriate standards. Potable reuse with SWA is the forefront of

sustainable potable water supply development and represents an opportunity to develop supplies that allow an agency to adapt to shifting needs that may result from changes in the environment.

d. Review DOI’s water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity

The Title XVI Project will expand Padre Dam MWD’s supply capacity by creating new potable supplies. The Title XVI project will reduce demand for imported water from the Colorado River (managed by the DOI) by approximately 2,826 AFY. Creating new local supplies supports regional, state, and federal goals for sustainable water supply, and reduces Padre Dam MWD’s contribution to stressors on the DOI’s large-scale public infrastructure used to convey and store imported water. It helps to reduce the need to upgrade the Point Loma WWTP, addressing conflicts associated with the WWTP’s waiver and potential need for future upgrades.

2. Utilizing our natural resources

a. Ensure American energy is available to meet our security and economic needs

The Title XVI Project will result in a net offset of energy demands. A portion of the Title XVI Project’s energy demands will be met using energy produced by the biodigestion facility (6,566,000 kwh/yr). The remaining energy needs of the Title XVI Project (8,342,000 kwh/yr) are substantially lower than the energy required to convey 3,900 AFY imported water to Padre Dam MWD (9,937,429 kwh/year). The net energy savings of the project are 1,595,749 kwh/year. Energy conservation by Padre Dam MWD allows the energy they do not need to use for water supply to be available for other needs, including security and economic needs elsewhere in the state or region.

3. Restoring trust with local communities

a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands

The Title XVI Project implements Phase I of the East County AWP Program, which is a coordinated effort between Padre Dam MWD, Elix Water District, City of El Cajon, and the County of San Diego to implement water reuse in eastern San Diego County. This coordination contributes to improved relationships and increased dialogue between the different agencies. Padre Dam MWD has also been in collaboration with the local waste haulers including Republic Services and Waste Management to accept diverted organic waste for co-digestion with the municipal sludge as part of the Title XVI Project. In addition, Padre Dam MWD has undertaken extensive outreach to the public associated with the Title XVI Project. Tours are regularly provided at the Demonstration Facility for the AWP system, with 50 tours given in Fiscal Year 2019, 51 tours given in Fiscal Year 2018, and 49 tours given in Fiscal Year 2017, reaching a total of 4,366 people in three years. Activities such as these tours help to educate

stakeholders on the value the Title XVI Project has to the region and how potable reuse is an important tool for managing limited water resources.

5. Modernizing our infrastructure

a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure

The Title XVI Project uses state-of-the-art advanced water treatment technologies and sophisticated instrumentation for production of purified water and for monitoring water quality compliance with the State and Federal regulations. In addition, Padre Dam MWD has pilot-tested and is planning to implement an innovative technology for brine minimization to achieve 95% overall production efficiency with reverse osmosis (RO) (Reclamation, 2017). This high RO recovery with municipal recycled water is a breakthrough in the industry and the Title XVI Project will be one of the first agencies to use this technology in full scale.

b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure Projects serving American needs

Funding provided by Reclamation to implement the Title XVI Project alleviates impediments associate with funding the project that may otherwise prove to be a substantial obstacle to garnering public support, approval by governing bodies, and implementing the project in a timely manner. The Project will serve an identified need for the region of developing new, local, drought-proof potable water supplies, in a region with limited opportunities for local supply development.

c. Prioritize DOI infrastructure needs to highlight:

- i. Construction of infrastructure**
- ii. Cyclical maintenance**
- iii. Deferred maintenance**

The Title XVI Project constructs new water supply infrastructure (addressing c.(i)) consisting of new treatment processes, pump station and pipelines for Padre Dam MWD, that will serve 27% of its potable demands. The Project also addresses potential issues associated with deferred maintenance (item c.(iii)) by updating and modernizing the WRF and updating the influent pump station.

Reclamation Priorities

1. Increase water supplies, storage, and reliability under WIIN and other Authorities

The Title XVI Project will expand Padre Dam MWD’s supply capacity and reliability by creating new, reliable, sustainable potable supplies to meet demands within its service area. The Title XVI Project will create 3,900 AFY of potable water, allowing an offset of an equal amount of imported water from the SWP and Colorado River. Dependency on imported water results in reliability concerns associated with costs and availability.

As experienced in the 2012-2016 drought, SWP supplies can be restricted during times of water shortages, in addition to increased risks of supply disruption that is inherent with transporting resources over a large distance. Padre Dam MWD has seen its water costs rise 175% since 2006, and projects continued increases in imported water costs. By creating a new drought-proof local supply and offsetting demand for imported water, the Title XVI Project directly addresses heightened competition for water supplies and improves water supply reliability in the service area.

3. *Leverage science and technology to improve water supply reliability to communities*

The Title XVI Project will create 3,900 AFY of local potable water, directly improving supply reliability to communities within Padre Dam MWD's service area. The Title XVI Project will use state-of-the-art advanced water treatment technology that consists of membrane separation technologies (microfiltration and reverse osmosis), ultraviolet disinfection with advanced oxidation technology, and sophisticated instrumentation for process control and optimization and for production of high-quality recycled water suitable for potable reuse and that is compliant with the SWA regulations. In addition, Padre Dam MWD has pilot-tested and is planning to implement an innovative technology for brine minimization to achieve 95% overall production efficiency with RO (Reclamation, 2017). This high RO recovery with municipal recycled water is a breakthrough in the industry and the Title XVI Project will be one of the first agencies to use this technology in full scale.

4. *Address ongoing drought*

Padre Dam MWD is located in a region that experiences frequent droughts. Portions of San Diego County, including Padre Dam MWD's service area, were in Extreme Drought from mid-February 2014 to late January 2017. The U.S. Drought Monitor map showed San Diego County as being in Severe Drought, from mid-May 2018 to the end of December 2018. Some portion of San Diego County was classified as Severe, Extreme, or Exceptional Drought from April 2013 to January 2019 (U.S. Drought Monitor, 2019). Further, the U.S. Department of Agriculture and the Small Business Administration both declared San Diego County a drought disaster area in 2016 (County of San Diego, 2016). Padre Dam MWD's entire potable water supply is currently met with water purchased from SDCWA, which is primarily imported water from the SWP and Colorado River. These supplies are expensive and increasingly unreliable in times of drought. As experienced in the 2012-2016 drought, SWP supplies can be restricted during times of water shortages. It is critically important for Padre Dam MWD to diversify the water supply portfolio with local, drought-proof supplies as droughts become prolonged and more frequent. The Title XVI Project will address these concerns by creating 3,900 AFY of potable water, allowing an offset of an equal amount of imported water from the Sacramento-San Joaquin Bay-Delta and Colorado River systems. Advanced treated potable reuse water is a local and sustainable supply

that will improve water supply reliability in the Padre Dam MWD service area by providing a buffer against potential drought impacts on imported water supply.

6. Improve water supplies for tribal and rural communities

The Padre Dam MWD service area encompasses the Viejas Reservation and the Sycuan Reservation. Both tribal communities will directly benefit from the Title XVI Project as they will receive a new source of local, drought-proof water supply. The Viejas Band of Kumeyaay Indians and the Sycuan Band of Kumeyaay Indians have both submitted letters to Padre Dam MWD in support of the Title XVI Project because it will not only enhance water supply reliability in their communities, but it also aligns with their legacy of environmental stewardship and tradition of respect for natural resources. The letters of support are included in **Appendix A** of this application. The Title XVI Project will not improve water supplies for rural communities as there are no rural communities within the Padre Dam MWD service area boundaries.

1.3.5 Evaluation Criterion 5: Reclamation’s Obligations and Benefits to Rural or Economically Disadvantaged Communities

1.3.5.1 Subcriterion No. 5a - Legal and Contractual Water Supply Obligations

Explain how the Project relates to Reclamation’s mission and/or serves a Federal interest. Does the Project help fulfill any of Reclamation’s legal or contractual obligations such as providing water for tribes, water right settlements, river restoration, minimum flows, legal court orders, or other obligations? Explain.

Reclamation’s mission is “to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public,” (Reclamation, 2017). The Title XVI Project would develop a new sustainable potable water supply that will offset demands on existing water resources. It has demonstrated financial benefits (i.e., it is economically sound), reduces energy demands, and turns a waste stream into a resource.

The Title XVI Project would indirectly help to fulfill Reclamation’s legal or contractual obligations, by reducing demands for imported water by 3,900 AFY, including Colorado River supplies (averaging a projected 2,826 AFY offsets from the Colorado River between 2025 and 2040). This would allow more imported water to be available to meet other demands, including Reclamation’s legal or contractual water-related obligations.

1.3.5.2 Subcriterion No. 5b - Benefits to Rural or Economically Disadvantaged Communities

- 1. Does the Project serve a rural or economically disadvantaged community? If so, provide supporting information. A rural community is defined as a community with fewer than 50,000 people.**

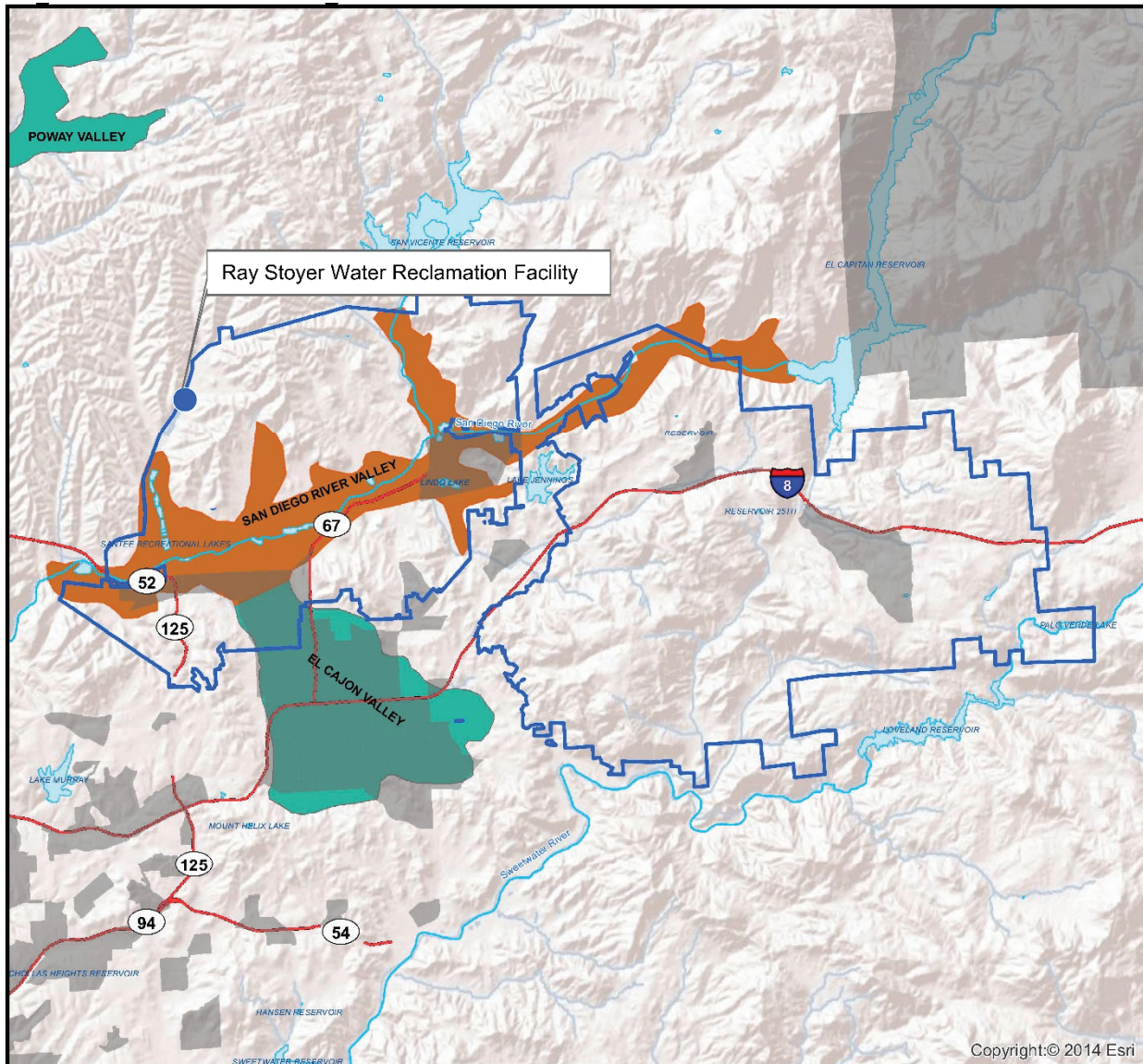
Padre Dam MWD provides services to approximately 100,000 people, and therefore does not meet the definition of a rural community. A portion of Padre Dam MWD’s

service area meets the definition of an economically disadvantaged community (DAC), with a median household income (MHI) 80% or less than statewide MHI (SDRWMG, 2015). A geospatial analysis found that 6% of Padre Dam MWD's service area, by geographical area, qualified as a DAC, while 11% of its population lived in DACs. These calculations were based on the populations and size of a combination of Census block-groups and tracts within the boundaries of Padre Dam MWD that met the 80% MHI definition of a DAC (SDRWMG, 2015). Although DACs are present within the Title XVI Project area, the Phase I Project does not directly serve the DACs because it does not actively target DACs, nor is the majority of the project benefit area a DAC. It does, however, provide indirect benefits to DACs because the Title XVI Project provides benefits to all Padre Dam MWD customers, including DACs within its service area. Benefits realized by all Padre Dam MWD customers include improved water supply reliability (and associated protection against cost increases of imported water), control the projected wastewater treatment cost increases, reduced overall energy use and associated air quality impact, and improved local water quality.

