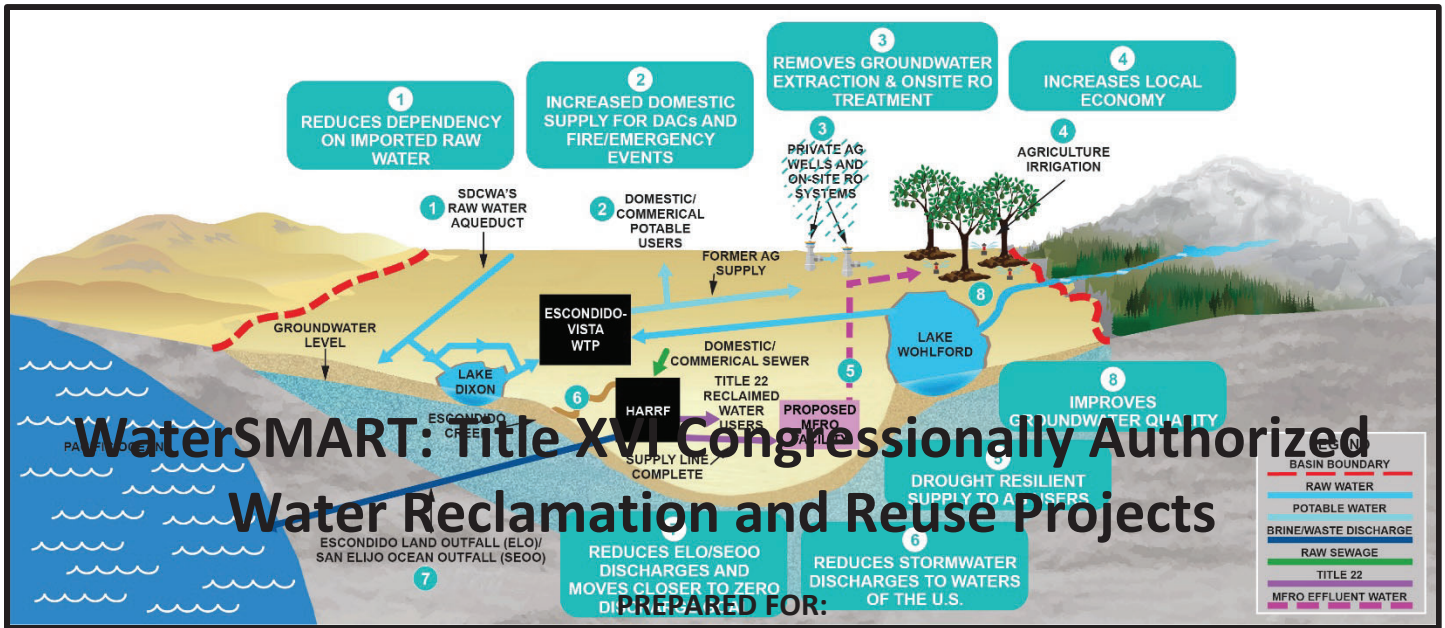




City of Escondido

Membrane Filtration Reverse Osmosis Facility Project



WaterSMART: Title XVI Congressionally Authorized Water Reclamation and Reuse Projects

United States Department of the Interior
 Bureau of Reclamation
 Policy and Administration
 Funding Opportunity Announcement No. BOR-DO-20-F008
 Financial Assistance Support Section
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 P.O. Box 25007, MS 84-27814
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February 19, 2020

**WaterSMART: Title XVI Water Reclamation and Reuse Program
 Funding Opportunity Announcement No. BOR-DO-20-F008
 TECHNICAL PROPOSAL & EVALUATION CRITERIA
 City of Escondido
 Membrane Filtration Reverse Osmosis (MFRO) Facility**

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1.) Technical Proposal and Evaluation Criteria

EXECUTIVE SUMMARY

Project Title: Membrane Filtration Reverse Osmosis (MFRO) Facility

Date: February 18, 2020

Applicant Name: City of Escondido

Applicant County: San Diego

Applicant State: California

Summary of Work

The Membrane Filtration and Reverse Osmosis (MFRO) Facility Project will provide an additional water supply source for the City of Escondido. The MFRO Facility will further treat recycled water using membrane filtration (MF) and reverse osmosis (RO) technologies. The MFRO Facility will produce high-quality water that is low in total dissolved solids (TDS) and chlorides to high water demand avocado growers and agricultural users who serve a vital role in the City of Escondido's economy. As shown in Figure E-1, the MFRO project site is located in the western region of the City of Escondido, CA. This water source will offset imported water and private groundwater and is higher quality than the existing groundwater source.

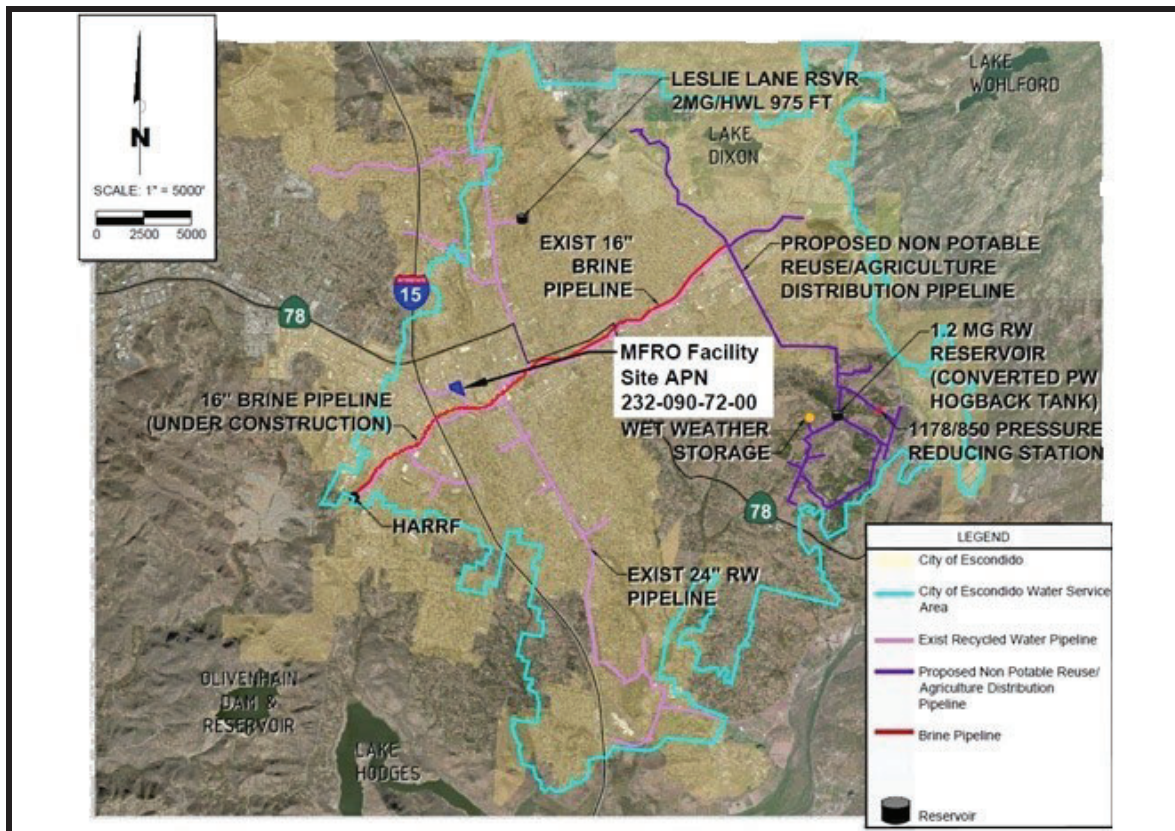


Figure E-1 – Project Vicinity Map

The MFRO facility will require a connection to an existing 24-inch pipeline that provides California Title 22 recycled water from the City's Hale Avenue Resource Recovery Facility (HARRF) to be used as plant influent. The MFRO Facility process provides for a minimum RO permeate production capacity of 0.5 million gallons per day (MGD), and a maximum permeate production capacity of 2.0 MGD. (There will also be provisions for potential future treatment equipment installation to include an additional 1.0 MGD of RO production capacity.) High RO permeate will be blended with Title 22 recycled water within an on-site product water tank that will then be pumped into the distribution system. The ratio of permeate to bypassed Title 22 recycled water varies based on the time of year, but the plant flow with the RO/Title 22 bypass blend ranges between 0.67 and 2.69 MGD. A new agricultural, low chloride, water distribution system (as shown in Figure E-1) will be installed, a project which includes converting the existing 1.2 million-gallon (mg) Hogback Tank to a recycled water agriculture supply reservoir. The process waste streams from the MFRO Facility, including RO concentrate and RO cleaning in place (CIP), will be collected and conveyed back to the HARRF outfall through a 16-inch dedicated brine pipeline. The MFRO waste streams will connect to the existing brine line along the storm drain channel. Recycled water is a valuable resource for many local, state, and regional agencies as a means for providing a supplemental water supply for both urban and irrigation purposes. Recycled water allows for improved efficiency, additional flexibility during water shortages, and a diversified water supply. The City's MFRO Facility provides a much-needed additional water source to the City's valuable agricultural users as a direct benefit. Just as important, are a multitude of indirect benefits the MFRO Facility will provide to the local and regional areas. A summary of those benefits are shown in Figure E-2 and described in more detail in Table E-1.

Figure E-2 provides a graphical representation of the existing and proposed facilities with the benefits and goals associated with the implementation of the MFRO Facility. The benefits provided from the MFRO Facility have a positive impact on the local water supply, the local economy, the regional water supply, reduced discharge volumes through the City's Ocean Outfall, reduced groundwater extractions, supplying a redundant water supply, and many others as described above and visually shown in Figure E-2, including:

1. Reduced dependency on imported raw water.
2. Increased domestic potable water supply for Disadvantaged Communities (DACs) and for fire/emergency preparedness.
3. Removes the need for private groundwater extraction and for private onsite RO treatment.
4. Increases local economy and improves the local agricultural production
5. Drought resilient supply to agricultural (AG) users.
6. Reduces and improves discharge water quality for stormwater discharges to waters of the U.S.
7. Reduces Escondido Land Outfall (ELO) and San Elijo Ocean Outfall (SEOO) discharges and moves closer to the Federal Zero Discharge goal.
8. Improves groundwater quality.

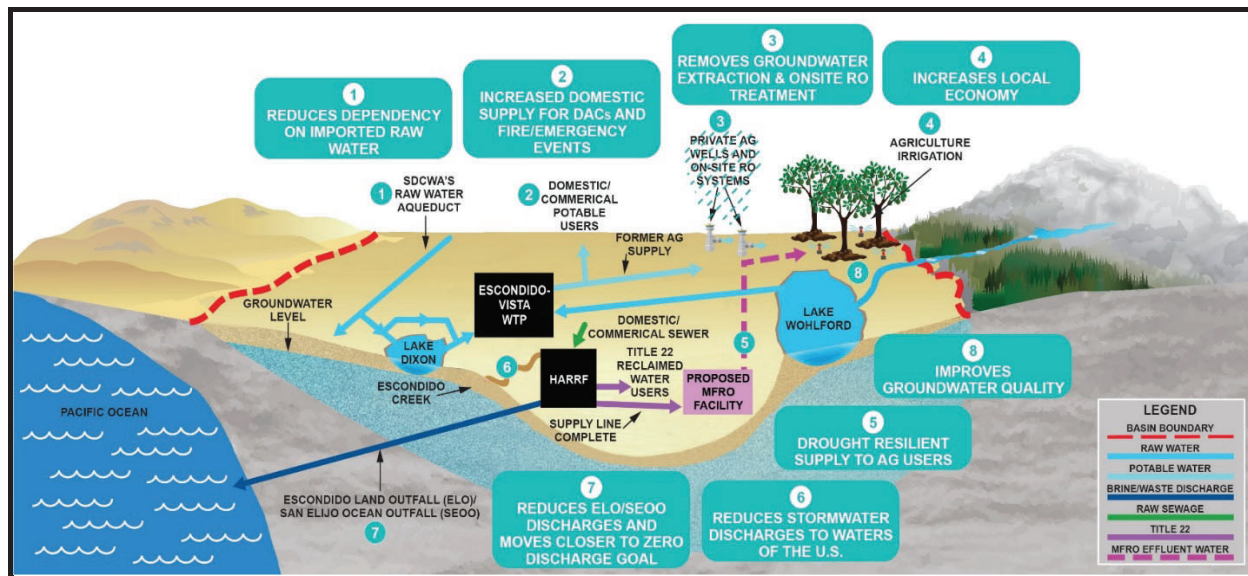


Figure E-2 – Benefits of the Proposed MFRO Facility

The major areas outlined in Table E-1 include:

<p>Energy Savings Raw and Potable Water Reduction Emergency Preparedness Zero Discharge Goal Community and Economic Benefits Greenhouse Emission & Carbon Footprint Reduction</p>	<p>Groundwater Protection Storm Water Design & Surface Water Tracking Efficient Land Use Planning Regulatory and Environmental Compliance Benefits Disadvantaged Communities</p>
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Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
Energy Savings	Reduces energy due to reducing amount of long distance raw water pumping.	There will be reduced pumping associated with both California State water and Colorado River water.
	New system would reduce stress on daily peak water demand as it allows agricultural users to irrigate at varying times.	Between 7 and 9 AM, 8 AM is roughly the peak at an increase of 0.6 peaking factor (City of Escondido Water Master Plan 2012 pg. 2-12).