- 2. Are any rural or economically disadvantaged communities within the Project sponsor's service area? If so, provide supporting information. This may include neighborhoods or census tracts within a larger service area that are economically disadvantaged, and/or rural areas that are part of a larger urban area.***

As shown in **Figure 1-2**, Padre Dam MWD's service area includes some DACs, primarily south of the San Diego River in the WSA, and along portions of Highway 8 in the ESA. Approximately 11% of Padre Dam MWD's population lives in DACs (SDRWMG, 2015). Indirect benefits that would be realized by these DACs from the Title XVI Project include improved water supply reliability, a measure of protection against potential water rate increases associated with imported water and against the potential wastewater treatment cost increases, and indirect health benefits of reduced air quality impacts from energy production and use. Although the benefits would be realized equally by all residents within Padre Dam MWD's service area, the degree of benefits felt by DACs within Padre Dam MWD's service area would be higher compared to the benefits felt by non-DACs because the impact of a rate change is more substantial to lower income households than higher income ones.

Figure 1-2: Disadvantaged Communities in Padre Dam MWD Service Area



Coordinates: 32.88489, -116.99604

Legend

- Freeway
- Waterbody
- DAC Area*
- Medium Priority Groundwater Basin
- Very Low Priority Groundwater Basins
- Ray Stoyer Water Reclamation Facility
- Padre Dam Municipal Water District Service Area



* Note: DAC as determined by the census tract and block group data for the year 2013, from the American Community Survey 2009-2013 5-year results. DAC determined based on definition of median household incomes below 80% of the statewide M I or \$48,875.

1.3.6 Evaluation Criterion 6: Watershed Perspective

1. ***Does the Project implement a regional or state water plan or an integrated resource management plan? Explain.***

The Title XVI Project is an important part of Padre Dam MWD’s efforts to reduce reliance on water purchased from SDCWA, and has been incorporated into water supply projections in both Padre Dam MWD’s 2015 UWMP and SDCWA’s 2015 UWMP. As the water wholesaler for the San Diego Region, SDCWA’s 2015 UWMP represents regional water planning efforts and projections and incorporates planning efforts from all 24 of its member agencies. Regionally, development of secure, reliable, sustainable, and drought-proof local supplies is a high priority.

The Title XVI Project implements Phase I of the East County AWP Program, which is part of the San Diego IRWM Plan. The San Diego IRWM Plan encompasses all or a portion of eleven watersheds in San Diego County, including the San Diego River watershed in which the Title XVI Project is located. IRWM plans are broad documents that are crafted in a collaborative approach of multiple stakeholders to meet the needs of the watershed and integrate the various aspects of water including water supply, water quality, water conservation, and ecosystem restoration. Padre Dam MWD is an active member of the Regional Advisory Committee for the IRWM planning effort, which provides stakeholder guidance to the San Diego IRWM Program’s governing body, the Regional Water Management Group. The Title XVI Project is consistent with the 2019 San Diego IRWM Plan (SDRWMG, 2019), and has been identified as a priority project for the Region through a rigorous project selection process leading to inclusion in a successful 2015 regional grant application for priority projects. It addresses the following objectives of that plan (summarized):

- Development of integrated solutions, including integration between agencies, across watersheds and hydrologic services, sustainability, and/or beneficial uses
- Develop and maintain diverse supplies to improve water supply reliability and reduce dependence on imported water
- Construct reliable water supply infrastructure to improve water supply reliability, quality, and ability to meet demands of the region
- Reduce sources of pollution that exacerbate impacts to the environment and to people

The Project meets the objectives listed above by implementing the first phase of a coordinated water reuse program between four local agencies. The new water supply and infrastructure will increase supply reliability and reduce dependence on imported water. Additional wastewater treatment and increased recycled water production will reduce wastewater flows to the Pacific Ocean, reducing Padre Dam MWD’s contribution of pollutants to the ocean. The Title XVI Project will also reduce energy

demands to supply water to meet customer demands by offsetting energy-intensive imported water with less energy-intensive potable reuse water. The biosolids digestion facility will further increase the energy savings of the Title XVI Project by generating electricity to offset the project's demands. Utilization of a drought-proof, sustainable, local supply, will help Padre Dam MWD's ability to continue to meet customer demands.

2. Does the Project help meet the water supply needs of a large geographic area, region, or watershed? Explain.

The Title XVI Project implements a regional priority to develop local, sustainable, drought-proof supplies and reduce reliance on imported water as described in SDCWA's 2015 UWMP. SDCWA is the region's wholesaler, serving 24 member agencies, with a total service area of 1,486 square miles. Goals and priorities established in the SDCWA's 2015 UWMP are considered regional goals. Further, SDCWA's 2015 UWMP assumed that the Title XVI Project would be implemented in the near future. As a result, regional water planning, including SDCWA's assessment of its ability to meet member agency demands during dry year scenarios, is dependent on the water produced by the Project. Should the Project not be implemented, drought planning and emergency preparedness developed by the region may no longer be adequate or meet the standards of local and state regulations and policies.

3. Does the Project promote collaborative partnerships to address water-related issues? Explain.

The Title XVI Project implements Phase I of the East County AWP Program, which is a coordinated effort between Padre Dam MWD, El Cajon Water District, City of El Cajon, and the County of San Diego to implement water reuse in eastern San Diego County. Together, these agencies are collaborating to develop potable reuse supplies and opportunities to eastern San Diego County, which has limited access to local supplies. The agencies have collaborated to form a Joint Power Authority to deploy the East County AWP Program. The Title XVI Project is the first phase of this Program, and lays the groundwork for future phases of the East County AWP Program, including future SWA at Lake Jennings. Lake Jennings is owned by El Cajon Water District and use of the reservoir for SWA requires close collaboration between Padre Dam MWD and El Cajon Water District. As described throughout this report, the Title XVI Project and the East County AWP Program will help to diversify supplies, utilize a drought-proof, local, sustainable supply, and help to reduce dependence on imported water by the participating agencies. When implemented, the future Phase II project would increase local potable water production to up to 15,500 AFY for the East County, which is approximately 30% of the East County's water demand.

4. Does the Project include public outreach and opportunities for the public to learn about the Project? Explain.

Padre Dam MWD has an award-winning outreach and education program that features a combination of innovative and creative outreach tactics, including a comprehensive tour program at its AWP demonstration facility. In Fiscal Year 2017, 49 tours were provided, serving 679 K-12 students, 148 scouts, and 94 members of the public, for a total of 1,188 people who attended tours. Fiscal Year 2018 saw 51 tours given, reaching 935 K-12 students and scouts, and 353 members of the public, for a total of 1,253 people reached. Padre Dam MWD offered a total of 50 tours in Fiscal Year 2019 with a total attendance of 1,925 people, including 1,119 K-12 students and scouts and 806 members of the public. In addition, the East County AWP Program maintains a website (<http://eastcountyawp.com/>) with videos, presentations, newsletters, and educational materials. These public outreach efforts will continue throughout project implementation.

Padre Dam MWD's outreach and education program serves its customers, builds support and creates goodwill for the District and the AWP Program. Public education efforts have not only been a learning opportunity, but a pivotal opinion/perception changing experience. Communication tactics from video, tours and beer brewing partnerships have instilled confidence in the treatment process, highlighted the professionalism and competence of Padre Dam MWD and reinforced the program goals - all while building program support. The demonstrated increase in public acceptance resulting from the educational program underscores the importance of this vital water resource.

2 Environmental and Cultural Resources Compliance

A MND for the Title XVI Project covering the facilities within the fence-line of the existing treatment plant, i.e., the Ray Stoyer WRF Expansion and the AWP Facility (Phases IA-1 and IA-2) was completed in July 2015 (2015 MND). Driven by the changes required for using Lake Jennings as the environmental buffer instead of Santee Basin and addition of the future Phase II expansion of the Project, a Program Environmental Impact Report (PEIR) for the facilities improvements for the East County AWP Program was completed in May 2017. The 2017 PEIR included all of Phase I and Phase II of the Program. A Tiered MND that builds off the 2017 PEIR for Phases IA, IB (AWP Pipeline), and IC (Solids Handling Facility) was completed in December 2018 (2018 MND), with associated CEQA-Plus analysis, including federal crosscutters, submitted to the State in May 2019. All information provided below is relevant to the previously prepared environmental documents (the 2015 MND, 2017 PEIR, and 2018 MND for Phases IA, IB, and IC).

- a. ***Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?***
 - ***Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area.***

Construction of the various project components would occur both below and above grade. Earthwork would be required for construction of the tankage related to headworks, equalization basin, aeration basins, and secondary clarifiers. For the AWP Facility, earthwork would include site grading. The project would require approximately 22,000 cubic yards of excavation, 7,000 cubic yards of backfill and compaction, and hauling of 18,000 cubic yards of excess material off site. Approximately 5,000 cubic yards of demolition debris also would be disposed of off-site (Padre Dam MWD, 2015). These construction activities could result in air, water, and animal habitat impacts. Additionally, noise from construction may affect animal habitat in the project area, though no critical habitat was found within the project site. The MND found that the potential for impacts to air and water quality and to habitat from noise were all less than significant either before or with mitigation (Padre Dam MWD, 2018b).

- ***Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.***

Air quality will be protected by the incorporation of best management practices (BMP) into project construction to reduce dust emissions. Water quality will be protected during construction through the application of BMPs to avoid and minimize impacts to hydrology and biological resources. This will include the creation of a storm water pollution prevention plan (SWPPP) describing BMPs, monitoring, inspection, and recordkeeping. The SWPPP will be implemented by the construction contractor to minimize storm water discharge and reduce erosion. Potential noise impacts to sensitive biological resources will be addressed by avoidance during nesting season, as described below (Padre Dam MWD, 2017). Potential impacts to habitats for sensitive species would be mitigated through avoidance of construction activities where sensitive plant species are located, siting of facilities outside of sensitive habitat as appropriate, the use of trenchless technologies where pipelines must cross sensitive habitats, and implementation of BMPs to minimize impacts where construction must occur in the vicinity of sensitive species habitat (Padre Dam MWD, 2018b).

- b. Are you aware of any species listed, or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, how would they be affected by activities associated with the proposed project?***

Construction noise could impact two federally-listed species, the Coastal California gnatcatcher and the Least Bell's vireo, identified as having suitable habitat outside, but within 500 feet, of the project area. The potential impact to these species would cease with the end of project construction. These species were identified during a biological survey conducted on June 1, 2015 and a breeding pair of Coastal California gnatcatchers was confirmed as present in the Project Area in 2018 (Padre Dam MWD, 2015; Padre Dam MWD, 2018b). Least Bell's vireo was identified in 2018 as being within 500 feet of

the project disturbance limit (Padre Dam MWD, 2018b). To avoid the potential impact of construction activity noise to the nesting behavior of these species, any construction that is to take place during the breeding season for either species will be contingent on the review of the potential impact area by a certified biologist. If active nests belonging to either sensitive species is found during the survey, then construction will be postponed until the nest is no longer active or until a suitable noise barrier can be constructed. Similarly, if construction activities requiring removal, pruning, or damage of any trees or shrubs will occur during general avian breeding season, a qualified biologist will conduct a pre-construction survey. Construction activities will halt if an active nest is found during the survey until the nest is no longer active or until the end of the breeding season, whichever occurs later (Padre Dam MWD, 2015; Padre Dam MWD, 2017). A qualified biologist would monitor construction activities and install temporary fencing to protect sensitive species and habitat as appropriate (Padre Dam MWD, 2018b).

Four special-status plant species were identified in the Project area around Lake Jennings: Ashy spike-moss, San Diego County viguiera, delicate clarkia, and San Diego goldenstar. The Project would have less than significant impacts on ashy spike-moss and San Diego County viguiera. Avoidance would be employed to protect delicate clarkia and San Diego goldenstar, where construction activities would be prohibited in areas delineated on construction plans as supporting these species (Padre Dam MWD, 2018b).

- c. ***Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.***

There are currently three surface water bodies that are part of Padre Dam MWD’s water delivery and discharge system. These include:

1. Lake Jennings – Imported water is stored at Lake Jennings prior to treatment and use as a potable supply.
2. Santee Lakes – A quantity of the recycled water produced at the Ray Stoyer WRF is conveyed to the Santee Lakes and is eventually discharged to Sycamore Creek.
3. Sycamore Creek – Recycled water discharged from Santee Lakes enters Sycamore Creek and is controlled by an NPDES permit.

Of these three surface water bodies, Sycamore Creek and Lake Jennings are the only potential “waters of the United States” within the Title XVI project area. Santee Lakes is not a water of the United States because it is artificial, constructed lakes and part of Padre Dam MWD’s wastewater treatment and recycling system.

The Project has been designed to avoid federally-protected wetlands and other potential jurisdictional features to the extent feasible. However, there would be

permanent loss of habitat to 0.6 acres of freshwater marsh at Lake Innings from construction of the new inlet, which would install a cascading water feature to slow water velocity entering the reservoir. This feature would be constructed in Diegan coastal sage scrub and freshwater marsh that could not be reasonably avoided. Padre Dam MWD would secure all the appropriate permits and implement compensatory mitigation consistent with U.S. Army Corps of Engineers, RWQCB, and California Department of Fish and Wildlife requirements. Compensatory mitigation would include a minimum of 1:1 ratio of new, restored, or permanently preserved habitat to loss. Diegan coastal sage scrub would be compensated at a ratio of 2:1 and Southern willow scrub at a ratio of 3:1 (Padre Dam MWD, 2018b).

Lake Innings is owned, operated, and maintained by Santee and is used primarily to store imported water. Imported water storage accounts for 95% of the 9,790 AF of total storage. Local runoff accounts for the remainder. Substituting recycled water for imported water will impact the total volume of imported water, but it will not change the volume of water stored in the Lake. Advanced treated water is higher quality than untreated imported water purchased from SDCWA. As such, overall water quality at Lake Innings is anticipated to improve as advanced treated water is delivered for SWA. No adverse water quality impacts to Lake Innings are anticipated as a result of operation of the Title XVI Project, though additional studies are being completed to determine the potential impact of improved water quality in Lake Innings from the Project on the local ecosystem and connected water bodies. There is potential for construction dust or construction-related erosion to contribute to temporary water quality impacts to local water bodies. Implementation of dust and erosion control measures and a Stormwater Pollution Prevention Plan will reduce these potential impacts to less than significant (Padre Dam MWD, 2018b).