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
	<p>Conserves SDG&E resources (time, money, man-power) associated with the Water Infrastructure and System Efficiency (WISE) Program.</p>	<p>Has the potential to reduce the number of agricultural users utilizing this program since many agricultural customers utilize their own personal wells and treatment systems.</p>
	<p>Variable Frequency Drives (VFDs) reduce pump energy usage.</p>	<p>Averaging \$250,000 annually, based on \$0.15 per KWH.</p>
	<p>Conserves energy by reducing amount of agricultural users utilizing personal wellheads and Reverse-Osmosis (RO) systems.</p>	<p>Providing less-expensive and better-quality water, in a centralized location with more efficient pumps, results in reduced energy use, and energy efficiency evaluation and monitoring in fewer locations.</p>
<p>Raw and Potable Water Reduction</p>	<p>Benefits Disadvantaged Communities (DACs) by reducing stress on the potable water treatment and distribution system and postponing associated related rate increases.</p>	<p>The MFRO Facility was selected based on economic analysis.</p>
<p>Raw and Potable Water Reduction (Continued)</p>	<p>Provides a drought tolerant water supply for agricultural customers separate from the potable water supply.</p>	<p>Sewage flows only reduce minimally during drought conditions and after advanced treatment would be a more reliable source for agricultural users.</p>
	<p>Reduces potable water demands and therefore assists the Water Shortage Contingency Plan (WSCP) in Escondido and the Water Shortage and Drought Response Plan (WSDRP) operated by San Diego County Water Authority (SDCWA).</p>	<p>(City of Escondido Urban Water Management Plan 2015 Ch. 7) (https://www.sdcwa.org/water-shortage-and-drought-response)</p>

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
	<p>Reduces water taken from Lake Wohlford and Dixon Lake which provides greater flexibility in preserving water levels for recreation and maintaining riparian habitat. Assists with taking advantage of upgrades to the Lake Wohlford dam designed to restore historical capacity of 6500 acre-feet.</p>	<p>Reduces water taken from Lake Wohlford and Dixon Lake, which provides greater flexibility in preserving water levels for recreation and maintaining riparian habitat.</p>
	<p>Reduces water taken from the San Luis Rey Watershed via the Escondido Canal for agricultural use.</p>	<p>Saves the raw water resources for other uses. (IRWM 5-31)</p>
	<p>Reduces dependence on imported sources for water.</p>	<p>80% of water is currently imported (City of Escondido Urban Water Management Plan 2015 pg. 2-5)</p>
<p>Emergency Preparedness</p>	<p>Increases fire prevention readiness by enhancing the resources required to fight fires.</p>	<p>Fire Season coincides with agricultural users growing season. By providing an alternative water source for agricultural users, the MFRO facility provides increased potable water availability for emergency use and storage.</p>
<p>Emergency Preparedness (Continued)</p>	<p>Sustains local agriculture, resulting in active/green vegetation which is less susceptible to fire. The project provides advantages to farmers because the water is less expensive than potable water and more reliable in a drought.</p>	<p>Currently most agricultural users choose reduced water rates and accept the risk of being the first to curtail use in times of declared drought. Agriculture minimizes fuel for wild fires.</p>
	<p>Assists with the Water Shortage Contingency Plan (WSCP) in Escondido and the Water Shortage</p>	<p>(City of Escondido Urban Water Management Plan 2015 Ch. 7) (https://www.sdcwa.org/water)</p>

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
	and Drought Response Plan (WSDRP) operated by San Diego County Water Authority (SDCWA).	-shortage-and-drought-response)
	Reduces the flow in the Escondido Land Outfall (ELO)/San Elijo Ocean Outfall (SEOO), resulting in additional capacity to convey wet weather flows.	This is consistent with the California Regional Water Quality Board Order number R9-2015-0027.
Zero Discharge Goal	Advances the City towards the federal Zero Discharge Goal for Waste Discharges into Federal jurisdictional waters.	(https://archive.epa.gov/epa/about/epa-history-water-challenge-environment-primer-epas-statutory-authority.html)
	Increased use of recycled water from HARRF minimizes the chance of having overflow discharges to Escondido Creek, and avoids the limitations imposed by the California Regional Water Quality Board Order number R9-2015-0026.	California Regional Water Quality Board Order number R9-2015-0026 allows discharges to Escondido Creek, but only when all other listed options have been determined not to be viable.
	Increases available capacity in the SEOO, allowing postponement of expenditures of tens of millions of dollars for replacement or rehabilitation of the outfall for at least 10 years.	Delays associated rate increases benefiting City residents and disadvantaged communities.
	Increases available capacity in the Escondido Land Outfall (ELO), currently at max capacity during peak wet weather.	The capacity relief occurs immediately upon project completion. (Draft Final Potable Reuse Program, 2014.)
Zero Discharge Goal (Continued)	Advances progress towards meeting the California Regional Water Quality Board Order number R9-2015-0027, which states that Escondido must reduce capacity in	The reduction occurs immediately upon project completion. (https://www.waterboards.ca.gov/rwqcb9/board_decisions/a

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
	the SEOO to convey wet weather flows.	dopted_orders/2015/R9-2015-0027.pdf)
Community and Economic Benefits	Encourages the agricultural economy, which has suffered recently due to the increasing cost of potable water.	Lower water prices will sustain avocado grove profitability and the local economy.
	The alternative water source accommodates the City of Escondido with more local and tourist recreation due to a reduction in the demand placed on Lake Wohlford and Dixon Lake.	Reduced treated water requirements allow greater flexibility in raw water diversion to both Lake Dixon and Lake Wohlford.
Greenhouse Emission & Carbon Footprint Reduction	Sustaining and/or rehabilitating groves/trees reduces the carbon footprint.	Local growers translate to less imported fruit, less long distance transportation to deliver the fruit, and less global emissions.
	Reduces greenhouse emission by reducing amount of long distance raw water pumping.	There will be reduced pumping associated with both California State water and Colorado River water.
	Avoids increased emissions from agricultural workers commuting to remote destination should there be a less robust local agricultural economy.	The commute for local farm workers would result in longer commutes to remote places of work.
	Reduces CO2 emissions maintaining agriculture as supported by climate change international initiatives.	Climate change international initiatives like the 4 per 1000 Plan, as part of Lima-Paris Action Plan, recognize that agriculture is a key component to reducing CO2 in the atmosphere.

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
<p>Groundwater Protection</p>	<p>Complies with the Sustainable Groundwater Management Act (SGMA).</p>	<p>The MFRO Facility project benefits ground water quality and enhances current compliance with the SGMA.</p>
	<p>Reduction in groundwater pumping due to increased availability of enhanced treated Title 22 recycled water for agricultural use.</p>	<p>Since Enhanced Recycled Water is better quality than current groundwater (https://www.waterboards.ca.gov/sandiego/publications_forms/publications/docs/2014_Annual_WateReuse_Conference_SNMP_Paper-Final.pdf), farmers are likely to curtail ground water pumping.</p>
	<p>Exceeds the goals of the Salt Nutrient Management Plan (SNMP).</p>	<p>Enhanced Recycled Water is better quality than current groundwater (https://www.waterboards.ca.gov/sandiego/publications_forms/publications/docs/2014_Annual_WateReuse_Conference_SNMP_Paper-Final.pdf)</p>
	<p>Reduces agricultural users dependence upon groundwater.</p>	<p>Provides a low cost alternative for agricultural users who rely on private wells, and any associated individual onsite, high energy RO treatment systems.</p>
	<p>Will reduce brine output from private RO systems that may go into leach lines, or which otherwise may be diverted to the wastewater system.</p>	<p>This reduces the amount of water that is high in salt content from potentially entering the ground water aquifer, and or the wastewater system.</p>

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
<p>Storm Water Design & Surface Water Tracking</p>	<p>The MFRO Facility will assist with Senate Bill (SB) 88 compliance in tracking water use.</p>	<p>Tracking of agricultural water use will be centralized with flow measuring equipment being part of the supervisory control and a data acquisition system (SCADA) providing accurate recording. This will provide a means of comparing flows associated with totals of individual user meters.</p>
<p>Storm Water Design & Surface Water Tracking (Continued)</p>	<p>The MFRO Facility utilizing Low Impact Design (LID) including bio retention ponds minimizes storm water from entering the adjacent Reidy Creek and Escondido Creek Flood Control Channels.</p>	<p>The project includes an on-site storm water biofiltration basin to capture, treat, and release the water at a controlled rate as dictated by the City’s storm water requirements. The basin directs water into the existing 54-inch storm drain and then conveys the storm water utilizing an existing channel outlet to the Reidy Creek Flood Control Channel, which flows into the Escondido Creek Flood Control Channel. This treated water meets all water quality standards.</p>
	<p>The project site is located in the heart of a developed industrial district within the City. The site does not occur in or near lands identified for conservation or preserve configuration in the region. The only biological resources located near the site that are of local importance include the Reidy Creek flood control channel and Escondido Creek flood control channel. Both reaches are</p>	<p>The design uses existing drainage facilities and ensures all ultimate receiving bodies have a higher quality water leaving the site.</p>

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
	concrete lined, but serve as important flood conveyance features for the local area, conveying storm water to natural downstream reaches of Escondido Creek that support regionally-important biological resources	
Efficient Land Use Planning	Uses existing infrastructure, minimizing excavation in the right of way outside of the MFRO Facility site.	There are existing pipelines and drainage facilities already in place adjacent to the property.
	The project is located at 901 West Washington Avenue, approximately 55 feet southwest of the West Washington Avenue and Rock Springs Road intersection. The parcel is approximately 10.3 acres in size and is owned by the City. The Assessor’s Parcel Number (APN) is 232-090-72-00. The site is accessible via a driveway along West Washington Avenue and a shared access driveway with two gated entrances on the west side.	The San Diego County assessor's parcel number (APN) is APN 232-090-72-00.
	The project provides potential locations for alternative energy sources with solar power and wind power.	The current design includes solar panels on the roof of the MFRO building.
	Site grading requirements associated with the MFRO Facility design will reduce sediment entering Escondido Creek.	Escondido Creek carries sediment to San Elijo Lagoon, which is a 303(d) listed waterbody due to sediment (IRWM pgs. 5-33 & 5-34). The MFRO facility improves current

Table E-1 – MFRO Facility Project Benefits Summary

Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
		grading conditions and significantly reduces sediment entering the creek.
	Industrial setting ensures all impacts such as noise, emissions, etc. are less than the ambient conditions of the surrounding businesses	This project blends in with the other existing surrounding industrial businesses.
Regulatory and Environmental Compliance	Assembly Bill AB-52, CEQA consultation requirements with California Native American Tribes, has occurred with measures in-place for construction.	Outreach, meetings, and responses with California Native American Tribes have been completed, resulting in agreed upon construction monitoring requirements.
	A Mitigation, Monitoring, and Reporting Plan (MMRP) has been prepared per the CEQA and CEQA Plus guidelines. This will be implemented by the City for the project and reporting in the Quarterly Reports.	The MMRP for the project includes detailed Mitigation Measures (MM)s that reflect the requirements from the various biological and cultural studies.
	Achieves California Office of Historic Preservation (OHP) goals and requirements, through the State Historic Preservation Office (SHPO).	The project will pursue consultation with the OHP, per communication with the SHPO. The goal is gain OHP concurrence with the State Water Board determination of “no historic properties affected” by the Project.
	Maintaining Lake Wohlford and Lake Dixon levels are necessary, as assisted by the project, to promote the San Diego County Vector Control Program.	The City of Escondido encourages and promotes the County Vector Control Program.
	Maintaining Lake Wohlford and Dixon Lake levels are necessary, as	Dixon Lake is rated as being within the range of 90% to

Table E-1 – MFRO Facility Project Benefits Summary		
Project Benefits	Regulatory Achievements & Goal Enhancements	Comments
	assisted by the project, to comply with both respective Multiple Habitat Conservation Plans (MHCP) for riparian/wetlands.	100% conserved (IRWM pg. 5-35). This alternate water supply allows more flexibility in maintaining lake levels.

TECHNICAL PROJECT DESCRIPTION

Background

The City of Escondido (City) has implemented a comprehensive Potable Reuse Water Program (Reuse Program) based on the Bureau of Reclamation (BOR)s acceptance of the North San Diego County Water Coalition, Regional Recycled Water Program 2020 Project Feasibility Study, 2015. The Reuse Program includes the Membrane Filtration (MF) and Reverse Osmosis (RO) water treatment facility (MFRO Facility project) which delays or defers wastewater outfall improvement requirements through Year 2050, expedites a new high quality, low chlorides water supply to local agriculture, and promotes and supports the local economy.

The Reuse Program was the driving factor in development of the MFRO Facility project to facilitate agricultural water reuse. The Project will provide additional treatment of recycled water with membrane filtration (MF) and reverse osmosis (RO) technologies to produce a high-quality water that is low in Total Dissolved Solids (TDS) and chlorides, for the benefit of high-water-demand agricultural and avocado growers who serve a vital role in the City of Escondido’s economy. The project completed the feasibility phase and is now in the design/construction phase. The City is moving forward with a “Progressive Design Build” project delivery method. A Design Build team was selected and the project is currently at the 60 percent design stage. The original project goals have not changed. The project includes a connection at the MFRO site, located at 901 West Washington Avenue, to the existing 24-inch pipeline that provides California Title 22 recycled water from the City’s Hale Avenue Resource Recovery Facility (HARRF) used as plant influent. The MFRO Facility process, see Figure 1-1, provides for a minimum RO permeate production capacity of 0.5 million gallons per day (MGD), and a maximum permeate production capacity of 2.0 MGD. (There will also be provisions for potential future treatment equipment installation to include an additional 1.0 MGD of RO production capacity.) High RO permeate will then be blended with Title 22 recycled water within an on-site product water tank that will then be pumped off-site. The ratio of permeate to Title 22 recycled water varies based on the time of year, but the plant flow with the RO/Title 22 Bypass blend ranges between 0.67 and 2.69 MGD.

A new agricultural, low chloride, water distribution system will be installed which includes converting the existing 1.2 million-gallon (mg) potable water Hogback Tank to a recycled water agriculture supply reservoir. The process waste streams from the MFRO Facility including RO

concentrate and RO cleaning in place (CIP) waste will be collected and conveyed back to the HARRF outfall through an existing 16-inch dedicated brine pipeline.

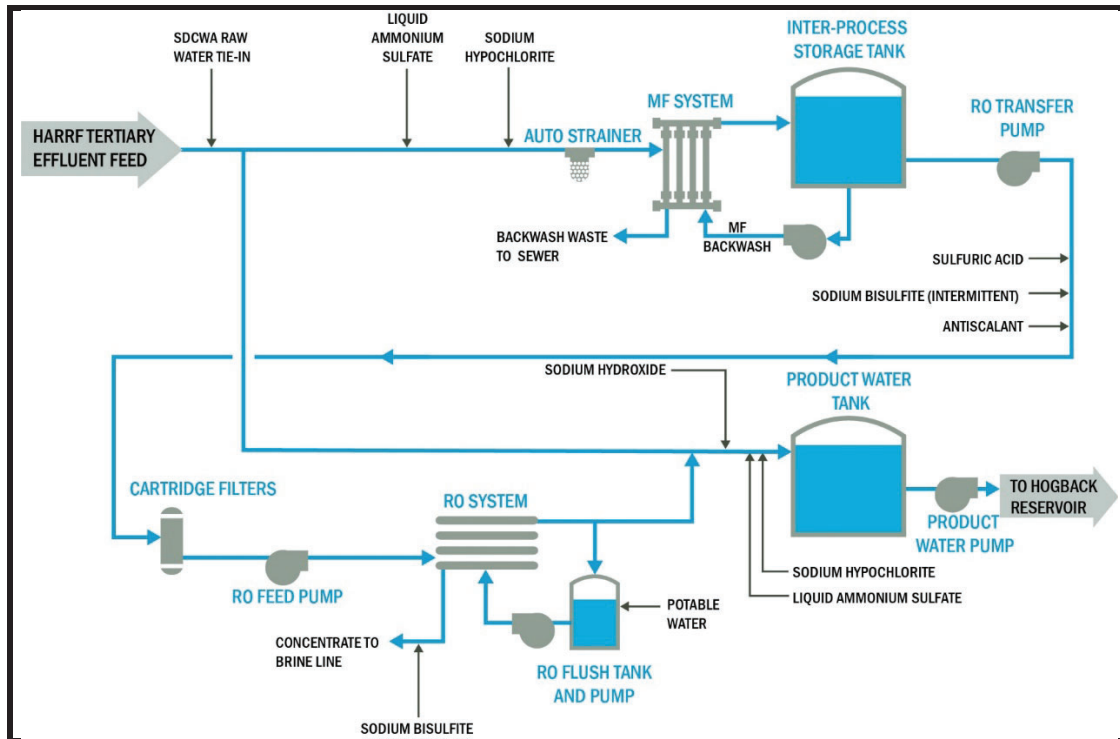


Figure 1-1 – MFRO Process Flow Diagram

Additional and specific information related to reuse demands, location, piping and hydraulics, treated water quality objectives, overall MFRO treatment process capacities, specific information for the MFRO Facility equipment, waste streams, and proposed agricultural water distribution system are provided in the following discussion.

Evaluation of Title 22 Water Demands and Time-Of-Day Use

The existing Title 22 recycled water system irrigation highest demand period is generally between the hours of 6:00 p.m. to 6:00 a.m., with one large user that operates 24 hours a day (Palomar Energy, LLC, a subsidiary of Sempra Energy Resources, Power Plant). The Palomar Energy, LLC, demand is the largest and most consistent, but the system does experience higher flows during the evening when a majority of the landscape irrigation systems are operating. This variability was a key consideration for the MFRO Facility operation since it meets the optimal membrane treatment process. Typically, MFRO facilities are designed to operate 7 days a week, 24 hours a day, except when down for cleaning or down for seasonal storage. Therefore, the design approach for the City’s new MFRO Facility considers operation of the MFRO Facility continuously over a 24-hour period through the membranes and then blending with HARRF Title 22 recycled water even during low demand periods. Operating the system in this method prolongs the life of the membranes and promotes regular maintenance scheduling.

Project Location

The proposed site, zoned as industrial property, is located at 901 West Washington Avenue. The proposed site is located in the City of Escondido on the undeveloped parcel APN No. 230-090-72-00. The project site consists of 10.3 acres and is bound by a cement processing plant to the east, Washington Avenue to the north, and a commuter train operations building to the west and south. The Reidy Creek flood control channel borders the south eastern corner of the property. The project site location is presented on Figure 1-2.

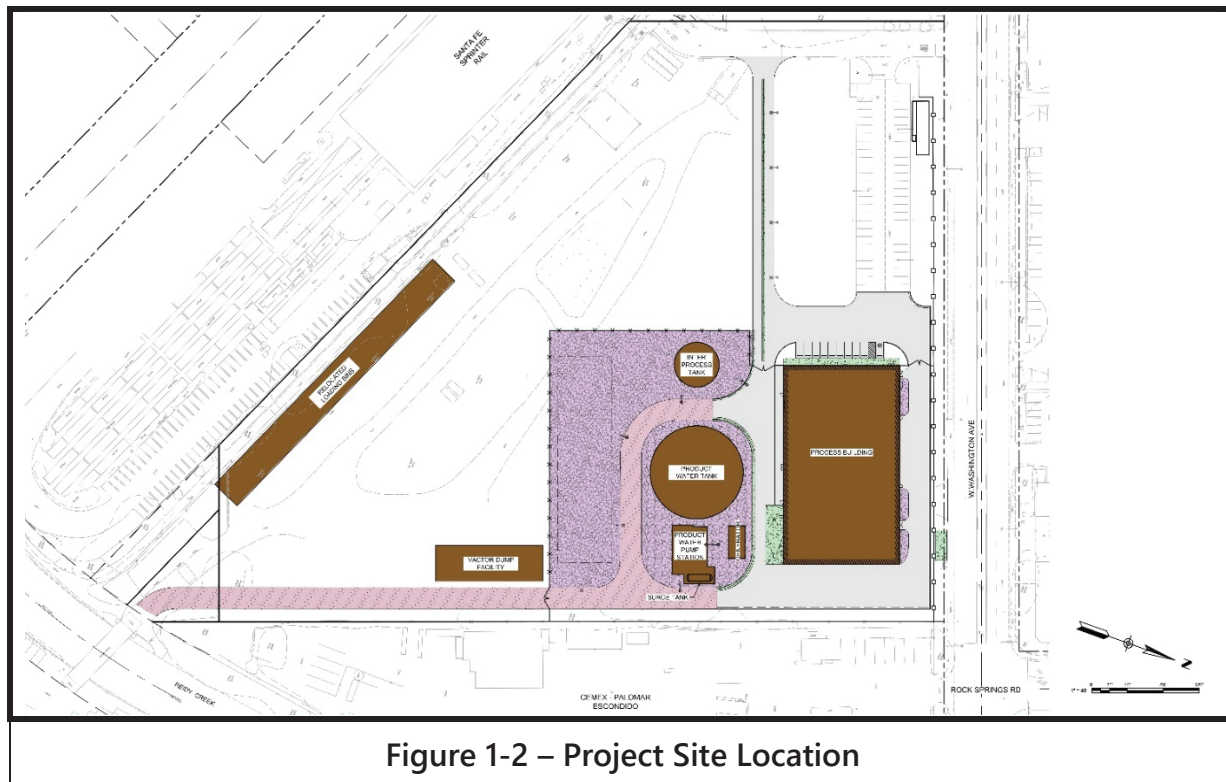


Figure 1-2 – Project Site Location

Evaluation of Title 22 Piping and Hydraulics

In evaluating the project, a hydraulic analysis was performed as part of the preparation of the conceptual design memorandum, dated September 23, 2016, using the City’s existing recycled water model developed in the June 2011 Recycled Water Master Plan. An MFRO Facility Conceptual Design Report was prepared in August 2019 which provides updates to the 2016 conceptual design memorandum for the new site located at 901 West Washington Avenue. The results of the conceptual memorandum indicated: 1) the existing reuse piping network would provide adequate service pressures to feed the related and the new agricultural distribution system; 2) the system will accommodate 24-hour membrane operations by having adequate onsite storage at the MFRO Facility site and by converting the existing 1.2 million-gallon (mg) potable storage Hogback Tank to a recycled water agriculture supply reservoir, and 3) pumping into the new agricultural system would be able to be accomplished using three 1,820 GPM pumps at 550 feet of head. An existing pipeline will be used to convey Title 22 recycled water from

HARRF to the MFRO Facility. The influent pipeline will enter the project site from the South. The influent pipeline will branch onsite to supply water to the product water blend tank and to the MFRO Facility treatment system. Per hydraulic analysis, the onsite influent pressure will be sufficient to supply enough water pressure through the membranes without needing membrane feed pumps.

Treated Water Quality Objectives

The Feasibility Study as mentioned above stipulated water quality requirements for the City’s agriculture producers focusing on avocado production, which is one of the most important crops grown in Escondido. The water quality parameters that can diminish avocado crop productivity are provided in Table 1-1. This information was obtained based on meetings with members of the Escondido Growers of Agriculture Preservation (EGAP) as well as published information in the literature. Based on discussions with EGAP, it is desired to reduce the chloride concentration to 80 mg/L to prevent leaf burn, root rot, and the need for excessive flushing. However, chloride concentrations up to 100 mg/L can be tolerated for limited periods, days to weeks. It should be noted that historical water quality provided by the City shows the average chloride concentration in raw source water supplies varies as follows: Lake Henshaw = 39 mg/L; Dixon Lake = 80 mg/L; and imported water via SDCWA = 81 mg/L.

Table 1-1 – Agriculture Water Quality Criteria for Key Parameters		
Parameter	Units	Concentration
Total Dissolved Solids (TDS)	mg/L	540-600
Chloride	mg/L	80 (maximum 100 for limited duration)
Sodium Adsorption Ratio (S.A.R)	ratio	10
Electrical Conductivity	µS/cm	500-1000
Boron	mg/L	< 0.5
pH	---	6.5-7.0

The water quality of the blend water will vary, based on the blend ratio of Title 22 recycled water bypass to RO permeate. Table 1-2 summarizes the estimated water quality for blend ratios ranging from 0 to 1.95, which corresponds to initial total recycled water flows available for agricultural users of between 0.5 to 5.9 MGD. The initial minimum flow condition would occur during times when Title 22 recycled water is not available for blending and the MFRO facility is operating at minimum production flow of 0.5 MGD. The initial average and maximum total blend flows represent the estimated 2050 summer agriculture recycled water demands as identified in the Feasibility Study. During such conditions, it is anticipated the MFRO Facility would be operated at the initial design production capacity of 2 MGD. An example-blending scenario for the future condition of increasing the RO permeate capacity by 1 MGD is also shown.

Except for pH, the agricultural water quality requirements are only exceeded when the blending ratio is above 1. Because the RO process rejects most of the minerals in the feed water, the RO permeate is corrosive and can damage the downstream storage and conveyance system. Thus, chemical post treatment to adjust the pH and stabilize the water for corrosion control will be provided.

Overall MFRO Treatment Process Capacities

The MFRO Facility is planned to initially operate with a production capacity of 0.5 MGD (350 GPM) and an ultimate production capacity of 2.0 MGD (1,390 GPM). A summary of the influent and effluent flows, including the recovery (defined as the ratio of product water/to feed flow) for each treatment process, is provided in Table 1-2. Note the conceptual design includes provisions to expand the facility in the future to provide an additional 1 MGD (not shown in Table 1-2) of product water to meet future increased agriculture reuse demands.