The Title XVI project will not change the existing augmentation of Santee Lakes (which are not “waters of the United States”) with recycled water and it is therefore not expected to impact either the Santee Lakes or Sycamore Creek.

d. When was the water delivery system constructed?

Padre Dam MWD was formed in 1976 as a merger of two agencies: Rio San Diego Municipal Water District (formed in 1955) and Santee County Water District (formed in 1956) (Padre Dam MWD, 2016a). Recycled water was first developed in Padre Dam MWD’s service area in the early 1960s, with discharges to the Santee Lakes (opened in 1961 for recreational use). The Ray Stoyer WRF was originally constructed in 1968 and upgraded in 1997 to its present-day 2 MGD capacity (Padre Dam MWD, 2016b). Recycled water delivery system including pump station, reservoirs, and distribution pipeline were constructed along with the Ray Stoyer WRF expansion in 1997.

e. Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those

features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

The Title XVI project will modify the existing Ray Stoyer WRF through expansion of the facility, as well as the addition of the AWP facility. Because the advanced treated water is a new source of supply, advanced water facilities, pipelines, and the pump station will be new and not modify any individual features of an irrigation system. Lake Jennings has sufficient capacity to accommodate the 3,900 AFY advanced treated water from the Title XVI Project, and would not require extensive modifications as a result of the Project.

- f. Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places (NRHP)? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.***

The project-level environmental documentation completed for the 2015 MND and 2018 MND included project-level cultural and historical records searches. The 2015 MND found no historical resources within the Phase IA project area. The 2018 MND for Phases IB and IC of the Title XVI Project found three historical resources within the area of potential effect for the Project, though only one of these was recommended as eligible for listing in the NRHP, the San Diego Flume. The San Diego Flume was constructed between 1886 and 1889 and delivered water from Cuyamaca Dam to the La Mesa Reservoir until 1936. A portion of the Project's pipeline would be routed through the El Monte Tunnel of the San Diego Flume towards Lake Jennings. The Project would have a significant impact to the El Monte Tunnel, though mitigation would be employed to reduce this impact to less than significant. Mitigation includes designing the portion of the Project that would route through the El Monte Tunnel in consultation with a qualified Historic Preservation Specialist and the California State Historic Preservation Officer, and follow the Secretary of the Interior's Standards for the Treatment of Historic Properties.

- g. Are there any known archeological sites in the proposed Project area?***

There are no known archeological sites in the WRF and AWP sites for the Project. A records search was conducted at the SCIC on May 19, 2015 and a Sacred Lands File (SLF) search was conducted on May 28, 2015. The results did not indicate the presence of any archeological or Native American cultural resources. An on-foot survey conducted June 1, 2015 by a Native American monitor also found no presence of cultural resources. During the construction activities a qualified archeologist will be retained and shall be present to monitor initial ground disturbance of the project. The archaeologist shall have the authority to temporarily halt or redirect ground-disturbing activity if necessary (Padre Dam MWD, 2015).

The pipeline to Lake Jennings may intersect a known cultural resource at some sections, and there is potential for any Project activities in undeveloped areas to encounter previously unrecorded archaeological resources.

The cultural resources report for the 2017 PEIR included a review of ASM's known records but did not include formal records search due to the size of the program area. ASM's analysis of archaeological resources indicated some components of the Title XVI project intersect a known cultural resources site. These components include the conveyance pipelines from the AWT to Santee Basin that are no longer part of the Title XVI project, as well as components of future phases not included in the Title XVI project (Padre Dam MWD, 2017).

A project-level Cultural Resources Assessment in 2018 found five archaeological resources within the vicinity of the Title XVI project. Of these sites, two were located within the APE for the project, though neither was relocated during surveys for the Cultural Resources Assessment. These sites are assumed to still exist, and are both prehistoric habitation sites (CA-SDI-10148 [P-37-010148] and CA-SDI-13815 [P-37-013812]). A 2018 SLF search and subsequent Native American consultation indicates sensitivity for cultural resources in the Project area. Construction monitoring and recovery of cultural resources would be implemented to reduce potential impacts to less than significant.

h. Will the proposed Project have a disproportionately high and adverse effect on low income or minority populations?

The proposed Project is not anticipated to have a disproportionately high and adverse effect on low income or minority populations. The 2018 MND found a less-than-significant impact or no impact for population and housing indicators, public services indicators, and recreation indicators. Transportation/traffic impacts will be mitigated to less than significant. Noise was found to be at or below less than significant with mitigation incorporated. Noise mitigation will include the use of mufflers and limitations on the times of day when noise producing activities may occur. Based on the findings of the MND, adverse effects are not anticipated for any of the communities in or near the project area.

Conversely, the project will indirectly benefit the entire Padre Dam MWD service area, including the DAC and minority populations, by increasing local supply reliability and, in doing so, decreasing dependence on expensive imported water supplies. This shift in supply will help protect against water rate increases associated with the need for expensive water supply alternatives.

i. Will the proposed Project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The Project Activities will not have any impacts to tribal lands. A records search for the Phase IA components was conducted at the SCIC on May 19, 2015 and a Sacred Lands File search was conducted on May 28, 2015. The results did not indicate the presence of any archeological or Native American cultural resources. An on-foot survey conducted June 1, 2015 by a Native American monitor also found no presence of cultural resources. During the construction activities, a qualified Native American monitor will be retained and shall be present to monitor initial ground disturbance of the project. In the event that Project Activities uncover previously unknown cultural resources, the Native American monitor will notify the lead agency, develop an appropriate plan for the resource, and consult with Native American representatives (Padre Dam MWD, 2015).

A Native American Heritage Commission (NAHC) consultation in January 2018 indicated the Project area was sensitive for cultural resources. Tribal consultation resulted in a request for a Kumeyaay Cultural Monitoring to be present during ground-disturbing activities to alert workers to any inadvertent discovery of cultural artifacts, cremation sites, or human burials. Construction monitoring and appropriate recovery and documentation of cultural resources will be implemented during excavation activities (Padre Dam MWD, 2018b).

j. Will the proposed Project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

It is not anticipated that the Project Activities will contribute to the introduction, continued existence or spread of any invasive species. The project will take place on disturbed, developed, and ornamental plant coverage areas and will not disturb native vegetation communities. It is therefore unlikely that the project will cause the introduction of invasive species in those areas.

3 Required Permits or Approvals

Padre Dam MWD identified permits that would be required for the Phase IA-1 and Phase IA-2 components (Ray Stoyer WRF Expansion and AWP Facility) in the MND that was certified in July 2015, and for Phases IA, IB, and IC in the 2018 MND. Required permits include:

- NPDES Permit for Treated Recycled Water Discharges into Lake Jennings: An NPDES permit is required by the RWQCB to regulate discharges into the inland water body (Lake Jennings) as described in the San Diego Basin Plan. The NPDES permit also includes provisions from DDW for the potable reuse requirements as stated in the SWA regulations. The following list provides the current status and expected progress with the Lake Jennings NPDES permitting.
 - Received Conceptual Approval Letter from SWRCB-DDW approving the proposed advanced water treatment technologies for the East County AWP project on March 7, 2017.

- Received Conceptual Approval Letter from SWRCB-DDW approving the proposed East County AWP project’s reservoir augmentation at Lake Jennings on March 24, 2017.
- Completed Tracer Study before project implementation required in the SWA Regulations in October 2017.
- Completed hydrodynamic modeling calibration and validation with Tracer Study data and presented to an Independent Advisory Panel (IAP) in May 2019. Expecting to receive IAP approval in June 2020 which will be submitted to DDW for approval.
- Received Conditional Acceptance Letter from the San Diego RWQCB regarding the compliance approach for discharges into Lake Jennings for reservoir augmentation on September 11, 2019.
- Draft Title 22 Engineering Report is expected to be completed in 2020 and will be revised once the design-build contractor finalizes the design in 2021.
- Final Title 22 Engineering Report is expected to be submitted to DDW in early 2022 to initiate the regulatory review process to receive the NPDES permit.
- RWQCB review process is expected to start in early 2023 once the DDW comments are addressed and DDW holds a public hearing. RWQCB review process is expected to take 12 months. The NPDES permit adoption is anticipated to occur in early 2024.
- Revised NPDES Permit and Waste Discharge Requirements (WDR) for Ray Stoyer WRF: The existing NPDES permit and WDD for Ray Stoyer WRF need to be revised and approved by the RWQCB for the improvement proposed at the WRF. The WDR will also address the use of sludge for the biosolids digestion facility in Phase IC.
- Construction Related Permits: A general construction permit, encroachment permits, building permits, and 401 and 404 permits would need to be obtained before construction begins by October 2021, if applicable.

Permits and approvals required for the completion of the Title XVI Project are listed in **Table 3-1** below.

Table 3-1: Required Permits and Approvals for Title XVI Project

Permit/Approval	Regulating Agency	Criteria and Timelines
CEQA for Phase IA (WRF and Advanced Water Purification Facility)	California Natural Resources Agency	MND determined and prepared. NOD issued in November 2015.
CEQA for Phases IA, IB, and IC	California Natural Resources Agency	PEIR for Phases IA, IB and IC completed in May 2017. Tiered MND for Phases IA, IB, and IC adopted in December 2018.
CEQA Plus (includes federal crosscutters for NEPA compliance)	SWRCB	Phase IA completed March 2017; Phases IA, IB, and IC for revised project anticipated by June 2020.
FONSI for Title XVI Project	Reclamation	Anticipated by Summer 2020

Permit/Approval	Regulating Agency	Criteria and Timelines
Revised Discharge (NPDES) Permit and WDR for Ray Stoyer WRF	RWQCB – San Diego	Anticipated to submit Title 22 Engineering Report to DDW and RWQCB in 2022 once the final design is completed. Anticipated to finalize the permit application process and obtain the permit revision in 2024.
New NPDES Permit for advanced treated water discharge into Lake Jennings	RWQCB – San Diego SWRCB DDW	Anticipated to submit Title 22 Engineering Report to DDW and RWQCB in 2022 once the final design is completed. Anticipated to finalize the permit application process and obtain the permit by early 2024.
General Construction Permit	RWQCB – San Diego	Anticipated by October 2021 (before construction starts)
Construction Permit	San Diego County	Anticipated by October 2021
Building and Traffic Control Permit	City of Santee	Anticipated by October 2021
Construction Permit	San Diego Air Quality Management District	Anticipated by October 2021
401 Certification	SWRCB	Anticipated by October 2021
404 Permit (if necessary)	U.S. Army Corps of Engineers	Anticipated by October 2021
California Endangered Species Act PRC §30600	CDFW	Anticipated by October 2021
Section 1602 Streambed Alteration Agreement	CDFW	Anticipated by October 2021
Encroachment Permit	Caltrans	Anticipated by October 2021

RWQCB = Regional Water Quality Control Board; SWRCB = State Water Resources Control Board; DDW = Division of Drinking Water; CDFW = California Department of Fish & Wildlife; Caltrans = California Department of Transportation

4 Project Budget

4.1 Funding Plan and Letters of Commitment

The total cost for the Title XVI project including planning, design, and construction is estimated to be \$132,297,144. Costs for the Phase I Project to be completed by September 2023 are included in **Table 4-1**. These activities are broken into four project components, (see *Section 1.2 Technical Project Description*) as well as Planning/Design and Construction costs. Costs expected to occur after September 2023 through project completion are also shown in Table 4-1. Planning and design for all four phases will occur between the end of 2016 and March 30, 2022. Construction will begin in October 2021 and be approximately 65 percent complete by the end of September 2023. Construction will continue between October 2023 and the end of 2024.

Padre Dam Water Recycling Facilities – Phase I Expansion
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Table 4-1: Cost Estimate for the Title XVI Project

Budget Item Description	Recipient Funding		Total Cost
	Local Match	DWR Prop 84	
Previous Activities			
Ray Stoyer WRF Facilities Plan	\$27,493	\$0	\$27,493
Phase IA MND	\$84,676	\$0	\$84,676
Ray Stoyer WRF Planning and Design	\$1,918,539	\$0	\$1,918,539
Advanced Water Purification Facility Planning and Design	\$2,768,931	\$300,000	\$3,068,931
AWP Pipeline and Pump Station	\$2,320,992	\$0	\$2,320,992
Biosolids Digestion Facility Planning and Design	\$1,496,816	\$0	\$1,496,816
Subtotal Previous Activities	\$8,617,447	\$300,000	\$8,917,447
Planned Activities Through September 2023			
Ray Stoyer WRF Expansion			
<i>Planning and Design</i>	\$3,931,717	\$0	\$3,931,717
<i>Construction</i>	\$14,061,406	\$5,700,000	\$19,761,406
Advanced Water Purification Facility			
<i>Planning and Design</i>	\$4,631,069	\$0	\$4,631,069
<i>Construction</i>	\$21,500,000	\$0	\$21,500,000
AWP Pipeline and Pump Station			
<i>Planning and Design</i>	\$3,521,488	\$0	\$3,521,488
<i>Construction</i>	\$19,000,000	\$0	\$19,000,000
Biosolids Digestion Facility			
<i>Planning and Design</i>	\$2,295,224	\$0	\$2,295,224
<i>Construction</i>	\$11,500,000	\$0	\$11,500,000
Subtotal Planned Activities Through Sept. 2023	\$80,440,904	\$5,700,000	\$86,140,904
Planned Activities After September 2023			
Ray Stoyer WRF Expansion			
<i>Planning and Design</i>	\$0	\$0	\$0
<i>Construction</i>	\$9,500,000	\$0	\$9,500,000
Advanced Water Purification Facility			
<i>Planning and Design</i>	\$0	\$0	\$0
<i>Construction</i>	\$13,920,000	\$0	\$13,920,000
AWP Pipeline and Pump Station			
<i>Planning and Design</i>	\$0	\$0	\$0
<i>Construction</i>	\$7,875,406	\$0	\$7,875,406
Biosolids Digestion Facility			
<i>Planning and Design</i>	\$0	\$0	\$0
<i>Construction</i>	\$5,943,387	\$0	\$5,943,387
Subtotal Planned Activities After Sept. 2023	\$37,238,793	\$0	\$37,238,793
Total Direct Costs	\$126,297,144	\$6,000,000	\$132,297,144
Indirect Costs	\$0	\$0	\$0
Total Project Costs	\$126,297,144	\$6,000,000	\$132,297,144

4.1.1 Sources of Funding

The Title XVI Project has secured three sources of funding to-date: 1) Reclamation’s Title XVI funding, 2) IRWM implementation grant funding, and 3) Padre Dam capital funds. Additionally, Padre Dam MWD has submitted an application package for grant and low-interest loan dollars to fund Phase 1 through SWRCB’s Clean Water State Revolving Fund (CWSRF) program.