Table 1-2 – MFRO Facility Production Capacity Summary		
Description	Initial Operation	Ultimate Operation
Process Influent Rate	0.68 MGD (471 GPM)	2.72 MGD (1,886 GPM)
MF Strainer Influent	0.68 MGD (471 GPM)	2.72 MGD (1,886 GPM)
Strainer Recovery	99%	99%
MF Influent Flow	0.67 MGD (467 GPM)	2.69 MGD (1,867 GPM)
MF Equipment Recovery	93%	93%
RO Influent Flow	0.63 MGD (434 GPM)	2.53 MGD (1,754 GPM)
RO Equipment Recovery	80%	80%
Total Production Capacity	0.50 MGD (350 GPM)	2.00 MGD (1,390 GPM)

Figure 1-1 presents the conceptual process flow schematics for all major components of the MFRO Facility. The details of the major MFRO Facility system components are discussed below in order of the process flow.

Membrane Filtration Feed Strainers

Prior to entering the MF membrane units, the feed water would be passed through self-cleaning automatic strainers. The strainers would remove large particles and debris that could potentially damage the MF membranes. Chloramines will be used to protect the MF process from biological fouling. Sodium hypochlorite and ammonium sulfate, mixed to form chloramines, will be stored in the chemical feed building and pumped to the points of injection shown on Figure 1-1.

Membrane Filtration (MF) System

The membrane filtration system will utilize microfiltration or ultrafiltration (UF) membranes to function as a pretreatment process for the RO system. MF is a physical separation process in which suspended and colloidal solids are removed from the feed stream through a porous membrane. MF pretreatment provides a stable, high-quality feed stream for the RO systems minimizing colloidal and particulate fouling of RO membranes. While there are currently two configurations available for MF systems: 1.) submerged, and 2.) pressurized systems, it has been decided to utilize a pressurized MF system because for this size facility, there is a lower construction cost since they do not require expensive coated steel or stainless-steel membrane tanks, and a shorter process structure can be used to enclose the pressurized membrane vessels. In addition, they have a distinct cost advantage for treatment capacities less than 10 MGD. The pressurized system is also preferred from an operations perspective providing easy access to the membrane modules for maintenance and the ability to visually inspect the membrane fibers. The MF system will be equipped with a complete clean-in-place (CIP) system to clean and condition the membranes. The system consists of chemical addition, air scour, and a reverse filtration pumping system with associated piping and controls. The MF membranes would periodically undergo backwash and chemical cleaning to remove foulants from the surface.

The MFRO Facility will be designed with a backup engine generator; however, this is a non-critical facility. If required, during temporary maintenance related shutdowns, the agricultural demand can still be met with 100% Title 22 recycled water. Also, if one microfiltration or UF unit were offline for routine maintenance or cleaning, the plant could operate at a reduced production capacity, which would increase blend ratio of Title 22 recycled water to RO permeate, resulting in increased constituent concentrations of the recycled water sent to agriculture users for a limited period of time.

The conceptual design criteria for the MF systems associated with the MFRO Facilities is summarized in Table 1-3.

Table 1-3 – Membrane Filtration System Design Parameters	
Description	MRFO Facility
MRF System	
Net Filtrate Flow, Design, GPM (24 hour basis)	1,754
Net Filtrate Flow, Minimum, GPM (24 hour basis)	868
No. of Skids	3 (2 duty, 1 future)
Redundancy	none
Capacity Per Skid, GPM	868
Recovery, minimum, %	93

Table 1-3 – Membrane Filtration System Design Parameters	
Description	MRFO Facility
MRF System	
Instantaneous Flux $\geq 20^{\circ}\text{c}$, Maximum, GFD	25
Total Membrane Area Required, (sq. ft.)	122,4000
Total No. Modules Required	204
No. of Modules per Skid	102
Backwash Interval, min.	25-30
Maintenance Wash Interval, minimum, per week	1
CIP Interval, Minimum, per month	1
Typical CIP Duration, per skid, per clean	4-6 hours
Estimated Foot Print (per skid), Length (ft) / Width (ft)	38 / 6

MF/RO Inter-Process Storage Tank

One 240,000 (usable) gallon inter-process storage tank would be provided between the MF and RO systems to equalize the MF filtrate flows prior to being fed to the RO systems. The tank would be approximately 50-feet in diameter and 32-feet tall.

Reverse Osmosis Transfer Pump Station and Cartridge Filters

Three, approximately 30 hp, RO transfer pumps will pump MF filtrate from the inter-process storage tank through the cartridge filters to the suction side of the RO feed pumps (refer to Figure 1-1). Cartridge filters will be installed immediately upstream of the RO system to protect the RO membranes. Cartridge filters consist of wound hollow core polypropylene elements and will be replaced when the differential pressure drop increases from a clean state to a fouled condition state of roughly 2-4 psi, for a total pressure drop of 15 psi. Based on experience at similar facilities, biofouling is controlled using chloramines, and the cartridge filters should only require replacement every 6-12 months. The cartridge filters are provided to protect the RO membranes from long-term solids deposition.

Reverse Osmosis Feed Pump Station

To allow for different operating conditions on individual membrane trains, as determined by the degree of membrane fouling, each RO train would be served by its own dedicated variable speed feed pump. Four, approximately 100 hp, RO feed pumps would boost the pressure of the RO feed water to the RO membranes.

Reverse Osmosis System

The RO system is a high-pressure membrane process designed to remove dissolved constituents from the process feed water. Permeate produced by RO vessels will be combined into one permeate stream. The conceptual design criteria for the RO systems are provided in Table 1-4.

Based on the noncritical nature of the facilities as discussed in above, the RO systems for the MFRO Facility will be designed without redundancy. Therefore, if one RO skid is taken offline for cleaning or maintenance the facilities would operate at a reduced production capacity. For example, with one RO train offline, the maximum production capacity of the MFRO Facility would be reduced by 25% (i.e. 2.0 MGD to 1.5 MGD). As a precaution, space for a future 1.0 MGD RO unit is provided within the MFRO Facility.

Like the UF membranes, the RO membrane elements will require periodic cleaning to restore permeability. The RO membranes are typically cleaned when the permeability has reduced to approximately 85% percent of the initial stable conditions. Typically, the required cleaning frequency varies from once every three to six months to once per year.

Table 1-4 – RO System Design Parameters	
Description	MRFO Facility
RO System General	
Quantity of Trains	4 (4 duty)
Design Capacity, RO permeate, MGD	0.5
Design Recovery, %	85
Pressure Vessel Racks	
Number of Pressure Vessels per Train	18
Number of Stage 1 Pressure Vessels	10
Number of Stage 2 Pressure Vessels	5
Number of Stage 3 Pressure Vessels	3
Number of Membrane Elements per Vessel	6
Design Pressure, psig	450
Membrane Elements	
Number of elements per train	108

Table 1-4 – RO System Design Parameters	
Description	MRFO Facility
RO System General	
Area Per Element, sq.ft.	400
Maximum System Design Flux, gfd	12
Element Type	High Rejection Polyamide Composite
Average Salt Rejection, %	>99.5

RO Flush System

When an RO train is shutdown, residual feed water remains in the membrane elements. If the train is to remain offline for a period of more than 30 minutes, the membranes will need to be flushed with permeate to ensure against fouling. The permeate flush is a low pressure, low flow process in which approximately two pressure vessel volume exchanges would be pumped through the train to waste. The flush system would include the following inside the Process Building:

- One vertical cylindrical, flat-top, approximately 6,500-gallon tank
- Two (one duty and one standby) horizontal centrifugal, approximately 2 hp pumps. Each pump’s capacity would be 60 gpm.

Product Water Storage Tank

The Product Water Storage Tank will be used for enhanced blending to meet agriculture reuse water quality requirements, and agricultural reuse storage. The RO permeate and Title 22 recycled water will be blended by using an in-line static mixer upstream of the tank. The ratio of Title 22 water to RO permeate is anticipated to range from 0 to 2.0. A product water tank would be installed onsite for blend and storage purposes. The overall tank dimensions are approximately 104-feet in diameter and 34-feet tall. The product water tank would provide a total useable storage volume of approximately 1,000,000 gallons.

Product Water Pump Station

The product water (facility produced, blended water) pump station would supply reuse water to the City’s Hogback Reservoir located on a hilltop east of the City limits in unincorporated San Diego County south of Mountain View Drive and to the agriculture distribution system. The pump station would consist of three 250-horsepower pumps (two duty and one standby), each rated for 1,820 gpm to meet peak period demands. The pumps would be electric motor driven and equipped with variable frequency drives to supply wide varying seasonal demands. Due to the elevation of the Hogback reservoir, an intermediate booster pump station is to be located along the recycled water alignment and situated at Mountain View Park on Glenridge Road.

This pump station was included as part of the Recycled Water Easterly Main Extension Project MND.

Process Waste Streams

MFRO process waste streams, including RO concentrate, RO CIP, and BAC Filter backwash, will be collected and conveyed back to the HARRF outfall through an existing 16-inch dedicated brine pipeline.

Waste streams, including MF backwash, strainer backwash, MF CIP, as well as sanitary sewer waste, will be discharged to an onsite sanitary sewer and conveyed to HARRF for treatment. Blending, dilution, or neutralization of chemical solutions will be evaluated and provided as necessary during final design. If required, each of the waste streams will be collected and directed to a waste equalization tank where the waste flows can be neutralized prior to disposal to the sanitary sewer.

Electrical

Electrical power for the proposed project would be supplied by the San Diego Gas & Electric (SDG&E). All electrical equipment would be located inside the process building electrical room. Standby power would be provided by an outdoor diesel engine generator. The engine-generator would be designed to meet the City's Municipal Code sound thresholds at the property line for the receiving land use. The exhaust particulate filter/silencer would be provided and sized to meet San Diego County Air Pollution Control District (SDCAPCD) requirements as needed. The engine generator would provide standby power to necessary electrical and controls equipment. The engine-generator would only operate during loss of utility power. However, it would be exercised on a monthly basis during business hours and within SDCAPCD operational limits.

Instrumentation and Control

The MFRO Facility will include provision for an automated plant control system (PCS). The PCS provides automated monitoring and data acquisition for multiple data points for each process system and sub-systems throughout the plant utilizing a series of programmable logic controllers (PLCs) to be installed throughout the facilities. Since this plant is monitored closely by a Supervisory Control and Data Acquisition (SCADA) System, it allows the City to correct process issues and operate the plant more efficiently. Specific set point parameters will be seen through the Human Machine Interface (HMI) and allows the City to track production, water quality, and other key parameters.

EVALUATION CRITERIA

Evaluation Criterion 1—Water Supply (35 points)

Subcriterion No. 1a—Stretching Water Supplies (18 points)

The amount of water expected to be made available by the Project and the extent to which the Project will reduce demands on existing facilities is presented below by reprinting the questions and providing responses to related application questions:

- 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 recycled 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 water that will be produced by the activities that will be completed over the next two years.**

Approximately 3,000 AF per year of additional treated Title 22 recycled water will be made available by the project. Upon completion, the project will offset nearly 12 percent of the service area's annual potable water supply.

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

Yes, assessment of the non-potable reuse/agricultural water (NPR/Ag) system has shown that expansion of the City's existing recycled water system will provide recycled water to new customers that currently use potable water in a 1:1 ratio, and delays upgrades to the land outfall for at least 10 years. With the City already having started key elements of this program, such as the brine pipeline, and influent pipeline, incorporation of these elements has provided the necessary initial efforts essential to implementing this program quickly.

- 3. Will the Project alleviate pressure on existing water supplies and/or facilities? If so, please describe the existing water supplies, identify the supplies and/or facilities that will be impacted and explain how they will be impacted by the Project, including quantifications where applicable.**

Yes, currently excess recycled water is sent through the land outfall on to the ocean. After completion of the MFRO Facility, recycled water will be treated and distributed to farmers in the surrounding area. This will reduce the amount of recycled water sent to the ocean by 3,000 AFY. Substituting treated Title 22 recycled water in place of drinking water restores capacity to drinking water treatment facilities, drinking water distribution systems, as well as the land and ocean outfalls.

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

There are many ways to quantify the performance and benefits of the proposed project. One way is to track the amount of treated water being distributed from the MFRO Facility. The plant allows the City of Escondido to lower the amount of water it imports from the Colorado River and the State Water Project. Every gallon of treated agricultural water used directly correlates to a gallon of drinking left to supply other needs, or otherwise reduces water demand that would have to be extracted from the distressed California state water system, or the declining flows of the Colorado River. Since all these flows/usages are tracked by meter records, an actual reduction of potable water and increase in Title 22 water can be quantified.

Another potential tracking mechanism is to track with the Department of Health (DEH) any on site/private wells which have been abandoned as a result of the project. Also, groundwater usage

will be tracked with the Groundwater Sustainable Agencies (GSAs) to evaluate reduction in groundwater usage.

Another way to quantify the benefits of the project will be to monitor agricultural revenue associated with the City of Escondido. Agriculture has been declining in recent years, and if revenues rise after the completion of the MFRO Facility, that proves the industry is benefitting as well as the overall economy of Escondido.

Subcriterion No.1b—Contributions to Water Supply Reliability (17 points)

- 1. Will 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. Specific concerns may include, but are not limited to the following items listed in bold:**

The MFRO facility will contribute to potable water supply reliability by having an additional source of recycled water to provide to the agricultural community, ultimately reducing the demand on potable water. The following summarizes how this project contributes to water availability.

- **Water supply shortages**

The project provides a drought tolerant water supply for agricultural customers separate from the potable water supply. This reduces potable water demands and therefore assists in meeting the goals of the Water Shortage Contingency Plan (WSCP) in Escondido and the Water Shortage and Drought Response Plan (WSDRP) operated by the San Diego County Water Authority (SDCWA).

Since the agricultural high watering season coincides with the fire season, this drought tolerant water supply will add to the emergency preparedness of the City. Since the project reduces over 10% of the potable water supply, it ensures a larger volume of water is available for addressing fire events.

The project also reduces water taken from the San Luis Rey Watershed via the Escondido Canal for agricultural uses, which saves the raw water resources for other uses.

- **Water supply reliability**

Having a reliable recycled water source for agricultural customers in Escondido reduces dependence on imported drinking water sources. Currently 80% of the community's water is imported to Escondido. Since wastewater sources are stable, this provides a constant source of supply.

- **Groundwater depletion**

The project reduces agricultural users' dependence on groundwater by providing a low-cost alternative for those users who rely on wells, and any associated individual RO treatment systems. Since treated recycled water is better quality than current groundwater, farmers are likely to curtail ground water pumping, and abandon any on site treatment systems. Since this

higher water quality Title 22 recycled water has better overall quality than the groundwater, any water percolating to the groundwater will enhance the aquifer.

In addition, the proposed project will reduce brine output from private RO systems that may go into leach lines, or which otherwise may be diverted to the wastewater system. This reduces the amount of water high in salt content from potentially entering the ground water aquifer and/or the wastewater system.

- **Water quality issues**

Currently, farmers cannot use the Title 22 water because it contains chloride levels of 188 mg/L, which is not ideal for agriculture and especially detrimental to avocado trees. However, the proposed project will produce water containing chloride levels of approximately 80-100 mg/L and water that has less concentrations of other constituents lower than other local waters as shown in Table 2-1 below.

Parameter	Units	Groundwater	HARRF	Potable	**MFRO Plant
Calcium	mg/L	123	66	41	25-45
Magnesium	mg/L	77.2	26	17	9-18
Sodium	mg/L	216	171	80	60-120
TDS	mg/L	1292	923	360-700	540-600
Chloride	mg/L	305	188	70	80-100
Boron	mg/L	0.134	0.388	0.14	<0.4
pH	-----	7.2	7.7	8	7.5-8.5
Conductivity	µS/cm	2070	1576	710	500-1000

*** Estimated water quality based on average plant production flow condition of 2.95 MGD (blend 0.95 MGD Title 22 with 2.00 MGD MFRO product flow)*

The MFRO Facility project benefits ground water quality since it is used for irrigation purposes. The project also assists in reaching the Sustainable Groundwater Management Act (SGMA) goals since farmers with wells are likely to switch to the City’s system, reducing the number of wells without metering equipment and extraction volumes that cannot be tracked.

- **Natural disasters that may impact water supply infrastructure**

The project increases fire prevention readiness by enhancing the resources required to fight fires. Fire season coincides with agricultural users’ growing season. By providing alternative water sources for agricultural users, the MFRO Facility reduces potable water usage, providing

increased potable water for fire flows and storage. It also sustains local agriculture, resulting in active/green vegetation which is less susceptible to fire.

In addition, the project assists with the Water Shortage Contingency Plan (WSCP) in Escondido and the Water Shortage and Drought Response Plan (WSDRP) operated by the San Diego County Water Authority (SDCWA).

Finally, the project reduces flows into the Escondido Land Outfall (ELO)/San Elijo Ocean Outfall (SEOO), providing additional capacity to convey wet weather flows minimizing flood conditions. This is in line with the California Regional Water Quality Board Order number R9-2015-0027.

- **Heightened competition for water supplies**

The MFRO plant will lower water prices, which will sustain avocado grove profitability and the local economy. This will encourage the agricultural economy which has suffered recently due to the rising cost of potable water. The project will also reduce potable demands in the City's water service area, therefore reducing the imported water purchased from the California State Water Project and Colorado River, which have competing interests from other cities and states.

- **Availability of alternative supplies**

The project provides a low-cost alternative water supply for agricultural users who rely on the potable water system or wells with any associated individual RO treatment systems, therefore reducing agricultural users' dependence upon potable and groundwater. This project will introduce a new customer class to the City's recycled water system, agricultural users, who could not directly use Title 22 water due to the high salinity and chloride levels.

- **Increasing cost of water supplies**

The project provides lower water prices that will sustain avocado grove profitability and the local economy, which has suffered recently due to the cost of water. This does not increase the cost of potable water in any way.

The project will produce water in order to address the existing concern over the water supply for the agricultural industry. Agriculture is a \$100,000,000 per year industry in Escondido and plays a huge part in the city's economy. However, agriculture has been on the decline. Recent droughts and imported competition have forced many growers out of business, resulting in the loss of thousands of acres of agricultural land. A less expensive and drought-proof water source would help Escondido's farmers remain competitive, stop loss of agricultural land, and preserve this vital industry in Escondido. This is where the proposed project comes in. Treating and recycling water to provide for farmers is a less expensive water source than potable water, and will help save Escondido's agriculture from its current decline.

2. **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?**

The proposed project is a drought-proof facility, meaning that water will be treated and constantly available to farmers even during times of drought. The area has been experiencing drought in recent years which has attributed to the decline of agriculture in the region. Therefore, the proposed project is vital, having the potential to help the agricultural industry of Escondido to rebound from its recent losses.

The City of Escondido limited potable water usage in the periods prior to April 2017, when the Governor of California formally ended the statewide drought. However, even though the severe restrictions were removed, the City continues to use water efficiently and these efficiencies are codified in the Escondido Municipal Code, article 5. This project will provide the City more flexibility the next time local or statewide drought conditions exist.

Evaluation Criterion 2—Environment and Water Quality (12 Points)

How the Project directly or indirectly affects or improve surface, groundwater, or effluent discharge quality; will restore or enhance habitat for non-listed species; will address problems caused by invasive species; or will provide water or habitat for federally listed threatened or endangered species is presented below by reprinting the questions and providing responses to related application questions:

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?

Because the project is designed to provide enhanced recycled water to use for agricultural resources, it will improve the otherwise negative impact on the groundwater itself. The project does not include any use or extraction of groundwater; because it reduces the amount of potable water required to irrigate the agricultural resources, it ultimately reduces the demand on groundwater resources. The proposed project concept would improve the quality of recycled water to local agricultural growers and capture valuable water resources. This improved recycled water for the farmers would also improve the quality of the surface water being circulated around the Escondido area.

Since unnecessary groundwater extraction is harmful, the decrease in pumping and the percolation of a source of water which is higher in quality than the groundwater is beneficial to the watershed. This project also exceeds the Salt and Nutrient Management Plan (SNMP) guidelines included in the IRWM.

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 project will decrease the amount of water the City of Escondido takes from the Colorado River and the State Water Project by 3,000 Acre Feet (AF) per year. This extra water will improve flow conditions along the river as well as help enhance the habitats created for non-listed species by the Colorado River. The project also reduces flow through the ocean outfall because the water running through it would instead be treated at the project site and distributed to farmers. The Escondido Creek flood control channel near the project site will remain unchanged and untouched throughout the whole process.

Discharges to Reidy Creek, which flow into the Escondido Creek, will be treated through on site Low Impact Design (LID) stormwater ponds which demonstrated a higher water quality entering the Waters of the US (Escondido Creek). If flow conditions in the stream channel are increased, this benefits the habitat in the creek as described in the project biological report.

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

Because the project site has been deemed too small to house any threatened or endangered species, there will not be harm or disruption to them caused by the project. Rather, the MFRO facility will produce clean water for the whole Escondido area, effecting any threatened or endangered species located within impact of the project. In addition, the project will reduce the amount of water taken from the Colorado River and State Water Project by the City of Escondido, leaving more water for any threatened or endangered species living along the Colorado River. While this may indirectly enhance habitat, the lowered demand for surface water could have a positive impact on any species that are relying or living off of these waters.

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

Because the MFRO facility is a drought-proof water supply, it will be very reliable for the City of Escondido. There are facilities that are located upstream that are designed to rid the water of invasive species. Because there will be less water being transported through these facilities, less chemicals will be needed to reach the concentration necessary to rid the water of invasive species. This will make it easier to keep invasive species away from the project and result in a clean, reliable water supply.

Since this project's water quality is better than groundwater, it will reduce threats to wildlife and their habitat when farmers use it for irrigation instead of groundwater.

Evaluation Criterion 3—Economic Benefits (35 Points)

Subcriterion No. 3a—Cost Effectiveness (10 Points)

The cost per acre-foot of water expected to be delivered upon completion of the Project and how the cost of the Project compares to a water supply alternative. Please use costs related to the entire Project, not just the cost of work over the next two years or the phase that is currently being constructed.

- 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) as shown in Table 2-2.**

Table 2-2 – Estimated Construction Costs by Year	
Calendar Year	Construction Cost
2021	\$17,680,000
2022	\$27,020,000

b. The total estimated or actual costs to plan and design the Project.

The total cost for Planning, Design, and Engineering is approximately \$5,137,111.00, as identified within the “BUDGET INFORMATION FOR CONSTRUCTION PROGRAMS_SF-424C” form attached herein.

c. The average annual operation and maintenance costs for the life of the Project. Please do not include 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.

Per the Project Delivery Report, the Project Annual Operation and Maintenance Costs (including amortized replacement costs) upon completion is estimated to be \$2,400,000 per year.

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

The Project is anticipated for completion and will be able to deliver enhanced Title 22 recycled water by the end of 2022.

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 projected lifespan of the City’s reclamation project is calculated to be at least 60-years.

f. All estimated replacement costs by year as shown in Table 2-3.

Table 2-3 – Replacement Costs by Year			
	Description of Replacement Requirements	Year	Cost
	Project Commissioning	2021	0
1.	Replacement of the RO Membranes	2026	\$250,000
2.	Replacement of the MF Membranes	2028	\$475,000
3.	Replacement of the RO Membranes	2031	\$250,000
4.	Replacement of the MF Membranes	2035	\$475,000
5.	Replacement of the RO Membranes	2036	\$250,000

Description of Replacement Requirements		Year	Cost
6.	Replacement of the RO Membranes	2041	\$250,000
7.	Replacement of the MF Membranes	2042	\$475,000
8.	Replacement of the RO Membranes	2046	\$250,000
9.	Replacement of the MF Membranes	2049	\$475,000
10.	Replacement of the RO Membranes	2051	\$5,300,000
11.	Replacement of the MF Membranes	2056	\$475,000
12.	Replacement of the RO Membranes	2061	\$250,000
13.	Replacement of the MF Membranes	2063	\$475,000
14.	Replacement of the RO Membranes	2066	\$250,000
15.	Replacement of the MF Membranes	2070	\$475,000
16.	Replacement of the RO Membranes	2071	\$250,000
17.	Replacement of the RO Membranes	2076	\$250,000
18.	Replacement of the MF Membranes	2077	\$475,000
19.	End of Expected Life	2081	\$0

- g. The maximum volume of water (in acre-feet) that will be produced annually upon completion of the Project. This volume of water must correspond to the costs provided above. If costs are only provided for a portion or phase of the project, then only the water produced by that same portion or phase of the project will be considered under this criterion.**

Projected water supply scenarios, demand projections, agriculture water quality requirements, and blending conditions have been evaluated as part of this project and the overall Reuse Program. As a result, the MFRO Facility treatment systems will be designed for a RO permeate production capacity range of 1.5 to 6.1 acre-feet per day. RO permeate will be blended with HARRF Title 22 water onsite for a total maximum blended product water capacity of 9.2 acre-feet per day. The facility will also be designed to accommodate the installation of additional equipment in the future that would produce an additional 3.1 acre-feet per day of RO permeate.

- 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 non-reclaimed 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.

The area in rural north County San Diego is highly agricultural with numerous groves. These industries are high volume water users and typically cannot utilize Title 22 water due to water quality issues for their crops. This has caused a large amount of these groves to be reduced and/or decommissioned. This has numerous negative effects and offering an alternate water supply is the viable answer to maintain these industries.

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 water supply alternative that would satisfy the same demand as the Project. Other water supply alternatives are not required but may be provided where available to demonstrate cost effectiveness of the Project.

These costs were reviewed in the North San Diego County Water Reuse Coalition Regional Recycled Water Project Final Program Environmental Impact Report, October 2015, and it was determined that treating Title 22 recycled water to a higher level was more cost effective if it reduced imported potable water. Since these concepts are relatively new, the actual costs for this scenario are not available but are in the planning and or construction phases.

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 is not available. It is intended to provide another possible comparison to demonstrate the cost effectiveness of the Project.

A cost per acre foot evaluation of a similar project is not readily available to the City.

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.