SWRCB has completed the application review and a financing agreement was executed in October 2017; however, due to changes in the project elements, the financial agreement was withheld and is under revision. Padre Dam MWD anticipates that principal forgiveness will be available for \$15 million of this loan after completion of the Project, but until such forgiveness has been awarded, Padre Dam MWD is considering the entire amount a loan for accounting purposes. Padre Dam MWD expects to have a signed agreement for the Phase I funding allocation this year.

In 2019, Padre Dam MWD submitted a Letter of Interest to the USEPA's Water Infrastructure Finance and Innovation Act (WIFIA) program for a \$342 million low-cost supplemental loan to fund both Phase I and Phase II. The USEPA qualified the project and invited Padre Dam MWD to move forward in the application process. Padre Dam MWD is currently working with the USEPA on the application package and intends to submit a full application package for the WIFIA loan this year. However, this loan has not been included as a funding source in this application since it has not yet been secured.

Project costs not covered by grants or loans currently awarded, being pursued, or anticipated to be pursued, are expected to be funded by Padre Dam MWD through their Sewer System Net Revenues, Water System Net Revenues, and Wastewater Funds.

Reclamation's WaterSMART Title XVI Program

The maximum amount covered by Title XVI funds is 25% of total project costs, with total project costs at approximately \$132 million. To complete the Title XVI Project and deliver 3,900 AFY potable reuse water, Padre Dam MWD requests a total of \$33,074,286 in Federal funds to meet the maximum federal contribution of 25% of total project costs. The Title XVI Project was previously awarded \$16,570,353 from Reclamation's WaterSMART Title XVI Fiscal Year 2016, Fiscal Year 2017, Fiscal Year 2018, and Fiscal Year 2019 solicitations, and therefore requests an additional \$16,503,933 in Federal funding under this and future Title XVI solicitations in order to obtain maximum Title XVI grant funding. This funding has helped Padre Dam continue to move forward with implementation and allowed the project to continue moving towards construction. The remaining funding is anticipated to be covered by a combination of Federal, State, and local funding including a CWSRF grant/loan from SWRCB. Each funding source is described in more detail below.

Proposition 84 Grant

Padre Dam MWD has received an award of \$6,000,000 in Proposition 84 grant funding through DWR as part of the San Diego IRWM Region's 2015 implementation grant proposal. A copy of this award letter has been provided in **Appendix C**.

Local Wastewater Funds

Monies from the Wastewater Funds are made available by treating additional wastewater at the Ray Stoyer WRF rather than paying for it to be treated at Point Loma WWTP. Projected costs for disposal of wastewater to the Metro System range from \$5,748/MG and \$11,305/MG

between 2025 and 2040, averaging \$7,858/MG during those years. These projections also account for future costs for improvements related to the recycled water projects proposed upstream of the Point Loma WWTP. This is substantially higher than the average \$2,330/MG estimated for wastewater treatment at the Ray Stoyer WRF and will allow for the use of Wastewater funds to increase the capacity of the facility. Avoiding the costs of sending wastewater to the Metro System will save Padre Dam MWD money, which will be used to partially fund the costs of the Title XVI Project via the Wastewater Funds. The costs saved from reducing imported water purchases from SDCWA will also be used to partially fund the Title XVI Project to create new potable reuse water. This Funding Plan assumes Padre Dam MWD's Wastewater Funds will contribute \$10,000,000 to the project costs.

CWSRF Grant/Loan

Padre Dam MWD has applied to SWRCB for, and was preliminarily awarded, \$116,200,000 in funding for Phase I from the CWSRF and is currently awaiting finalization of the funding agreement. Because the funding package from SWRCB consists of low interest loans (at an interest rate of ~1.8%) and principal forgiveness for \$15 million after completion of the Project, the amount financed through the CWSRF program would be finalized based on the amount of grant funding awarded by Reclamation through the Title XVI Program. In other words, any CWSRF financing received will be used only after grant funding sources are exhausted. The Funding Plan shown in **Table 4-2** assumes that non-federal costs that have not received grant funding will be covered by a combination of a CWSRF loan and grant, in the amount of approximately \$83 million. Although the financial agreement was signed in October 2017, due to changes in the project elements and the execution timeline, the financial agreement is currently under amendment and a final decision on the revised financial agreement is anticipated in 2020. Because the final financing agreement amendment has not yet been executed, the CWSRF funds have not yet been secured. If funding is not secured through the CWSRF, then the project will be funded through Padre Dam MWD's Wastewater Funds, Sewer System Net Revenues, and Water System Net Revenues. A summary of the funding sources is provided in **Table 4-2**.

WIFIA Loan

Padre Dam MWD is in the process of applying to the USEPA's WIFIA program for a \$342 million low-cost supplemental loan to fund both Phase I and Phase II. Padre Dam MWD expects to submit a complete application within this year. However, this request is not reflected in **Table 4-2** as the application materials have not yet been submitted and the funding has not been secured. If funding is not secured through WIFIA, then the project will be funded through Padre Dam MWD's Wastewater Funds, Sewer System Net Revenues, and Water System Net Revenues.

Table 4-2: Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
1. DWR (Proposition 84 Grant)	\$6,000,000
2. Padre Dam MWD Wastewater Funds	\$10,000,000
3. SWRCB (CWSRF) ¹	\$83,222,858
Non-Federal Subtotal:	\$99,222,858
Federal Entities	
1. Requested Title XVI Funding (Total)	\$33,074,286
a. Awarded Title XVI Funding – FY16	\$4,500,000
b. Awarded Title XVI Funding – FY17	\$3,900,000
c. Awarded Title XVI Funding – FY18	\$7,392,351
d. Awarded Title XVI Funding – FY19	\$778,002
Requested Reclamation Funding under this FOA:	\$16,503,933
Total Project Funding:	\$132,297,144

¹SRF dollars have been applied for but not yet awarded. In the event that SRF dollars are not awarded, or the full amount not awarded, Padre Dam MWD will cover these costs with Wastewater System and Water System revenues, bonds, or funds from other grant or loan programs.

4.1.2 Letters of Commitment

Padre Dam MWD has secured funding through Proposition 84 IRWM funding. Padre Dam MWD has included a copy of the Proposition 84 IRWM grant award letter from DWR to SDCWA for the region’s application, which included the Title XVI Project, along with announcements of funding awarded through previous Title XVI FOAs, as **Appendix C**. No other outside sources of funding have been secured to-date. Padre Dam MWD anticipates receiving a grant/loan through the CWSRF program. Should an award be forthcoming under that program, Padre Dam MWD will submit a copy of the award letter to Reclamation.

4.2 Budget Proposal

The Title XVI Project’s detailed budget proposal is provided in **Table 4-3**, followed by a narrative explanation of the costs included. Costs have been negotiated with Reclamation during the contracting process for previous years’ successful Title XVI applications and associated funding agreements, and while some adjustments have been made to accommodate project changes, the revised costs remain within the guidelines provided by Reclamation during previous contracting periods. The budget proposal includes all project costs, not just those through September 2023.

Padre Dam Water Recycling Facilities – Phase I Expansion
 Title XVI Grant Application 2020

Table 4-3: Budget Proposal¹

BUDGET ITEM DESCRIPTION	COMPUTATION			
	Value	Unit	Quantity	TOTAL COST
SALARIES AND WAGES				
Engineer (Salary Grade 33)	\$48.00	hr	7140	\$342,720
Engineer (Salary Grade 33)	\$50.00	hr	7140	\$357,000
Engineer (Salary Grade 36)	\$55.00	hr	7140	\$392,700
Engineer (Salary Grade 41)	\$66.00	hr	7140	\$471,240
CIP Engineering Manager	\$70.00	hr	6800	\$476,000
Director of Engineering and Planning	\$80.00	hr	3400	\$272,000
Engineering Technician (Salary Grade 25)	\$45.00	hr	3480	\$156,600
Director of Operations and Water Quality	\$80.00	hr	3478	\$278,240
Assistant Operations Manager	\$55.00	hr	3475	\$191,125
Plant Manager	\$58.00	hr	3475	\$201,550
Recycled Water Operations Supervisor	\$40.00	hr	1930	\$77,200
Construction Inspector (Salary Grade 23)	\$40.00	hr	1930	\$77,200
Administrative Assistant (Salary Grade 18)	\$30.00	hr	2400	\$72,000
GIS/CAD Specialist (Salary Grade 22)	\$35.00	hr	2500	\$87,500
			Subtotal	\$3,453,075
FRINGE BENEFITS				
For All Positions	60.26	%		\$2,080,823
			Subtotal	\$2,080,823
SUPPLIES AND MATERIALS				
Incorporated into Contractual Costs				\$ -
			Subtotal	\$ -
EQUIPMENT				
Incorporated into Contractual Costs				\$ -
			Subtotal	\$ -
TRAVEL				
Incorporated into Contractual Costs				\$ -
			Subtotal	\$ -
CONTRACTUAL				
In-Place Contracts				
Ray Stoyer WRF Facilities Planning Study		ls	\$27,493	\$27,493
Ray Stoyer WRF Phase 1 Expansion MND		ls	\$84,676	\$84,676
Kennedy Jenks As Needed Support Contract-Term 1		ls	\$3,658,870	\$3,658,870
Kennedy Jenks As Needed Support Contract-Term 2		ls	\$2,163,000	\$2,163,000
Kennedy Jenks As Needed Support Contract-Term 3		ls	\$1,459,275	\$1,459,275
Future Contracts				
AWP Program Planning				
Ray Stoyer WRF Expansion		ls	\$115,012	\$115,012
AWP Facility		ls	\$11,069	\$11,069

Padre Dam Water Recycling Facilities – Phase I Expansion
 Title XVI Grant Application 2020

BUDGET ITEM DESCRIPTION	COMPUTATION			
	Value	Unit	Quantity	TOTAL COST
AWP PS and Pipeline		ls	\$16,000	\$16,000
Solids Handling		ls	\$20,000	\$20,000
AWP Facilities Design				
Ray Stoyer WRF Expansion		ls	\$3,053,364	\$3,053,364
AWP Facility		ls	\$3,960,000	\$3,960,000
AWP PS and Pipeline		ls	\$2,978,049	\$2,978,049
Solids Handling		ls	\$1,820,179	\$1,820,179
AWP Facilities Construction				
Ray Stoyer WRF Expansion		ls	\$28,752,512	\$28,752,512
AWP Facility		ls	\$34,980,000	\$34,980,000
AWP PS and Pipeline		ls	\$26,523,780	\$26,523,780
Solids Handling		ls	\$17,140,023	\$17,140,023
			Subtotal	\$126,763,302
TOTAL DIRECT COSTS				\$132,297,200
INDIRECT COSTS				
	Rate	-	Base	-
		%		\$ -
TOTAL PROJECT/ACTIVITY COSTS:				\$132,297,200

1 Some differences may occur due to rounding

4.3 Budget Narrative

Salary and Wages

Salary and wages include standard rates for Padre Dam MWD staff, exclusive of fringe benefits. Key personnel are identified by title, with the number of hours available based on anticipated workload and project schedule. Padre Dam staff role is being the Program Manager during the Title XVI Project execution including managing the engineering planning and design work, overseeing construction and construction management work, interagency coordination MOU agreements for the project execution, coordination with regulatory agencies for permitting, environmental compliance coordination, and public outreach. Consultants will supplement the Padre Dam staff for planning, design, and construction of the facilities.

Fringe Benefits

Padre Dam MWD's fringe benefits are just over 60% of staff costs for all positions at Padre Dam MWD based on FY16 data. This benefit value was derived by Padre Dam MWD's financial staff and reflects standard rates and benefits at the agency. Fringe benefits include medical insurance, disability insurance, workers compensation insurance, and retirement benefits. Fringe benefits were previously approved by Reclamation during contracting for funding awarded under previous Title XVI FOAs.

Travel

No travel costs for Padre Dam MWD staff are included in the Title XVI Project. Any travel that might be incurred by Padre Dam MWD staff would be considered part of normal operations and not specific to the Project. Travel costs incurred by consultants and contractors are incorporated into contractor costs.

Equipment

No equipment is anticipated to be purchased by Padre Dam MWD for this project. Any equipment used during construction is included in the contractor costs.

Materials and Supplies

Materials and supplies are included in contractor costs and are not expected to be directly incurred by Padre Dam MWD. Any materials and supplies purchased directly by Padre Dam MWD are anticipated to be part of normal operations of the agency (e.g., printer paper) and not specific costs for the Title XVI Project.

Contractual

The majority of the project costs are for contractors. Padre Dam MWD has executed (and in some cases completed) contracts for the Facilities Planning Study, Phase I Expansion MND, and an as-need support for the Phase I project. These total \$5.25 million. Padre Dam MWD is at 10% design for the Phase I project and has initiated the contracting process for all Title XVI Project components. RFQs have been issued for the project components. RFPs are expected to be issued in April 2020. Engineer estimates, planning studies, and previous experience were used to develop projected costs anticipated for future contractual work. When such contracts are awarded, they will be submitted to Reclamation upon request. Any contract awarded between submittal of this application and submittal of a future Title XVI application will be included in an appendix, or at the request of Reclamation.