Currently, agriculture is a \$100,000,000 industry in the City of Escondido. However, recent droughts and overseas competition have forced many growers out of business, resulting in the loss of thousands of acres of agricultural land. If this downward trend in our agriculture continues without a cost-efficient solution to provide more water for our farmers, the economy of the City of Escondido will drastically decline.

Assuming an annual operating cost of \$2,400,000 and a lifetime of at least 60 years, the total lifetime operating costs of the proposed project will be approximately \$144,000,000. Adding the total Project cost of \$44,700,000 results in a total cost of \$188,700,000, ignoring any borrowing costs, which may be as much as an additional \$10,000,000. While the costs may appear to be high, the proposed facility will generate 3,000 AF per year over 60 years, for a total of 180,000 AF. Thus, a rough estimate of the cost per AF is \$1,060. These estimates do not include revenue from sales of recycled water and ignore borrowing cost. One alternative to the project could be receiving treated water from the San Diego County Water Authority (SDCWA). The City of Escondido currently does not receive treated water from the San Diego County Water Authority, only raw, but their pricing for treated water is listed at \$1,194 per AF, around \$200 more than

the calculated cost per AF of the proposed project. This would also involve having to transport more water into Escondido, instead of being able to process it and clean it in the city, which would provide easier access to our farmers as well as limit the greenhouse gases and wasted energy from transporting the water to Escondido.

Subcriterion No. 3b—Economic Analysis and Project Benefits (25 points)

Points will be awarded based on the analysis of the Project’s benefits relative to the Project’s costs. Please use costs related to the entire Project, not just the cost of work over the next two years.

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.

The capital and O&M costs are calculated utilizing Industry standard cost estimating standards and the Department of the Interior Cost Estimating Handbook for requirements at each phase.

The O&M period costs include the BOR required four components:

- Inspection
- Sampling and analysis
- Routine maintenance
- Reporting

The method utilized for capital costs is to use manufacturer costs and then use costs for each process since and compare to similar facilities. Since each project is slightly different, a project contingency is added to account for bidding anomalies, etc.

b. Quantified and monetized Project benefits, 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 costs of no action, and the willingness of users or customers to pay for a benefit or to avoid a negative outcome. If qualified and/or monetized information for these benefits is not available, they may be addressed in response to Question 2 below.

The economic impact of agriculture on the City of Escondido is approximately \$100,000,000 per year. Recent droughts and overseas competition have forced many growers out of business, resulting in the loss of thousands of acres of agricultural land. An inexpensive, drought-proof water supply would help Escondido’s farmers remain competitive, stop loss of agricultural land, and preserve this vital industry in Escondido. Assuming an annual operating cost of \$2,400,000

and a lifetime of at least 60 years, the total lifetime operating costs will be approximately \$144,000,000. Adding the construction costs of \$35,010,000 results in a total cost of \$179,010,000, ignoring any borrowing costs, which may be as much as an additional \$10,000,000. The proposed facility will generate 3,000 AF per year over 60 years, for a total of 180,000 AF. With a total lifetime cost expected to be \$179,010,000, a rough estimate of the cost per AF of the recycled water is \$1,060. Compared to the cities price of \$1,194 per AF of treated water, this offers a less expensive alternative. On top of that, this is a drought-resistant water supply, so this water will be available to Escondido's farmers all the time. Ultimately this provides a cheaper per acre foot cost and a higher water quality to the farmers and preserves one of Escondido's most important economic assets.

The costs for potable water, Title 22, and the proposed treated Title 22 water will be measured through the individual meters and an actual cost provided after the initial year of project implementation.

c. A comparison of the Project's quantified and monetized benefits and costs. Provide a comprehensive comparison of the Project's benefits and cost.

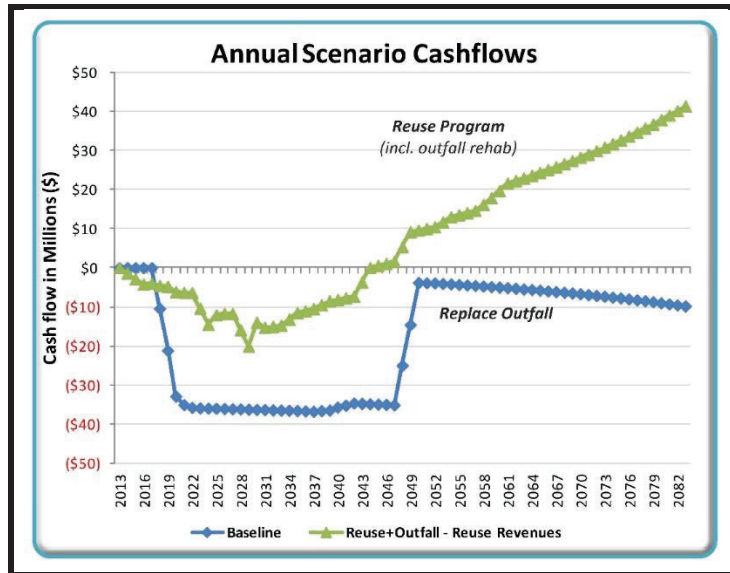
This information is not available at this time, but is estimated to be available after several years of project implementation. This will be through all of the various project streams, monitoring costs, O&M costs, etc.

d. A comparison of the Project's quantified and monetized benefits and costs. Provide a comprehensive comparison of the Project's benefits and cost.

The City of Escondido has developed a potable reuse program based upon a feasibility study produced in August 2014. The goal of study was to consider deferring or eliminating the need for a new outfall through 2050 and to develop a potable reuse program, including a review of the complete recycled water system, that benefits water supply, provides rate stability, and supports the local economy. To accomplish this key program goal, the project team evaluated upgrading the City's wastewater disposal systems, expanding its existing water recycling efforts, and options to ultimately move toward potable reuse involving the following three major elements:

- Perform a programmatic planning study that develops near-term and long-term reuse alternatives and determines the associated feasibility, costs, and benefits
- Prepare a cost-of-service analysis to evaluate the cost of recycled water in the existing system
- Develop an implementation plan for moving forward with the Reuse Program

The MFRO facility is one of several projects that are part of the program and is scheduled to be constructed in phase A of a Phase A, B, and C program. Each individual element of the program has undergone a rigorous rough and fine screening process, with consideration of capital, operations and maintenance costs. A detailed financial model was created to evaluate planning-level cash flow requirements and water costs of the reuse program and the Baseline Condition (outfall replacement) options. The following chart summarize the inputs and variables in the financial model, the scenarios evaluated, and the results.



The cash flow model results are favorable for the reuse program versus the Baseline Condition. The cash flow expenditure rates for the reuse program are slower and lower in magnitude than those for the Baseline Condition. The reuse program revenues help offset financing the reuse infrastructure and would eventually drive full cost recovery depending on the rate charged by the City. On a cumulative basis, the reuse program is predicted to save the City over \$1 billion compared to the Baseline Condition by 2065, which is a reasonable comparison point based on the useful life of the proposed infrastructure.

The models were also used to calculate the gross and net costs of water for comparison to existing and new water sources. To determine the water costs, it was assumed that the cumulative cash flows for the City would need to be \$0 at year 2065. The gross costs (costs to do the program overall) resulted in water costs ranging from approximately \$1,500 to \$1,700 per acre-foot. This is above the existing untreated water costs of \$1,100/AF, but substantially below other new water costs, such as the recent Carlsbad Desalination supply costs of \$2,300/AF. Even with potable water treatment costs added, the reuse program gross costs are attractive and less than those for the Carlsbad Desalination costs. When the Baseline Condition is factored in (i.e., the costs that would have to be paid to address the outfall without the reuse program), the costs drop to approximately \$600/AF to \$800/AF. This is referred to as the net costs and the results support the overall conclusions that the reuse program is the appropriate investment.

2. **Some Project benefits may be difficult to quantify and/or monetize. Describe any economic benefits of the Project that are not captured above or 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 (e.g., water reliability, water quality, recreation, etc.).

The following are all benefits that are difficult to quantify, however, these benefits are direct and indirect benefits to the City and make a large impact to the surrounding community, environment, and resources in the area. Those direct and indirect benefits are described below:

- Reducing Green House Gas emissions by minimizing the amount of imported water, minimizing the amount of raw water needs to be pumped to Escondido, preventing agricultural workers from having to travel to remotely located farms, and supporting the agriculture industry which reduces CO2 in the atmosphere (supporting the Lima-Paris Action Plan)
- Encouraging the agricultural economy which has suffered recently due to the cost of water. Lower water prices will sustain avocado grove profitability and the local economy.
- Assisting with the Water Shortage Contingency Plan (WSCP) in Escondido and the Water Shortage and Drought Response Plan (WSDRP) operated by San Diego County Water Authority (SDCWA).
- Increasing the use of Title 22 recycled water from HARRF, minimizing the chances having non-treated discharges to the Escondido Creek, and avoiding the limitations imposed by the California Regional Water Quality Board Order number R9-2015-0026.
- The design includes an aesthetically pleasing addition to the surrounding neighborhood, minimizing concerns from business owners. Community outreach which includes communicating the details of the project, and gathering feedback from the community, will continue as the project progresses through construction, commissioning and start-up.
- Utilizes existing infrastructure, minimizing excavation in the right of way outside of the MFRO Facility site. The Title 22 recycled water feed line and the brine line are existing.
- The alternative water source accommodates the City of Escondido with more local and tourist recreation due to a reduction in the demand placed on Lake Wohlford and Dixon Lake.
- Reduces water taken from Lake Wohlford and Dixon Lake which provides greater flexibility in preserving water levels for recreation and maintaining riparian habitat. Assists with taking advantage of upgrades to the Lake Wohlford dam designed to restore historical capacity of 6500 acre-feet.
- Stabilizing and rehabilitating groves/trees reduces the carbon footprint because local growers translate to less imported fruit, less long-distance transportation to deliver the fruit, and less global emissions.
- The MFRO Facility, using Low Impact Design (LID), enhances the water quality of any storm water discharges that enter the adjacent Escondido Creek.
- Conserves SDG&E resources (time, money, man-power) associated with the Water Infrastructure and System Efficiency Program (WISE)

Evaluation Criterion 4—Department of Interior and Bureau of Reclamation Priorities (10 Points)

The Project supports the Department of the Interior and Reclamation priorities as presented below by reprinting the priorities listed in the application and providing a response to each (You may address only the parts of a priority that are applicable. It is not necessary to address priorities, or parts of priorities, that are not applicable to your Project. (A Project will not necessarily receive more points simply because multiple priorities are addressed. The points available under this criterion will not be divided among the priorities, and projects will not be penalized if some of the priorities are not applicable. Points will be allocated based on the degree to which the Project supports one or more of the Priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.):

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 Reuse Program generally includes constructing a Membrane Filtration (MF) and Reverse Osmosis (RO) water treatment facility (MFRO Facility) for agriculture reuse, a pipeline extension from the existing recycled water supply system to the MFRO facility, the development of a brine reject waste return pipeline to HARRF, converting the existing 1.2 million gallon (mg) Hogback Tank to a recycled water storage and agriculture supply reservoir, and a new agriculture reuse conveyance and distribution system. The program also includes a future potable water reuse Advanced Water Purification Facility (AWPF) that may be implemented based on successful MFRO Facility operations and anticipated future development of potable reuse regulations. The AWPF may be located at the same site as the MFRO Facility. The MFRO Facility will utilize multiple systems including membrane, cleaning and maintenance, pumping, storage, piping, chemical feed, building mechanical, electrical and instrumentation and control systems for water treatment and overall facility development. The long-lead equipment items including the Membrane Filtration (MF) System and Reverse Osmosis (RO) System will be designed by MF System Supplier and RO System Supplier. The equipment will be designed and procured by the City concurrent with the overall facility design.

The agricultural economy of Escondido has suffered lately due to the high cost of water as well as recent drought. However, this project will encourage that sector of the economy by providing a drought proof water supply as well as lower water prices that will support the avocado grove profitability and, in turn, the local economy.

- b. **Examine land use planning processes and land use designations that govern public use and access.**

The project site is located within a developed area located on City owned land. Surrounding land uses consist of commercial and industrial developments. The site occurs on flat land, at an elevation range of approximately 672 feet above amsl to 674 amsl. The project site itself is largely disturbed, consisting of very little vegetation throughout most of the site. Sparse ornamental

trees are located along the northern, western, and eastern edges of the site, both within and just outside project boundaries. Reidy Creek Flood Control Channel, a concrete-lined channel with no riparian vegetation, is located to the south of the project site and parallels the southern border. Historical uses on the project site, such as vehicle use, equipment storage, and stockpiling, have significantly reduced the quality of the habitat on the project site.

To minimize excavation in the right-of-way outside of the MFRO facility site, the project utilizes existing infrastructure. The existing Title 22 recycled water feed line, and brine line, have been installed as part of previous investments by the City of Escondido in this project. The project also provides the potential for alternative energy sources with solar power and potentially future wind power.

A Biological Resources Assessment was conducted in January 2019 to evaluate biological resources within the project site and surrounding vicinity, and provide biological recommendations based on literature reviews, and the survey of the project site. Prior to conducting the field survey, biologists conducted a database search and review of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (CDFW, 2016) and California Native Plant Society (CNPS) Rare Plant Inventory (CNPS, 2016) for recorded occurrences of special-status plant and wildlife species within the Escondido, California 7.5-minute USGS topographic quadrangle and the eight surrounding USGS quadrangles.