Third-Party In-Kind Contributions

The proposed project does not include third-party in-kind contributions. This budget classification is not applicable.

Environmental and Regulatory Compliance Costs

Federal environmental compliance will be achieved through a Finding of No Significant Impact (FONSI), which is expected to be completed by Summer 2020 based on personal communication with Doug McPherson of Reclamation. Reclamation's costs for environmental compliance to develop the FONSI were estimated at \$10,560 and were withheld from the FY2016 and FY2017 Title XVI grants previously awarded to Padre Dam MWD for this Project. As such, these costs have not been included in this application.

Other Expenses

No other expenses are included in the Title XVI Project.

Indirect Costs

No indirect costs are included in the Title XVI Project.

Total Costs

Total capital costs for the Title XVI Project are \$132,297,200, based on the sum of the costs described above.

5 Letters of Support

Padre Dam MWD has received letters of support from the following 17 organizations for the Title XVI Project; copies of these letters are provided as **Appendix A** of this application:

- El Cajon Water District
- San Diego County Board of Supervisors
- City of El Cajon
- Otay Water District
- California Regional Water Quality Control Board, San Diego Region
- Congressman Duncan Hunter, 50th District, California, U.S. House of Representatives
- City of Santee
- Metro Wastewater PA
- Sycuan Band of the Kumeyaay Nation
- San Diego IRWM Program
- Water Reliability Coalition
- Senator Joel Anderson, 36th Senate District, California Legislature
- Assemblyman Brian Jones, 71st District, Assembly, California Legislature
- Assemblyman Randy Voepel, 71st District, Assembly, California Legislature
- County Supervisor Dianne Jacob, 2nd District, San Diego County Board of Supervisors
- Senator Brian W. Jones, 38th Senate District, California Legislature
- Viejas Band of Kumeyaay Indians

6 Official Resolution

On February 3, 2020, Padre Dam MWD's Board of Directors authorized Padre Dam MWD's General Manager (or his designee) to apply for and enter into an agreement for funding under this FOA and confirmed that Padre Dam MWD will be able to provide the required 75% funding match. A copy of the adopted resolution is provided as **Appendix B**.

7 References

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Appendix A – Letters of Support

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Helix Water District

7811 University Avenue
La Mesa, CA 91942-0427

(619) 466-0585

FAX (619) 466-1823

www.hwd.com

Setting standards of excellence in public service

October 3, 2014

Allen Carlisle
CEO / General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle:

Helix Water District's Board of Directors unanimously support Padre Dam Municipal Water District's Advanced Water Purification Demonstration project. This project will create a drought-resistant water supply.

The water re-purification process is a safe, cost-effective, locally controlled and environmentally responsible water source option. The water that is produced will be tested daily to ensure it meets the public health objectives for the California Public Health Department.

Regionally, water providers can significantly reduce our reliance on imported water currently traveling from hundreds of miles away. This project offers San Diego East County communities the opportunity to protect our future and regain control of an important resource.

Helix Water District commends Padre Dam Municipal Water District's work to diversify water supplies and increase their independence and control over their own local water source.

Sincerely,

Charles W. Muse
President, Board of Directors



DIANNE JACOB

CHAIRWOMAN, SECOND DISTRICT
SAN DIEGO COUNTY BOARD OF SUPERVISORS

August 7, 2014

Serving the cities of:
El Cajon
La Mesa
Lemon Grove
Poway
Santee

Serving the communities of:
Agua Caliente
Allied Gardens
Alpine
Burrell

Blossom Valley
Bostonia
Boulevard
Campo
Canebrake
Casa de Oro
College Area
Crest
Cuyamaca
Dehesa
Del Cerro
Descanso
Dulzura
Eucalyptus Hills
Fernbrook
Flinn Springs
Granite Hills
Grantville
Guatay

Allen Carlisle
CEO / General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. 

As Supervisor for the Second Supervisorial District in San Diego County, I am writing in support of Padre Dam's grant-funded Advanced Water Purification pilot project. I understand this project will test the feasibility for achieving a new source of purified water for East San Diego County.

East San Diego County has been a place for leadership and innovation in water and wastewater treatment since the late 1950s. The Santee Lakes are a result of forward-thinking wastewater treatment efforts from decades ago. I am pleased to see that the current leadership is following in this tradition of innovation as you work to achieve water independence. The communities of Santee, Alpine, Blossom Valley, Crest, Harbison Canyon, Flinn Springs, Dehesa and parts of El Cajon will directly benefit from your work to expand local water resources. Your pilot project offers a step toward water independence and reliability for East County.

Water is a precious resource that we must protect, conserve and recycle. I support your efforts to strive for expansion of our local supply and increase our independence and control, as well as securing long-term solutions for regional stability. The Padre Dam Advanced Water Purification project offers San Diego County communities the opportunity to protect our future and regain control of an important resource.

Sincerely

DIANNE JACOB
Chairwoman, Second District

Serving the Indian reservations of:
Barona
Campo
Cosmit
Ewiiapaayp
Inaja
Jamul
La Posta
Manzanita
Mesa Grande
Santa Ysabel
Sycuan
Viejas

DJ: mp/ac



Mayor and City Council

October 6, 2014

Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle:

I am pleased to inform you that the El Cajon City Council unanimously supports Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project.

The water re-purification process is a safe, cost-effective, locally controlled, and environmentally responsible water source option. Regionally, water providers will be able to significantly reduce the reliance on imported water currently traveling from hundreds of miles away. As a result, this project offers residents of El Cajon and neighboring communities the opportunity to protect their future and regain control of an important resource.

The City of El Cajon applauds Padre Dam Municipal Water District's work to diversify water supplies and increase its independence and control over the local water sources.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Wells".

Bill Wells
Mayor
City of El Cajon



...Dedicated to Community Service

2554 SWEETWATER SPRINGS BOULEVARD, SPRING VALLEY, CALIFORNIA 91978-2004
TELEPHONE: 670-2222, AREA CODE 619 www.otaywater.gov

January 26, 2015

Allen Carlisle, CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle:

On behalf of the Otay Water District, please accept this letter in support of the Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project. Water re-purification is a safe, cost-effective and environmentally responsible source of new water for the region.

Padre Dam and Otay each have long histories in water recycling that go back more than 50 years. Both of our agencies are viewed as leaders in water recycling as well as strong proponents of water reuse. Long ago we each recognized that with limited local resources, water reuse and recycling can significantly reduce our reliance on water imported from hundreds of miles away. Recycling and reusing water is also a drought proof and locally controlled supply of water.

We applaud Padre Dam Municipal Water District both for your commitment to water recycling and for a demonstration project that will further diversify local water supplies. With the state of California likely entering its fourth year of extremely dry conditions, water re-purification will create another drought proof supply of water for the region and further our goal of increasing water independence.

We wish your organization great success with this new project.

Sincerely,

Jose Lopez, President
Otay Water District

cc: Board of Directors
Mark Watton, General Manager



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

California Regional Water Quality Control Board, San Diego Region

October 9, 2014

In Reply Refer to:
33680:jchan

RECEIVED

OCT 21 2014

PADRE DAM MWD
ADMINISTRATION

Mr. Allen Carlisle
CEO / General Manager
Padre Dam Municipal Water District

Subject: Padre Dam Municipal Water District's Advanced Water Purification Project

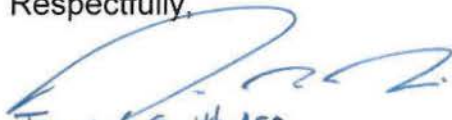
Mr. Carlisle:

As the Executive Officer of the California Regional Water Quality Control Board, San Diego Region, I am writing to express this agency's support for Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project. The ongoing, devastating statewide drought underscores the urgent need for forward looking projects like this one to build a sustainable local water supply for the San Diego Region.

The San Diego Water Board's Practical Vision recognizes that to create a sustainable local water supply, we must use groundwater and surface water in an environmentally responsible way, create sources of fresh water through innovative projects, and conserve water to reduce demand. At a statewide level, the Governor has called upon Californians to increase the use of recycled water over 2002 levels by at least one million acre-feet per year by 2020, and by at least two million acre-feet per year by 2030. The Advanced Water Purification Project implements the Practical Vision for a sustainable local water supply and responds to the Governor's call to increase recycled water use in a significant way.

Padre Dam Municipal Water District is a recognized leader in innovative wastewater treatment and recycled water projects. The San Diego Water Board supports your continuing efforts to decrease the Region's reliance on imported water. We look forward to working closely with your agency as you develop the Advanced Water Purification Project from demonstration to implementation.

Respectfully,


for James G. Smith, AEO
David W. Gibson

DWG:jac



Duncan Hunter
U.S. House of Representatives
50th District, California

October 22, 2014

Mr. Allen Carlisle
CEO / General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle:

I am writing to indicate my full support for Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project and to congratulate you and the District Board of Directors for pursuing an innovative alternative that will serve as an additional water resource for our community. As you know, it is imperative that we investigate the feasibility of every option available regarding effective water management and wastewater treatment is a reliable, safe approach that has the potential to provide water resource and economic dividends well into our future.

It is my understanding that this project will test the feasibility of creating a new source of approximately 2,000 to 3,000 acre feet per year of purified water for East San Diego County, thereby reducing our dependency on outside sources of imported water. Additionally, by utilizing Advanced Water Treatment technologies, the water produced through this project will meet or exceed state regulations and will be locally controlled, drought-proof and environmentally sound.

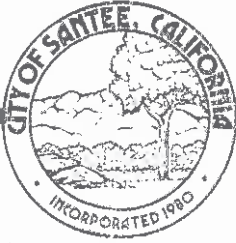
California's current drought conditions, coupled with San Diego County's historical reliance on imported water, mandate that we create a water management portfolio that utilizes conservation, desalination, reservoir and aquifer storage, and reclamation projects. I am pleased to provide my support for this important project and remain available to assist with any federal assistance the District may need to ensure it is fully implemented.

With best wishes.

Sincerely,

A handwritten signature in blue ink, appearing to read "Duncan Hunter".

Duncan Hunter
Member of Congress



RANDY VOEPEL

MAYOR

COMMITTEES:

Disaster Council,
United San Diego
Emergency Services Organization
City Selection Committee
Community Leaders Forum
MCAS Miramar
County Service Area (CSA)
69 (Paramedics)
East County Economic
Development Council
Heartland Communications
Facility Commission
Heartland Fire Training Facility
Authority Commission
Library Committee
League of California Cities
San Diego River Park Coalition

August 8, 2014

Allen Carlisle
CEO/ General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway

Dear Mr. Carlisle,

As Mayor of Santee, I support Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project. The economic benefits of having a reliable source of water are vital to the communities in this region.

This project will considerably reduce reliance on imported water which is currently imported from hundreds of miles away at significant cost. San Diego East County communities will have the opportunity to protect the future and regain control of an important resource. I am proud of Padre Dam's work to diversify water supplies and increase independence and control of over our own local water source.

Respectfully,


RANDY VOEPEL
Mayor



October 16, 2014

RECEIVED

OCT 21 2014

PADRE DAM MWD
ADMINISTRATION

Allen Carlisle
CEO / General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Re: Letter of Support from the Metro Wastewater JPA for Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project

Dear Mr. Carlisle,

Padre Dam's proposal to diversify water supplies and increase its independence and control of over local water sources could lead to reductions on San Diego County's reliance of imported water from hundreds of miles away. The Metro Wastewater JPA supports Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project for these reasons:

1. The economic benefits of having a reliable source of water such as that proposed by this project will create a drought-resistant water supply;
2. The water re-purification process is a safe, cost-effective, locally controlled and environmentally responsible water source option; and
3. This project offers Metro JPA members in the San Diego's East County the opportunity to control an important resource which, if implemented, also benefits the JPA and the City of San Diego.

The JPA has worked cooperatively for several years with our participating agencies, including Padre Dam, on plans to offload wastewater flows from the Point Loma Wastewater Treatment Plant and potentially to lead to downsizing other regional facilities. The JPA is pleased to support Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project.

Respectfully,

Cheryl Cox
Mayor, City of Chula Vista
Chair, Metro Wastewater JPA

The Joint Powers Authority Proactively Addressing Regional Wastewater Issues



Cody J. Martinez
Chairman

January 15, 2019

Joshua Muse
Vice Chairman

Pilar T.A. Pettiford
Secretary

LaShunna Davidson
Treasurer

Shu Brown
Council Member

Alanna Sandoval
Councilwoman

Brianna Sandoval
Councilwoman

Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle,

On behalf of the Sycuan Band of the Kumeyaay Nation, I want to thank you for your dedicated leadership and express our support of the East County Advanced Water Purification Program.

This important regional program demonstrates the value of collaboration and extensive planning demonstrated by the East County AWP partners led by Padre Dam Municipal Water District, the County of San Diego, City of El Cajon, Helix Water District and embraced by so many regional community leaders.

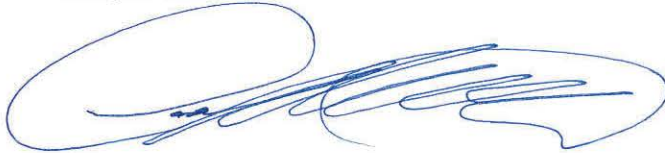
As we have said in the past, the Sycuan Band of the Kumeyaay Nation measure ourselves by our impact on the community. Likewise, we measure the East County AWP by its immeasurable impact on the community – delivering a reliable, clean and sustainable source of water, our greatest natural resource.

The Sycuan Band of the Kumeyaay Nation is pleased to extend its full support for the East County AWP. We appreciate that this program will create a new source of water that can be available to our tribal community.

We value the independence that this important project affords to East County communities, and we support the program partner efforts to create a local, drought-proof water supply that is also environmentally friendly. This commitment to long-term sustainability is crucial as we plan for the continued success and growth of all communities in East County San Diego, including Sycuan.

The grant funding that has been secured is impressive and the collaborative and transparent approach of each program partner is appreciated and will serve our communities well in a safe, prosperous and sustainable future.