The U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource Report for federally-sensitive biological resources known to occur near the Project site was also reviewed (USFWS 2016). Combined, the sources reviewed provided a comprehensive baseline from which to inventory the biological resources potentially occurring on the project site and within the general area.

c. Revise and streamline the environmental and regulatory review process while maintaining environmental standards.

The City is nearing completion of the CEQA Plus document. The Mitigation and Monitoring and Reporting Plan (MMRP) is a part of the IS/MND. The MMRP will be included as a part of the Contract Documents which ensures the environmental requirements will be implemented as the project progresses.

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

The proposed project does comply with the Department of Interior's water storage, transportation, and distribution systems guidelines. The project provides a water conservation alternative. The proposed project will recycle water that would otherwise be discharged into the ocean and use this water to support the farmers of Escondido.

The project also reduces potable water demands and therefore assists the Water Shortage Contingency Plan (WSCP) in Escondido and the Water Shortage and Drought Response Plan (WSDRP) operated by San Diego County Water Authority (SDCWA). It also increases available capacity in the Escondido Land Outfall (ELO).

e. Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands.

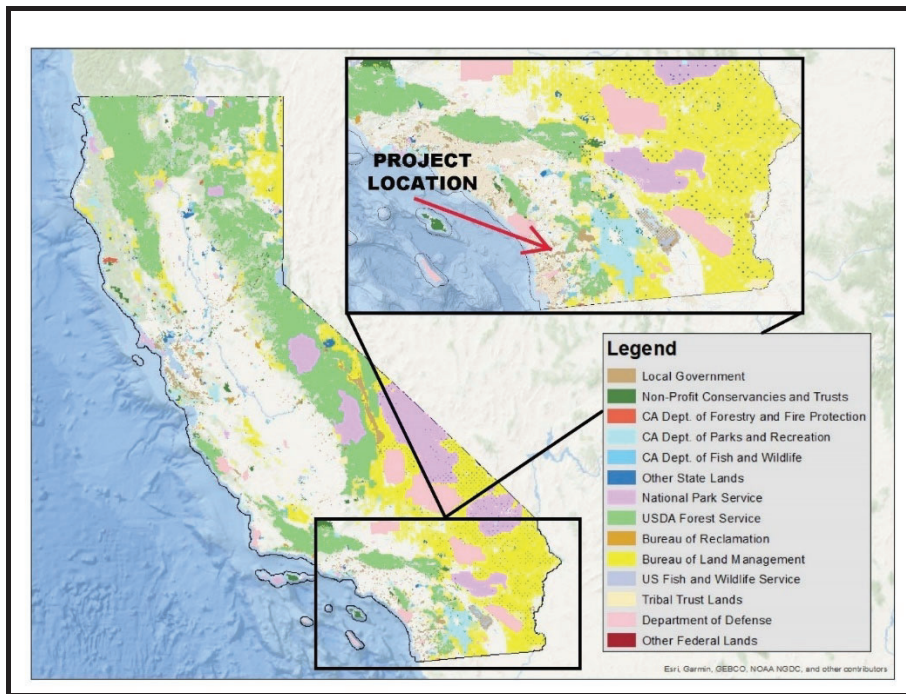
The City of Escondido’s Utilities Department is part of the California Urban Water Conservation Council (CUWCC), which promotes, educates, and provides resources (such as outreach and educational resources) to encourage water conservation amongst its members for the betterment of the ratepayers. The City’s proposed recycled water project will promote and implement these ideals through the reclamation and recycling of wastewater that normally would be flushed out to sea and recaptured for agricultural usage.

The project assists with the Water Shortage Contingency Plan (WSCP) in Escondido and the Water Shortage and Drought Response Plan (WSDRP) operated by San Diego County Water Authority (SDCWA).

Additionally, the City of Escondido is an active participant in the North San Diego Water Reuse Coalition, a group of 9 North San Diego County water and wastewater agencies who work collaboratively to expand the region’s recycled water production and use. One of the primary goals of this group is to improve inter-agency cooperation.

f. Identify and implement initiatives to expand access to DOI lands for hunting and fishing.

In the figure below, the yellow represents the lands designated by the Bureau of Land Management or (BLM-Land). BLM-Land provides the opportunities to hunt and fish. The City supports all such efforts, however the MFRO Facility Project is shown many miles from such opportunities.



g. Shift the balance towards providing greater public access to public lands over restrictions to access.

The City favors every attempt to provide greater public access to public lands, it is not applicable to the MFRO Facility since the location of the recycling treatment facility and distribution pipelines service farmers in Escondido, California, and any transfer of lands, public or private, are not practical. However, this project has been located/sited in a parcel with few other potential uses for the public so as not to encumber land that could be utilized for public access. This treatment facility will be offered to the public for tours once in operation.

2. Utilizing our natural resources

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

Recycled water is often an underutilized resource, which our project will help the farmers of Escondido take advantage of. Historically, the City has imported approximately 20,000 AF annually, which is very energy intensive. These imports come from two sources: The State Water Project, and the Colorado River, with each source representing about half of the import. This project will offset about 3,000 AF annually of imported water. If we assign half of this offset to each of our primary sources, then the Colorado River and the State Water Project import will each be offset by 1,500 AF, allowing that water to be used by other cities experiencing water shortages. This will also be a drought-proof water supply, meaning it will meet demands even during drought periods. Escondido's farming community is currently served with potable water for irrigation. However, this potable supply is subject to curtailment. In fact, curtailments were in effect in 2015 – 2016 that significantly reduced available agricultural water. Farmers who connect to the recycled water system will no longer be subject to curtailment of water deliveries and will constantly have access to the water they need to grow their crops.

Currently there is a peak in non-recycled water usage between 7 and 9 AM. After construction of the MFRO Plant, agricultural users will be able to irrigate with the treated water at varying times; reducing stress and competition on daily peak potable water demands.

The MFRO plant has many different technologies and resultant effects that conserve energy throughout the city of Escondido. First, Variable Frequency Drive's (VFD) reduce pump energy usage by about \$250,000 annually, based on \$0.15 per KWH. Next, the plant conserves energy by reducing the amount of agricultural users utilizing personal wellheads and Reverse-Osmosis (RO) systems by providing less expensive, and better quality, water in a centralized location with more efficient pumps which results in reduced energy use and energy efficiency evaluation and monitoring in fewer locations. Finally, the plant reduces energy used at the Escondido water treatment plant due to lower flows, since agricultural use will be from the MFRO facility. The lower amount of water treated results in less energy used by the treatment plant's high service pumps.

b. Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications

The project does not restrict access to any mineral resources. However, this project has been located/sited in a parcel with few other potential uses for the public so as not to encumber land

that could be utilized for mineral resources, or other scientific, technological, or military applications.

c. Refocus timber programs to embrace the entire “healthy forests” lifecycle

This project allows groves to stay healthy and not be abandoned. If this project is not implemented, then the potential for these groves to be abandoned is higher which causes harm to the groves and micro ecosystem. This project also reduces the demand of potable water which can be used for healthy forests and keeps this water for these purposes, and the majority of the construction will limit the use of timber by primarily using steel or concrete.

d. Manage competition for grazing resources

While this project does not have a direct impact on grazing land it reduces overall potable water demand allowing redirection to water for other purposes.

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

A major benefit of this project is providing alternate water supply sources to local customers and being a steward of the local resources. Since many native American tribes utilize groundwater resources this project will potentially eliminate large users from utilizing the groundwater supply.

b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities

The purpose of the Project is to provide a high-quality water supply low in TDS and chlorides to local avocado growers, who serve a vital role in the City of Escondido’s economy. While planning the site of the project, a Sacred Lands File search for the project APE completed by the Native American Heritage Commission (NAHC) yielded positive results. The San Luis Rey Band of Mission Indians indicated that sensitive discoveries have occurred immediately north of the Escondido Creek channel, and that the project area is considered sensitive to the tribe. Additionally, letters regarding the project were sent on March 8, 2019 to all contacts listed by the NAHC. One response been received. In a letter dated March 22, 2019, the Viejas Band of Kumeyaay Indians (Viejas) indicated that the general project area has cultural significance or ties to Viejas and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activities to inform them of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. In accordance with the requirements of AB 52, the City sent notification to four Native American Tribes traditionally and culturally affiliated with the project area on July 31, 2019. In a response dated August 12, 2019, the Rincon Band of Luiseño Indians (Luiseño) identified the location as being within the Territory of the Luiseño people, and also within Rincon’s specific area of historic interest. Furthermore, Rincon identified one Luiseño place name within close proximity to the project site. As such, Luiseño requests the completion of an archaeological record search and assessment with results being provided to the Rincon Band. This consultation and outreach to the neighboring tribes satisfied Assembly Bill AB-52 as well as the CEQA consultation requirements.

Construction related CWRCB MMRPs and National Environmental Policy Act (NEPA) compliance measures will be presented and stressed during the construction kick-off meeting. Strict monitoring of related activities will be performed throughout the duration of construction. The project also Achieves California Office of Historic Preservation (OHP) goals and requirements, through the State Historic Preservation Office (SHPO).

Maintaining Lake Wohlford and Lake Dixon levels are necessary, as assisted by the project, to comply with both respective Multiple Habitat Conservation Plans (MHCP) for riparian/wetlands and to promote the San Diego County Vector Control Program, encouraged by the City of Escondido.

The project utilizes existing infrastructure minimizing excavation in the right of way outside of the MFRO facility site. The existing Title 22 recycled water feed line, and the brine line, have been install as part of previous investments by the City of Escondido in this project. The MFRO plant is also proposed to be constructed upon previously disturbed City owned land. Additionally, site grading requirements associated with the facility design will reduce sediment entering Reidy Creek. Reidy Creek flows into Escondido Creek, which carries sediment to San Elijo Lagoon which is a 303(d)-listed waterbody due to sediment (IRWM pgs. 5-33 & 5-34). The MFRO facility improves current grading conditions and eliminates sediment entering the creek. Finally, the design includes an aesthetically pleasing addition to the surrounding neighborhood minimizing complaints from commercial and industrial owners.

The proposed project also includes an Outreach Program. This program will be used as a platform to keep the community informed about the project itself as well as the progress of the project as it is being built.

4. *Striking a regulatory balance*

a. Reduce the administrative and regulatory burden imposed on U.S. industry and the public

This project does not have a minimal regulatory burden since it complies with existing regulations. All of the environmental processes have been completed with no conflicts due to the fact that this is an environmentally safe and follows all regional planning studies goals for the project. For example, the implementation of the MFRO Facility will reduce Green House Gas emissions associated with treatment and conveyance of raw and treated drinking water supplies currently used by growers for crop irrigation.

The project does not require new regulations to be analyzed with pilot studies, etc., but solely applies existing regulations to the project.

b. Ensure that Endangered Species Act decisions are based on strong science and thorough analysis.

The potential for the project site to support special-status plant and wildlife species is low due to its location, size, level of disturbance, and poor-quality habitat. No special-status plants were

detected during the field survey and are not expected to occur; thus, no impacts to special-status plants would occur and no mitigation measures are required.

5. *Modernizing our infrastructure*

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

Modern infrastructure adapts to emerging technology. Although this is not technically a Public/Private partnership it does require partnership with the private agricultural industries to abandon groundwater sources and utilize new enhanced Title 22 recycled water.

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

The new MFRO facility provides the opportunity for new technologies in the area, promoting private sector efforts that can improve service to the agricultural users using the enhanced recycled water.

c. Prioritize DOI infrastructure needs to highlight:

i. Construction of infrastructure

This new infrastructure proposed project is supporting collaboration between the public and private sectors. The City of Escondido (Public), is building a water treatment facility to support the farmers of the area (private). Together these groups are working to modernize infrastructure in the area and support the economy of Escondido.

ii. Cyclical maintenance

Cyclical maintenance will be needed on the proposed project, but the project budget accounts for these expenditures. The design provides easy access to the membranes, and selection of state-of-the-art technology and equipment allows cyclical maintenance to occur less frequently and efficiently.

iii. Deferred maintenance

No part of the project is related to deferred maintenance. The MFRO project proposed does defer replacement of the wastewater outfall by reducing flows sent to the outfall, therefore increasing available capacity through Year 2060. The project also expedites a new, high quality supply to local agriculture and helps to promote and support the local economy. The project measurably decreases Escondido's vulnerability to drought or water supply depletion and reduces the reliance on imported and potable water by producing a new, high quality water supply to local agriculture. The MFRO Facility will provide advanced treatment to Title 22 recycled water produced at Hale Avenue Resource Recovery Facility (HARRF) for agriculture use. The facility will utilize membrane filtration (i.e. microfiltration or ultrafiltration membranes (MF/UF)) and reverse osmosis (RO) technologies sized for a minimum RO permeate production capacity of 0.5 million gallons per day (MGD), and a maximum permeate production capacity of 2.0 MGD. Provisions for potential future treatment equipment installation include an additional 1.0 MGD of RO production capacity. High quality treated water (RO permeate) will be blended with Title

22 recycled water within an on-site, potentially partially buried blend tank and then pumped off-site for distribution to agriculture users.