Respectfully,

A handwritten signature in blue ink, consisting of a large, loopy initial 'C' followed by several horizontal strokes and a final flourish.

Cody J. Martinez
Chairman



September 14, 2016

Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle:

The San Diego Integrated Regional Water Management (IRWM) Program strongly supports the East County Advanced Water Purification (AWP) Program and its goal to offer significant benefits to the San Diego Region by producing a local, reliable, drought-proof water supply that reduces reliance on imported water.

We further support the East County AWP Program's aim to increase the production and use of recycled water, both potable and non-potable, in East San Diego County. Residents, businesses and all community members will benefit from the Program, which is designed to help reduce regional capital investment in the City of San Diego's Metropolitan Wastewater System and Point Loma Wastewater Treatment Plan by offloading flows to the Metro System.

The benefits expected from the East County AWP Program strongly support the regional goal of expanding and diversifying the overall water supply portfolio.

The San Diego IRWM Program applauds Padre Dam Municipal Water District's diligent efforts to obtain grant funding to help ensure the success of this important water resource program for East County. The IRWM Program has supported development of the AWP Program with two grants, one for \$3 million in 2008 and one for \$6 million in 2015. In addition to this funding, Padre Dam recently secured an additional \$4.5 million in federal funds and continues to seek additional program grants.

The District's work to diversify water supplies and increase the region's independence and control of its own local water sources is admirable and should be fully realized via the successful construction and implementation of the East County AWP Program.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Stadler". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mark Stadler
San Diego IRWM Program Manager
Principal Water Resources Specialist
San Diego County Water Authority



June 2, 2016

American Society of Plumbing Engineers, San Diego Chapter

B OCOM

Building Industry Association of San Diego

Building Owners and Managers Association, San Diego Chapter

California Restaurant Association

Citizens Coordinate for Century 3

Coastal Environmental Rights Foundation

CONNECT

Empower San Diego

Endangered Habitats League

Environmental Health Coalition

Equinox Center

Friends of Infrastructure

Industrial Environmental Association

National Association of Industrial and Office Properties, San Diego Chapter

San Diego and Imperial Counties Labor Council

San Diego Audubon Society

San Diego Business Leadership Alliance

San Diego Regional Economic Development Corporation

San Diego Coastkeeper

San Diego County Apartment Assoc.

San Diego County Taxpayers Assoc.

San Diego Regional Chamber of Commerce

San Diego River Partnership Foundation

Surfrider Foundation San Diego Chapter

Sustainability Alliance of Southern California

WaterReuse - San Diego Chapter

Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Re: Endorsement of Padre Dam’s Advanced Water Purification Project

Dear Mr. Carlisle:

The Water Reliability Coalition (WRC) is a broad-based group of 27 environmental, consumer, business, labor and technical organizations that have come together to support water reuse as a strategy to develop a safe, reliable, sustainable and cost-effective local water supply. The WRC is proud to offer its support for the East County Advanced Water Purification Program (AWP). The AWP will provide safe, locally controlled, drought-proof water supply to thousands of East County residents and will enhance the San Diego Region’s water supply reliability.

Currently, the Padre Dam Municipal Water District imports 100% of its drinking water supply from the Sacramento Bay Delta and the Colorado River. Conservation, water efficiency and locally controlled water supplies are increasingly necessary and critically important with prolonged and more frequent droughts.

By the completion of the project’s first phase in 2020, the AWP will supply approximately 30% of Padre Dam’s drinkable water supply, providing a sustainable supply of water for up to 6,000 homes a year. Expansion of the program during phase two, which will be completed by 2025, will increase the amount of water purified to over 10 million gallons each day: enough to serve 26,000 homes a year. The WRC applauds the scope of this project, which is creating a new locally sourced, environmentally friendly supply of water in East County San Diego.

The WRC wholeheartedly endorses the East County Advanced Water Purification Project, and we applaud Padre Dam for its strong leadership advancing the project.

Sincerely,

Sean Karafin
Water Reliability Coalition Co-Chair

Matt O'Malley
Water Reliability Coalition Co-Chair



VICE CHAIR
OF THE FOLLOWING
COMMITTEES
PUBLIC SAFETY
JUDICIARY
ELECTIONS & CONSTITUTIONAL
AMENDMENTS

Senate
California Legislature
JOEL ANDERSON
SENATOR
THIRTY-SIXTH SENATE DISTRICT

MEMBER
OF THE FOLLOWING
COMMITTEE
BUDGET & FISCAL REVIEW

MEMBER
OF THE FOLLOWING
SUBCOMMITTEE
BUDGET & FISCAL REVIEW
SUBCOMMITTEE #5 ON
CORRECTIONS, PUBLIC SAFETY
& THE JUDICIARY



Allen Carlisle
CEO / General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle,

Congratulations on the groundbreaking of Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project. This project offers San Diego East County communities the opportunity to learn about advanced water purification processes and how the project can potentially augment their water supply without any impact to their water rates.

It is important to explore ways to reduce our reliance on imported water, and Padre Dam is to be commended for working to diversify water supplies and increase independence and control of over local water sources.

I want to wish you continued success with the AWP Demonstration Project, and please let me know if there is ever anything I can do to be of assistance.

Sincerely,

A handwritten signature in blue ink that reads "Joel Anderson".

Joel Anderson
Senator, District 36

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0071
(916) 319-2071
FAX (916) 319-2171

DISTRICT OFFICE
10152 MISSION GORGE ROAD
SANTEE, CA 92071-3812
(619) 441-2322
FAX (619) 441-2327

www.asm.ca.gov/jones
Assemblymember.Jones@assembly.ca.gov

Assembly California Legislature



BRIAN W. JONES
ASSEMBLYMAN, SEVENTY-FIRST DISTRICT

COMMITTEES
VICE CHAIR: BUSINESS, PROFESSIONS
AND CONSUMER PROTECTION
GOVERNMENTAL ORGANIZATION
UTILITIES AND COMMERCE
ASSEMBLY LEGISLATIVE ETHICS

October 6, 2014

Mr. Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle,

As the elected representative of California's 71st Assembly District, I fully support Padre Dam Municipal Water District's Advanced Water Purification Demonstration Project. This project would offer many of the East County communities that I represent a water purification process that is safe, cost-effective, locally controlled. This would also be an environmentally responsible water source option that would be tested daily to ensure it meets the public health objectives for the California Public Health Department.

This project shows the foresight of Padre Dam by diversifying our water supplies and creating an independence and control over our own local water source, thereby reducing our current state of complete dependence on imported water. There are also economic benefits of having a reliable source of water, as this project would create a drought-resistant water supply for the East County, while not impacting the water rates of the residents.

Water supply is an issue that is crucial not only in my district but throughout the state of California and I commend Padre Dam for their foresight and commitment to working with all stakeholders, such as Helix Water District, the City of El Cajon and the County of San Diego to better serve the 100,000 plus residents in East County.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brian W. Jones".

BRIAN W. JONES
Assemblyman, 71st District

STATE CAPITOL, ROOM 4009
P.O. BOX 942849
SACRAMENTO, CA 94249-0071
(916) 319-2071
FAX (916) 319-2171

DISTRICT OFFICE
8760 CUYAMACA STREET, SUITE 201
SANTEE, CA 92071
(619) 258-7737
FAX (619) 258-7739

E-MAIL

Assemblymember.Voepel@assembly.ca.gov

Assembly
California Legislature



RANDY VOEPEL
ASSEMBLYMEMBER, SEVENTY-FIRST DISTRICT

COMMITTEES
VICE CHAIR: AGING AND LONG-TERM CARE
VICE CHAIR: PUBLIC EMPLOYMENT AND RETIREMENT
VICE CHAIR: VETERANS AFFAIRS
INSURANCE
LOCAL GOVERNMENT

JOINT LEGISLATIVE AUDIT

RECEIVED

FEB 13 2019

**PADRE DAM MWD
ADMINISTRATION**

February 4, 2019

Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle and Padre Dam Board of Directors:

I am writing, as the proud elected representative of California's 71st Assembly District, to express my strong support for the East County Advanced Water Purification Program (Program), led by Padre Dam Municipal Water District with its program partners the County of San Diego, City of El Cajon and Helix Water District. I fully support the East County Advanced Water Purification Program's continued efforts to make this Program one of the first approved Surface Water Augmentation projects in California. This programs serves as an innovative example to others in California to achieve State recycled water goals.

This Program is a great example of innovation and collaboration by demonstrating how multiple agencies can work together to provide the best services for our communities and ensures future water supply reliability. I understand the Program has received State Revolving Fund money. I strongly support any additional State funding to further make this East San Diego County Program affordable for our ratepayers.

My commitment to the success of this important water resources infrastructure project continues from my role as Mayor of the City of Santee. As a representative of the Santee community, where the new treatment plant would reside, I wrote to you in 2014 as Mayor to express that "the economic benefits of having a reliable source of water are vital to the communities in this region."

This Program's efforts to reduce our region's reliance on imported water from hundreds of miles away, and to produce up to 30% of East County's current drinking water demands, are helping to secure our financial independence and modernize our local water resource systems.

Thank you for your collaborative leadership in working with key stakeholders and program partners, to secure extensive grants and favorable funding, as well as maintaining transparency and community involvement. Please do not hesitate to reach out for any assistance that I can continue to provide.

Respectfully,

A large, stylized handwritten signature in blue ink, reading "Randy Voepel".

RANDY VOEPEL
Assemblyman, 71st District

TO File

cc: Melissa



DIANNE JACOB
CHAIRWOMAN SECOND DISTRICT
SAN DIEGO COUNTY BOARD OF SUPERVISORS

RECEIVED

FEB 05 2018

PADRE DAM MWD
ADMINISTRATION

Serving the cities of:
El Cajon
La Mesa
Lemon Grove
Poway
Santee

Serving the communities of:
Agua Caliente
Alhambra
Alpine
Barrett

Blossom Valley
Bostona
Boulevard
Campo
Canebrake
Casa de Oro
College Area
Crest
Cuyamaca
Dehesa
Del Cerro
Descanso
Dulzura

Eucalyptus Hills
Fernbrook
Flinn Springs
Granite Hills
Grantville
Gnatay
Harbison Canyon
Jacumba
Jamil
Johnstown
Julian
Lake Morena
Lakeside
Mount Helix
Pine Hills
Pine Valley
Potrero
Ramona

Rancho San Diego
Rolando
San Carlos
San Pasqual
Santa Ysabel
Shelter Valley
Spring Valley
Tecate
Tierra del Sol
Vallecitos
Wynola

Serving the Indian reservations of:
Barona
Campo
Cosmit
Ewiiaapaayp
Inaja
Jamil
La Posta
Manzanita
Mesa Grande
Santa Ysabel
Sycuan
Viejas

January 30, 2018

Allen Carlisle
CEO / General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle:

On behalf of the County of San Diego, it is my pleasure to commend the Padre Dam Municipal Water District's leadership for the advancement of the East County Advanced Water Purification Program. I endorse this effort, which is creating a local, sustainable and drought-proof water supply.

At present, plans for this state-of-the-art technology are on track to meet up to 30% of East County's current drinking water demands by 2025, and to assist with rising wastewater treatment costs. Independently producing drinking water is an opportunity for local control of a valuable resource.

I commend Padre Dam for its prioritization of environmental responsibility and for securing approximately \$29 million in grant funding for the project. Plans are accelerating quickly with a collaborative partnership between the County, Padre Dam, the City of El Cajon and Helix Water District.

The County is proud to contribute financial resources and staff expertise, in addition to further solidifying its partnership agreement for this program.

Sincerely,

DIANNE JACOB
Supervisor, Second District

DJ:td

California State Senate

SENATOR
BRIAN W. JONES
THIRTY-EIGHTH SENATE DISTRICT

RECEIVED

FEB 8 2019

PADRE DAM MWD
ADMINISTRATION

February 5, 2019



Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle and Padre Dam Board of Directors:

As the elected representative for California's 38th Senate District, it is my pleasure to reiterate my strong support and commitment to the East County Advanced Water Purification Program (Program). I fully support Padre Dam Municipal Water District and the East County Advanced Water Purification Program's continued efforts to make this Program one of the first approved Surface Water Augmentation projects in California. This programs serves as an innovative example to others in California to achieve State recycled water goals.

Water supply reliability is an issue that is crucial not only in my district but throughout the state of California. This Program is a great example of innovation and collaboration by demonstrating how multiple agencies can work together to provide the best services for our communities and ensures future water supply reliability. I understand the Program has received State Revolving Fund money. I strongly support any additional State funding to further make this East San Diego County Program affordable for our ratepayers.

I commended you and Padre Dam for your "foresight and commitment to working with all stakeholders" and I am proud to highlight that your leadership and progress has only increased over the years to navigate a complex program alongside your East County AWP partners: the County of San Diego, City of El Cajon and Helix Water District.

Water supply challenges have increased in severity as our region has experienced increased periods of drought and projected increases in the cost of importing water. The East County AWP goal of delivering a reliable, clean, drought-resistant and sustainable source of water will protect the health, independence and economic prosperity of our east county communities. The grants and low interest loan that you have secured for this important program are impressive, as is the collaborative and transparent approach that all program partners have sustained, while engaging thousands of community members who have toured the Visitor's Center and Demonstration Facility.

Thank you again for your leadership and know that I am here to assist in the completion and successful operation of this important infrastructure asset for our region.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. Jones", written over a horizontal line.

Brian W. Jones
Senator, District 38

VIEJAS

TRIBAL GOVERNMENT

P.O. Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

John A. Christman, Chairman
Victor E. Woods, Vice-Chairman
Rene Curo, Tribal Secretary
Samuel Q. Brown, Tribal Treasurer
Adrian M. Brown, Councilman
Gabriel T. TeSam, Jr., Councilman
Kevin M. Carrizosa, Councilman

RECEIVED

JAN 28 2019

PADRE DAM MWD
ADMINISTRATION

Phone: 6194453810
Fax: 6194455337
viejas.com

January 23, 2019

Allen Carlisle
CEO/General Manager
Padre Dam Municipal Water District
9300 Fanita Parkway
Santee, CA 92071

Dear Mr. Carlisle

This letter demonstrates the Viejas Band of Kumeyaay Indians' support of the East County Advanced Water Purification Program led by Padre Dam Municipal Water District, the County of San Diego, City of El Cajon, Helix Water District and embraced by so many regional community leaders.

As the original native inhabitants of San Diego County, the Viejas Band has always understood the value of one of the most precious resources on this planet - water.

Water has always been the source of life, particularly in this arid land that our people have walked on for over 10,000 years. Our legacy of environmental stewardship and tradition of respect for natural resources is reflected in this water purification program that applies modern technology to mimic nature's timeless process for cleaning and recycling wastewater.

On behalf of the Viejas Tribal Council, I am pleased to offer our full support of your efforts to protect and enhance our local water supplies. We appreciate that this program will create a new source of water that can be available to our tribal community in the future.

We also commend your diligent planning, preparation and implementation of this significant program that responsibly addresses the effects of this historic drought. By reducing the current 100% reliance on imported water, we can all plan with more certainty for the future. We also protect future generations by assuring that each step of this program is environmentally responsible and applies proven and tested treatment methods that protect public health.

As your neighbor in the San Diego East County, we welcome the enhancement of water supply resources that will sustain and protect the people that cherish this land for their homes, businesses and recreation. By diversifying our local water supplies in ways that respect the environment, we all benefit and will be prepared for the future.

Sincerely,



John A. Christman, Chairman

Appendix B – Authorizing Resolution

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RESOLUTION 2020-05

**RESOLUTION OF THE BOARD OF DIRECTORS OF
PADRE DAM MUNICIPAL WATER DISTRICT
AUTHORIZING APPLICATION FOR WATERSMART TITLE XVI
WATER RECLAMATION AND REUSE PROJECTS GRANT**

WHEREAS, Padre Dam Municipal Water District (Padre Dam) submitted and was awarded funding for the Padre Dam Water Recycling Facilities – Phase I Expansion Grant Application in Fiscal Year 2016, Fiscal Year 2017, Fiscal Year 2018, and Fiscal Year 2019 under the WaterSMART: Title XVI Water Reclamation and Reuse Program; and

WHEREAS, the United States Bureau of Reclamation (Reclamation) is soliciting applications for authorized projects for WaterSMART: Title XVI Congressionally Authorized Water Reclamation and Reuse Projects per Funding Opportunity Announcement No. BOR-DO-20-F008; and

WHEREAS, Padre Dam is preparing a grant application under this Program for the Project with an application due date of February 19, 2020; and

WHEREAS, Reclamation has directed applicants to include in its application an official resolution adopted by the applicant's board of directors or governing body verifying 1) the identity of the official with legal authority to enter into an agreement, 2) the board of directors, governing body, or appropriate official who has reviewed and supports the application submitted, 3) the capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan, and 4) that the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Padre Dam Municipal Water District as follows:

1. Padre Dam is authorized to submit application to Reclamation to obtain a Title XVI Water Reclamation and Reuse Program Funding per Funding opportunity Announcement No. BOR-DO-20-F008; and
2. Padre Dam has legal authority to enter into an agreement with Reclamation to receive a grant; and
3. The Board of Directors has reviewed and supports the application that will be submitted; and
4. Padre Dam is able to provide the minimum 75 percent funding match specified in the funding plan for the application; and
5. Padre Dam's General Manager, or his designee, is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with Reclamation in association with this application process. Padre Dam will work with Reclamation to meet established deadlines required for entering into a cooperative agreement to obtain the aforementioned grant funding.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Padre Dam Municipal Water District held on February 5, 2020, by the following vote:

AYES: Caires, Peasley, Pommering, Scalzitti and Wilson
NOES: None
ABSENT: None
ABSTAIN: None

ATTEST:


Board Secretary


Board President



Appendix C – Letters of Commitment

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DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791



January 13, 2016

Mr. Mark Stadler
IRWM Program Manger
San Diego County Water Authority
4677 Overland Avenue
San Diego, California 92123

**Commitment Letter - 2015 Proposition 84 Integrated Regional Water Management
(IRWM) Implementation Grant Award**

Dear Mr. Stadler:

We are pleased to inform you that the proposal, San Diego 2015 IRWM Implementation Grant Proposal, filed by San Diego County Water Authority has been awarded funding by the Department of Water Resources (DWR). This letter serves as DWR's conditional commitment of \$31,131,415 in Proposition 84 grant funding for the proposal. This award is conditioned upon the execution of a Grant Agreement between DWR and your agency. A copy of the Grant Agreement template is available at the following website: http://www.water.ca.gov/irwm/grants/resources_contracttemp.cfm

The conditions that must be met before DWR will enter into a Grant Agreement with your agency and additional requirements that must be addressed to maintain eligibility and receive grant funds are listed in Attachment 1. Your timely attention to these requirements is very critical to execute the Grant Agreement. Failure to meet these conditions and requirements, in a timely manner, may result in DWR revoking the grant award.

Please return the requested information within the time periods listed in Attachment 1, to Melissa Sparks at:

Department of Water Resources
Post Office Box 942836
Sacramento, California 94236-0001

If you have any questions, please contact Melissa Sparks at (916) 651-9221 or Melissa.Sparks@water.ca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tracie L. Billington".

Tracie L. Billington, P.E., Chief
Financial Assistance Branch
Division of Integrated Regional Water Management

Attachment

Attachment 1 Grant Agreement Execution Conditions and Additional Requirements

The following execution conditions must be met before DWR will execute the Grant Agreement. The Additional requirements must be met on an ongoing basis by the Grantee to maintain grant funding eligibility and must be met prior to disbursement of grant funds.

Execution Conditions:

- Within 14 calendar days of the date of this letter, submit a letter or send an e-mail confirming your agency as the Grantee to accept the grant award in the amount of \$31,131,415.
- Within 60 calendar days of the date of this letter:
 - Submit documentation to demonstrate that each of the Project Proponent(s) has available sources of sufficient funds to complete the grant-funded project(s). Specifically, fill out and submit the "Financial Statement Summary Form" available at the following link:
http://www.water.ca.gov/irwm/grants/resources_forms/FinancialStatementSummaryForm.xls along with copies of the most recent three years of audited financial statements (preferably electronic) including the following items:
 - Balance sheets, statements of sources of income and uses of funds, a summary description of existing debts including bonds, and the most recent annual budget. Submit separate details for the water enterprise fund, if applicable to an agency or organization.
 - A list of all cash reserves, restricted and unrestricted, and any planned uses of those reserves.
 - Any loans required for project funding and a description of the repayment method of any such loans.
 - Submit the list of projects and any changes to the work plan, budget, or schedule since the grant application was submitted. Any proposed changes should be submitted as track changes to the original document (work plan, budget, or schedule), and an explanation of the changes provided. Changes will only be considered acceptable by DWR if the project maintains or increases the level of quality and benefits as compared to the original application, unless the grant award amount is less than what was requested in the grant application. Grantee must maintain the projects and benefits for the disadvantaged communities at a level that is at least proportional to the grant award percentage of total grant request.
 - Grantee must complete an Environmental Information Form for each individual project and submit to DWR. Electronic fillable form is available at the following link:
http://www.water.ca.gov/irwm/grants/resourceslinks/IRWM_CEQA EIF.pdf

Additional Requirement to Maintain Eligibility for Grant Reimbursements:

Grantee must meet, as applicable, the following ongoing requirement(s) to remain eligible to receive State funds:

- Grantee must demonstrate compliance with all applicable requirements of the California Environmental Quality Act (CEQA) and, if applicable, the National Environmental Policy Act (NEPA). DWR is the responsible agency in complying with CEQA for each individual project included in the grant agreement. Grantee must submit documents that satisfy the CEQA and NEPA process as well as any mitigation agreements, and environmental permits. Reimbursement of grant expenses related to construction projects is subject to the DWR's decision to concur or not concur with the Grantee's final CEQA document.
- All local project sponsors that are Urban Water Suppliers must:

- Maintain compliance with water metering requirements (CWC §525 *et seq.*).
 - Meet the Urban Water Management Planning (UWMP) Act requirements (CWC §10610 - 10656) and requirements CWC §10608.16 -10608.44.
 - Maintain compliance with the UWMP Act and Sustainable Water Use and Demand Reduction, Part 2.55 of Division 6 (CWC§10608 *et. Seq.*)
 - All local project sponsors that are Agricultural Water Suppliers must:
 - Maintain compliance with water conservation requirements outlined in Part 2.55 (commencing with §10608) of Division 6 of the CWC.
 - Projects with potential groundwater impacts must demonstrate compliance with the groundwater compliance options set forth on pages 14 and 15 of the IRWM Program Guidelines, dated May 2015.
 - Grantee or local project sponsors that have been designated as monitoring entities under the California Statewide Groundwater Elevation Monitoring (CASGEM) Program must maintain reporting compliance, as required by CWC§ 10920 and the CASGEM Program.
 - Surface water diverters receiving grant funding must comply with surface water diversion reporting requirements outlined in Part 5.1 (commencing with §5100) of Division 2 of the CWC. If a surface water diverter is not current with its surface water diversion reporting, then explain why the reports are not current and provide an estimated submittal date. DWR may withhold execution of the grant agreement or disbursing grant funds until reporting is current.
-

	Integrated Regional Water Management - Prop 84, Imp, Final Round		31,131,415
1	Regional Drought Resiliency Program	San Diego County Water Authority	3,800,000
2	Conservation Home Makeover in the Chollas Creek Watershed	Groundwork San Diego	542,000
3	City of San Diego Water Conservation Enhancement Partnership Project	City of San Diego	866,001
4	Ms. Smarty-Plants Grows Water-Wise Schools	Water Conservation Garden	652,000
5	Rural Disadvantaged Community Partnership Program, Phase III	Rural Community Assistance Corporation	3,000,000
6	Integrated Water Resource Solutions for the Carlsbad Watershed	San Elijo Joint Powers Authority	2,500,000
7	UC San Diego Water Conservation and Watershed Protection	University of California San Diego	1,435,000
8	City of Escondido MFRO Facility for Agriculture	City of Escondido	2,000,000
9	Padre Dam Advanced Water Treatment, Phase I Expansion	Padre Dam Municipal Water District	6,000,000
10	Safari Park Drought Response and Outreach	Zoological Society of San Diego	2,900,000
11	San Diego River Healthy Headwaters Restoration	USDA Forest Services	2,116,000
12	Sweetwater Reservoir Wetlands Habitat Recovery	Sweetwater Authority	1,500,000
13	Hodges Reservoir Natural Treatment System	City of San Diego	2,886,472
14	Grant Administration	San Diego County Water Authority	933,942

FY 2016 Authorized Title XVI Project Funding

**City of Corona Department of Water and Power
City of Corona Water Recycling and Reuse Project
Corona Comprehensive Reclaimed Water Conversion – Phase 1
Federal Funding: \$4,000,000**

The City of Corona, California, is converting potable water irrigation to reclaimed water at more than 12 parks, schools, common areas, landscaped medians, a municipal golf course, and an industrial park as part of Phase 1 of the Corona Comprehensive Reclaimed Water Conversion Project. Upon completion, the project will make 15,376 acre-feet of reclaimed water available annually. Funding will be used for project planning and design, environmental compliance, and installation of 24,100 linear feet of reclaimed water delivery pipelines. The project will enable the City to reduce imported water purchases and create a sustainable local water supply.

**City of San Diego
San Diego Area Water Reclamation Program
Pure Water San Diego Program
Federal Funding: \$5,000,000**

The Pure Water Program is a phased, multi-year program that will ultimately make available 93,000 acre-feet of water per year, or approximately 30% of the City of San Diego's water supply, by 2035. The first two phases of the Pure Water San Diego Program are expected to produce more than 33,600 acre-feet of water suitable for potable reuse. Funding will aid in the development of environmental documentation and construction document preparation for the project. Through the Pure Water Program, the City expects to make a new sustainable source of potable water available for San Diego by increasing the amount of reclaimed water, and thereby reducing the amount of wastewater that is released into the ocean.

**Eastern Municipal Water District
Eastern Municipal Water District Recycled Water System
Recycled Water System Pressurization and Expansion Project
Federal Funding: \$1,222,164**

Eastern Municipal Water District's Recycled Water System Pressurization and Expansion Project will enable the transition to a recycled water system to help meet the growing demands of the area. The project is expected to result in the direct use of an additional 8,375 acre-feet per year of recycled water. The project includes design and construction of recycled water tanks, recycled water storage facilities, pumping facilities, and distribution pipelines. As part of the broader project, the District is expanding the existing Temecula Valley Regional Water Reclamation Facility, including the Tertiary Effluent Pump Station to increase facility capacity by 5 million gallons per day. The District is also constructing a recycled water pipeline in order to provide increased conveyance capacity and reliability to the system. The project will help reduce reliance on imported water from the Colorado River and Sacramento-San Joaquin Bay-Delta.

**Inland Empire Utilities Agency
Lower Chino Dairy Area Desalination and Reclamation Project
Chino Desalter Phase 3 Expansion Project
Federal Funding: \$7,200,000**

Inland Empire Utilities Agency, in association with the Chino Basin Desalter Authority, is expanding the existing Chino II Desalter to make an additional 10,600 acre-feet per year of treated potable water available. The project includes a raw water system including wells and pipelines, treatment at interconnected desalters, disposal of brine, and distribution of treated water through pipelines and pump stations. This phase of the project is expected to enhance efficiency of the desalter system through increased recovery of brine that is currently discharged to the Pacific Ocean. Work includes implementation of a 2.75 million gallon per day pellet softening, clarification and secondary reverse osmosis treatment system at the Chino II Desalter facility. The project will help the Inland Empire Utilities Agency ensure compliance with environmental monitoring and mitigation requirements related to groundwater pumping. The water produced by this project will replace water that would otherwise be imported from the Colorado River and/or Sacramento-San Joaquin Bay-Delta.

**Padre Dam Municipal Water District
San Diego Area Water Reclamation Program
Padre Dam Water Recycling Facilities – Phase I Expansion
Federal Funding: \$4,500,000**

Padre Dam Municipal Water District is expanding its recycled water production and implementing the first phase of potable water reuse in eastern San Diego County. Funding will be used to implement the District's Phase I Water Recycling Project, which includes expansion of the Ray Stoyer Water Reclamation Facility and construction of a new advanced water purification facility, potable reuse conveyance pipelines, groundwater injection and recovery wells, and a biosolids digestion facility to process sludge and offset energy demands of the project. The project will produce an additional 1,000 acre-feet per year of tertiary recycled water and 2,450 acre-feet per year of potable water, allowing the District to offset a total of 3,450 acre-feet per year of imported water. In addition to the benefits realized through offsetting imported water demands, the project will divert wastewater flows that would otherwise be treated at the Point Loma Wastewater Treatment Plant and discharged to the Pacific Ocean.

**Sonoma County Water Agency
North Bay Water Reuse Program
Federal Funding: \$4,706,150**

The North Bay Water Reuse Program in Santa Rosa, California, will provide recycled water for agricultural, environmental, industrial, and landscape uses throughout Marin, Sonoma, and Napa counties. Phase I of the Program includes upgrades of treatment processes and construction of storage, pipelines, and pump station facilities to distribute recycled water. Phase I provides 3,757 acre-feet per year of tertiary treated recycled water for irrigation demands and up to 1,700 acre-feet per year of tertiary treated recycled water for Napa Salt Marsh habitat restoration. The Program reduces both reliance on local and imported surface water and groundwater supplies, and reduces the amount of treated effluent released to San Pablo Bay and its tributaries.

Sweetwater Authority
San Diego Area Water Reclamation Program
Sweetwater Authority Water Reclamation Project
Federal Funding: \$3,700,000

The Sweetwater Authority Water Reclamation Project in California will expand the Richard A. Reynolds Groundwater Desalination Facility to provide a more secure, local water supply. The Authority completed Phase I of the construction of the Reynolds Facility in 2000. Phase II of the project will expand the Reynolds Facility from the current capacity of 3,600 acre-feet per year to a total capacity of 8,800 acre-feet per year of locally-produced desalinated groundwater annually. Water that is produced by the Reynolds Facility supplements potable water supplies, and directly offsets imported water from the Sacramento-San Joaquin Bay-Delta and Colorado River systems.

FY 2017 Authorized Title XVI Project Funding

California

Inland Empire Utilities Agency

Lower Chino Dairy Area Desalination and Reclamation Project

Chino Desalter Phase 3 Expansion Project

Federal Funding: \$5,199,536

Inland Empire Utilities Agency, in association with the Chino Basin Desalter Authority, is expanding the existing Chino II Desalter to make an additional 10,600 acre-feet per year of treated potable water available. The project, which serves western San Bernardino County, CA, includes a raw water system including wells and pipelines, treatment at interconnected desalters, disposal of brine, and distribution of treated water through pipelines and pump stations. This phase of the project is expected to enhance efficiency of the desalter system through increased recovery of brine that is currently discharged to the Pacific Ocean. Work includes implementation of a 2.75 million gallon per day pellet softening, clarification and secondary reverse osmosis treatment system at the Chino II Desalter facility. The project will help the Inland Empire Utilities Agency ensure compliance with environmental monitoring and mitigation requirements related to groundwater pumping. The water produced by this project will replace water that would otherwise be imported from the Colorado River and/or Sacramento-San Joaquin Bay-Delta.

Santa Clara Valley Water District

South Santa Clara County Recycled Water Project

Federal Funding: \$1,680,593

The South Santa Clara County Recycled Water Project in Gilroy, California will increase the availability of recycled water. Funding will be used to expand the recycled water distribution system in the southern portion of Santa Clara County. The project will provide recycled water to a broader market of commercial, industrial, irrigation, and agricultural users and will reduce reliance on imported water from the Sacramento-San Joaquin Bay-Delta.

City of San Diego

San Diego Area Water Reclamation Program

Pure Water San Diego Program

Federal Funding: \$4,200,000

The Pure Water Program is a phased, multi-year program that will ultimately make available 93,000 acre-feet of water per year, or approximately 30% of the City of San Diego's water supply, by 2035. The first two phases of the Pure Water San Diego Program are expected to produce more than 33,600 acre-feet of water suitable for potable reuse. Funding received will aid in the development of environmental documentation and construction document preparation for the Project. Through the Pure Water Program, the City expects to make a new sustainable source of potable water available for San Diego by increasing the amount of reclaimed water, and thereby reducing the amount of wastewater that is released into the ocean.

**Hi-Desert District Wastewater Collection and Reuse Facility (Yucca Valley)
Wastewater Treatment and Water Reclamation Project
Hi-Desert Water District
Federal Funding: \$4,000,000**

The Hi-Desert District Wastewater Collection and Reuse Facility in Yucca Valley, California, includes construction of a centralized wastewater treatment facility and collection system to eliminate septic systems within the District's service area. The project will provide tertiary treatment to percolate recycled water into the Warren Valley Groundwater Basin where water levels have been depleted. In addition to improving the quality of the groundwater basin, this Project will also reduce dependency on imported supplies and it will provide a more drought resistant supply. Upon completion, this project will result in the recharge of 1,804 acre-feet of recycled water annually to replace water that would otherwise be imported by the State Water Project from the Bay-Delta.

**Padre Dam Municipal Water District
San Diego Area Water Reclamation Program
Padre Dam Water Recycling Facilities – Phase I Expansion
Federal Funding: \$3,900,000**

Padre Dam Municipal Water District, in eastern San Diego County, is planning to implement the Phase I Water Recycling Project, which includes expansion of the Ray Stoyer Water Reclamation Facility, construction of a new advanced water purification facility, potable reuse conveyance pipelines, groundwater injection and recovery wells, and a biosolids digestion facility to process sludge and offset energy demands of the project. The project will produce an additional 1,000 AFY tertiary recycled water and create 2,450 AFY potable water, allowing Padre Dam MWD to offset a total of 3,450 AFY of imported water. Increasing local water supplies helps to increase supply reliability, reduce energy demands for water supply, improve groundwater and surface water quality, and protects against the effects of droughts and climate change. In addition to the benefits realized through offsetting imported water demands, the project will divert wastewater flows that would otherwise be sent to the City of San Diego's Metro System for treatment at the Point Loma Wastewater Treatment Plant and final discharge to the Pacific Ocean.

**City of Pasadena, Water and Power Department
Pasadena Non-Potable Water Project, Phase I
Federal Funding: \$2,000,000**

The Pasadena Non-Potable Water Project is a multi-phase project that will ultimately provide 4,000 acre-feet per year of non-potable water for irrigation, dust control, cooling, and groundwater recharge. Phase I will deliver approximately 700 acre-feet per year and will include construction of approximately five miles of pipeline, two reservoirs, and structures to convey recycled water from the City of Glendale to customers on the west side of Pasadena. The project will increase the reliability of the City's water supply and reduce reliance on imported from the Colorado River and Sacramento-San Joaquin Bay-Delta.

FY 2018 Authorized Title XVI Project Funding

**Padre Dam Municipal Water District
San Diego Area Water Reclamation Program
East County Advanced Water Purification Program
Federal Funding: \$7,392,351**

Padre Dam Municipal Water District is planning to implement the Phase I Water Recycling Project, which includes expansion of the Ray Stoyer Water Reclamation Facility, construction of a new advanced water purification facility, potable reuse conveyance pipelines, groundwater injection and recovery wells, and a biosolids digestion facility to offset energy demands of the project. The project will create 3,900 acre-feet per year of potable water by capturing wastewater flows that would otherwise be discharged to the ocean, allowing Padre Dam MWD to increase local water supplies.

**City of San Diego
San Diego Area Water Reclamation Program
Pure Water San Diego Program
Federal Funding: \$9,000,000**

The Pure Water Program is a phased, multi-year program that will ultimately make available 93,000 acre-feet of water per year, or approximately 30% of the City of San Diego's water supply, by 2035. The first two phases of the Pure Water San Diego Program are expected to produce 33,600 acre-feet of water suitable for potable reuse. Through the Pure Water Program, the City expects to make a new reliable source of potable water available for San Diego by increasing the amount of reclaimed water, while also reducing the amount of wastewater that is released into the ocean.

**Hi-Desert Water District
Hi-Desert Wastewater Reclamation Project
Wastewater Treatment and Reclamation Project
Federal Funding: \$8,668,5000**

The Hi-Desert District Wastewater Collection and Reuse Facility in Yucca Valley, California, includes construction of a centralized wastewater treatment facility and collection system to eliminate septic systems within the District's service area. The project will provide tertiary treatment to percolate recycled water into the Warren Valley Groundwater Basin where water levels have been depleted. In addition to improving the quality of the groundwater basin, this project will also provide a more drought resistant water supply. Upon completion, this project will result in the recharge of 1,804 acre-feet of recycled water annually.

City of Escondido
San Diego Area Water Reclamation Program
Membrane Filtration Reverse Osmosis (MFRO) Facility Project
Federal Funding: \$5,000,000

Located in northern San Diego County, the City of Escondido's proposed Membrane Filtration Reverse Osmosis (MFRO) Project will provide an additional water supply source to the City's agricultural users. The project will treat recycled water using membrane filtration and reverse osmosis technologies to produce high quality recycled water that is low in total dissolved solids (TDS) and chlorides. This water will be provided to agricultural growers who produce crops that require high quality water and are essential to the local economy. Upon completion, the project will produce up to 2,226 acre-feet of water annually.

Elsinore Valley Municipal Water District
Elsinore Valley Municipal Water District Projects
Horsethief Canyon Wastewater Reclamation Facility Expansion and Upgrade Project
Federal Funding: \$2,693,455

The Horsethief Canyon Wastewater Reclamation Facility Expansion and Upgrade project will increase recycled water production and help provide a reliable local water supply source for the Elsinore Valley Municipal Water District (EVMWD). The project will add a wastewater treatment process train to meet the growing recycled water demands in the Horsethief Canyon service area and will help meet wastewater discharge treatment requirements. An additional 396 acre-feet per year of reclaimed water will be made available through the proposed expansion.

City of San Jose
San Jose Area Water Reclamation and Reuse Program
South Bay Water Recycling Phase 1B Infrastructure Improvements
Federal Funding: \$2,545,471

The South Bay Water Recycling Program is a joint effort of local municipalities and water districts administered by the City of San Jose, California to provide recycled water throughout Santa Clara County. Recycled water that is delivered by the South Bay Water Recycling program will result in approximately 11,000 acre-feet per year of local, reliable, water supply. The Program delivers recycled water to more than 850 irrigation and industrial customers in the cities of San Jose, Milpitas, and Santa Clara.

FY 2019 Authorized Title XVI Project Funding

Padre Dam Municipal Water District, San Diego Area Water Reclamation Program, \$778,002.75

The Padre Dam Municipal Water District, which provides water, wastewater, recycled water and recreation services to 100,000 residents in the San Diego suburbs of Santee, El Cajon, Lakeside Flinn Springs, Harbison Canyon, Blossom Valley, Alpine, Dehesa and Crest—is implementing the Phase I Water Recycling Project. It includes the expansion of the Ray Stoyer Reclamation Facility, construction of a new advanced water purification facility, potable reuse conveyance pipelines, a product water pump station, and a biosolids digestion facility to offset energy demands of the project. It will create 3,900 acre-feet, or 127 million gallons, per year of potable water by capturing wastewater flows that would otherwise be discharged to the ocean.

City of San Diego, San Diego Area Water Reclamation Program, \$10,361,379

The San Diego Area Water Reclamation Program, part of the Pure Water Program, is a phased, multi-year program. By 2035 the program will make 93,000 acre-feet, or 30 billion gallons, of water available per year. This constitutes about 30% of the City of San Diego's water supply. This project will provide the city with a new reliable source of potable water and will reduce the amount of wastewater that is released into the ocean. The funding will be used to complete the final design of the project.

Rancho California Water District, Rancho California Water District Project, \$1,727,960

The Rancho California Water District, which provides water and wastewater services near Temecula/Rancho, California, will implement components of its Demineralization and Non-Potable Conversion Program. The funding will be used for the design, materials, and construction activities to convert 54 irrigation sites to accept non-potable recycled water. The funding will also support activities before construction of a small-scale recycled groundwater recharge facility. It is expected to save 18,400 acre-feet, or nearly 6 billion gallons, of water per year.

County of Hawaii, Hawaii Reclamation Projects, \$614,468.68

The County of Hawaii will conduct planning activities to evaluate upgrading the Kealakehe Wastewater Treatment Plan to implement water recycling for landscape and recreation applications. It will involve the necessary improvements to the existing secondary treatment process so that the wastewater treatment plant can produce water suitable for reuse per state guidelines. The project is expected to result in recycled water deliveries of 2,016 acre-feet, or 6.5 million gallons, per year.

El Paso Water Utilities Public Service Board, El Paso Water Reclamation and Reuse Project, \$3,500,000

The El Paso Water Utilities Public Service Board, located in El Paso Texas, will construct an advanced water purification facility to treat wastewater for potable reuse. The treated water will

be conveyed directly to the city's distribution system, making this facility the first large-scale, direct-to-distribution potable reuse project in the United States. The funding announced today will be used for a pilot facility and to complete preliminary, detailed and final design phases for the full-scale project. Once finished, the project will produce 13,000 acre-feet, or 4.2 billion gallons, per year.

To learn more about the Title XVI Water Reclamation and Reuse Program or view more detailed information about the projects selected, please visit www.usbr.gov/watersmart/title/.

Through WaterSMART, Reclamation works cooperatively with states, tribes, and local entities as they plan and implement actions to increase water supply reliability through investments to modernize existing infrastructure and attention to local water conflicts. Visit www.usbr.gov/watersmart to learn more.

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