Reclamation Priorities

1. ***Increase Water Supplies, Storage, and Reliability under WIIN and other Authorities***

Recycled water is often an underutilized resource, which this project will help the farmers of Escondido take advantage of. Historically, the City has imported approximately 20,000 AF annually, which is very energy intensive. These imports come from two sources: The State Water Project, and the Colorado River, with each source representing about half of the import. This project will offset about 3,000 AF annually of imported water. If we assign half of this offset to each of our primary sources, then the Colorado River and the State Water Project import will each be offset by 1,500 AF, allowing that water to be used by other cities experiencing water shortages. This will also be a drought-proof water supply, meaning it will meet demands even during drought periods. Escondido's farming community is currently served with potable water for irrigation. However, this potable supply is subject to curtailment. In fact, curtailments were in effect in 2015 – 2016 that significantly reduced available agricultural water. Farmers who connect to the recycled water system will no longer be subject to curtailment of water deliveries and will constantly have access to the water they need to grow their crops. Title XVI, WIIN and other Authorities help to financially support project such as this.
2. ***Streamline Regulatory Processes and Remove Unnecessary Burdens to Provide More Water and Power Supply Reliability***

This project has the following key benefits to provide more water and power supply reliability:

 - reduces energy due to reducing the amount of long-distance raw water pumping from the State Water Project and Colorado River;
 - reduces stress on daily peak potable water demand as it allows agricultural users to irrigate at varying times and provides more supply from the recycled water system;
 - Variable Frequency Drives (VFDs) reduces pump energy usage and provides more energy reliability; and
 - conserves energy by reducing the number of agricultural users utilizing personal wellheads and Reverse-Osmosis (RO) systems.
3. ***Leverage Science and Technology to Improve Water Supply Reliability to Communities***

This project includes membrane filtration (MF) and Reverse Osmosis (RO) equipment to further treat recycled water to a level in which it can be used by agricultural customers in lieu of potable water for irrigation. Many years of science and testing have been done to get the MF and RO technologies were they are today, and continue to be developed trending toward potable reuse.

This best available technology meets the goals of the Escondido community at large by producing an agricultural recycled water supply and reducing this demand from the potable water supply system, resulting in a more reliable supply of water for the agricultural communities. By moving

agricultural demands from the potable to recycled water system, more potable water is available for residential communities.

In addition to MF and RO technologies, the Project will utilize multiple other technologies including: clean in place systems, pumps, chemical feed systems, building mechanical, electrical and instrumentation and control systems for water treatment and overall facility development.

4. ***Address Ongoing Drought***

This project provides a drought tolerant water supply for agricultural customers separate from the potable water supply. Sewage flows only reduce minimally during drought conditions and after advanced treatment would be a more reliable source for agricultural users. This project will offset about 3,000 AF annually of imported water. If we assign half of this offset to each of our primary sources, then the Colorado River and the State Water Project import will each be offset by 1,500 AF, allowing that water to be used by other cities experiencing water shortages.

The agricultural economy of Escondido has suffered lately due to the high cost of water as well as recent drought. However, this project will encourage that sector of the economy by providing a drought proof water supply as well as lower water prices that will support the avocado grove profitability and, in turn, the local economy.

5. ***Improve the Value of Hydropower to Reclamation Power Customers***

This project involves the storage and conveyance of an advanced treated reclamation water supply. This does not directly impact Hydropower but conserves energy and advances reclamation usage as outlined in the BOR's other Reclamation Principles.

6. ***Improve Water Supplies for Tribal and Rural Communities***

The Project sponsor's service area is The City of Escondido. While there is a population greater than 50,000 in the city itself, the area surrounding the city is considered rural farmland.

The project benefits Disadvantaged Communities (DAC) by reducing stress on the potable water treatment and distribution systems and postponing associated related rate increases. The MFRO Facility was selected based on economic analysis.

Throughout the City of Escondido, there are many economically disadvantaged communities as seen in the figure in this application.

7. ***Implementation of new Title Transfer authority pursuant to P.L. 116-9***

The Bureau of Reclamation has established the transfer process to construct dams, canals, and hydropower plants that provide water and power in the 17 western states. The title transfer process followed a framework that Reclamation and its partners collaboratively developed, and which included NEPA and other legal requirements, and involved project stakeholders. This same principle is involved in this project to involve stakeholders and associated entities to develop reclamation infrastructure. However, this project does not involve official Title transfer per the March 12, 2019, the President signed into law the John D. Dingell, Jr. Conservation, Management

and Recreation Act (P.L. 116-9). Title VIII of this Act it does act to continue the construction of reclamation storage and conveyance facilities.

Evaluation Criterion 5—Reclamation’s Obligations and Benefits to Rural or Economically Disadvantaged Communities (8 points)

Subcriterion No. 5a—Legal and Contractual Water Supply Obligations (4 Points)

The Project indirectly relates to the Reclamation’s mission and/or serves a Federal interest regarding Legal and Contractual Water Supply Obligations as follows (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. Note: a Project may help Reclamation fulfill its obligations even if the project sponsor is not a Reclamation contractor, and indirect benefits to Reclamation will also be considered under this criterion.)

The project indirectly relates to the Reclamation’s mission and serves as an indirect federal interest regarding water supply the San Luis Rey Indian Water Rights by potentially using less raw water for agricultural uses from the San Luis Rey River. The extent to which the settlement, San Luis Rey Indian Water Rights Settlement Act of 1988, P.L. 100-512, has been fulfilled and any possible advantage the project could have, though extremely small, has not been assessed.

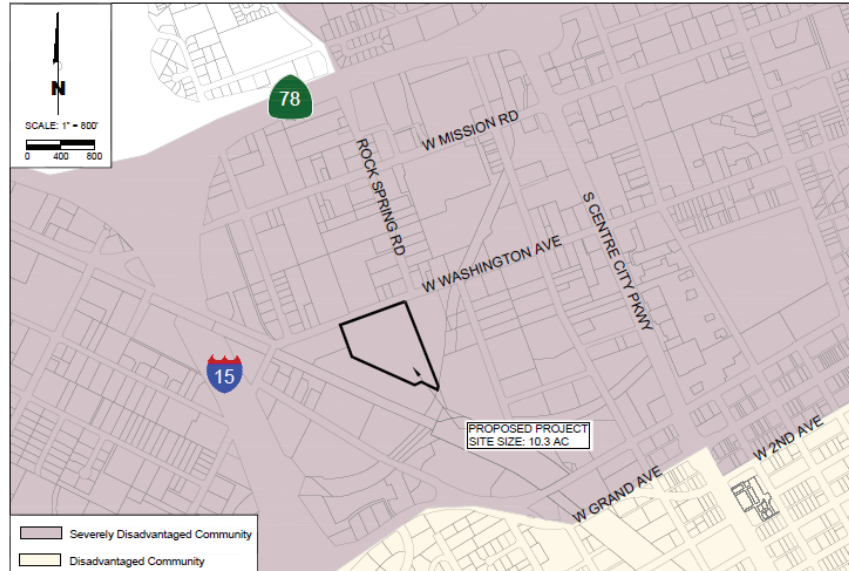
Subcriterion No. 5b—Benefits to Rural or Economically Disadvantaged Communities (4 Points)

The Project serves rural communities and/or economically disadvantaged communities in rural and/or urban areas as presented below by reprinting the questions and providing responses to related application questions:

- 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.**

The purpose of this project is to provide clean, recycled water to the farmers of Escondido. Even though the project site is located in the city with a population greater than 50,000 people, the water treated from the project is transported to the farmers on the outskirts of town which is considered a rural community.

The project is located within a disadvantaged community, as shown in the figure below.

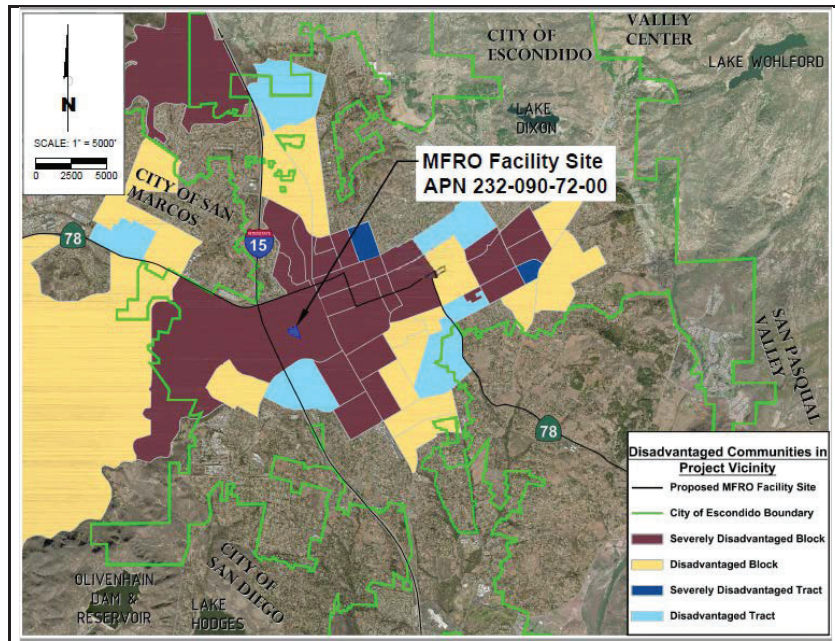


2. **Are any rural or economically disadvantaged communities within the Project sponsor’s service area? If so, provide supporting information. This may include neighborhoods or census tracts within a larger service area that are economically disadvantaged, and/or rural areas that are part of a larger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

The Project sponsor’s service area is The City of Escondido. While there is a population greater than 50,000 in the city itself, the area surrounding the city is considered rural farmland.

The project benefits Disadvantaged Communities (DAC) by reducing stress on the water treatment and distribution system and postponing associated related rate increases. The MFRO Facility was selected based on economic analysis.

Throughout the City of Escondido, there are many economically disadvantaged communities as seen in the figure below



Evaluation Criterion 6—Watershed Perspective (10 Points)

Points will be awarded based on the extent to which the Project promotes or applies a watershed perspective by implementing an integrated resources management approach, implementing a regional planning effort, forming collaborative partnerships with other entities, or conducting public outreach.

A watershed perspective generally means an approach to planning directed at meeting the needs of geographically dispersed localities across a region or a watershed that will take advantage of economies of scale and foster opportunities for partnerships. This approach also takes into account the interconnectedness of water and land resources, encourages the active participation of all interested groups, and uses the full spectrum of technical disciplines in activities and decision making.

The Project promotes and applies a watershed perspective by implementing an integrated resources management approach, implementing a regional planning effort, forming collaborative partnerships with other entities, and conducting public outreach. Specifics are presented below by reprinting the questions and providing responses to related application questions:

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

Yes. The recycling infrastructure for Escondido, of which this project is part, has been partially funded through the San Diego Integrated Regional Water Management (IRWM) process. Approximately \$2,000,000 is funded through the IRWM Proposition 84 process to construct the MFRO Facility. The award of this grant demonstrates how this project is consistent with the 2013 San Diego IRWM Plan (<http://www.sdirwmp.org/2013-irwm-plan-update>), which has the following goals:

- Improve the reliability and sustainability of regional water supplies.
- Protect and enhance water quality.
- Protect and enhance our watersheds and natural resources.
- Promote and support sustainable integrated water resource management.

This project helps improve the reliability and sustainability of regional water supplies by taking treated wastewater and reusing it for agricultural use, rather than transporting the treated wastewater over 20 miles for discharge into the ocean. Providing agriculture with an alternative source of water allows existing water supplies to be directed to its highest and best use (potable water supply).

This project also addresses the following objectives in the 2013 California IRWM plan:

- **Objective A – Encourage integrated solutions to water management issues and conflicts**
Southern California has recently experienced an extended drought coupled with State-wide water supply issues (limitations of water supply from the Colorado River and protection of smelt in the Bay Delta), which has made it clear that the region needs to find its own sources of water to supplement supply from historical sources. Recycling wastewater helps reduce the demand for supply from outside sources.
- **Objective B – Maximize stakeholder and community involvement and stewardship:**
Some of the water that is being recycled originates from another agency (City of San Diego), which supports this project. In addition, this project is included in the preliminary environmental impact report and feasibility study prepared by the North San Diego County Water Reuse Coalition, a group of North San Diego County water and wastewater agencies.
- **Objective E – Develop and maintain a diverse mix of water resources:**
Southern California has historically relied on imports from outside of the region. Recycling water allows us to diversify our water sources.
- **Objective F – Construct, operate, and maintain a reliable infrastructure system:**
At present we are largely dependent on imported water. However, this is dependent on our ability to obtain water imports. Water recycling facilities will form part of a reliable infrastructure system in the future.

The City passed a resolution in August 2015 supporting the 2013 San Diego IRWM Plan. The City of Escondido is represented in the IRWM planning process through the San Diego County Water Authority.

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

Yes, Escondido is home to hundreds of acres of farmland, which the project will supply water. Currently, much of this water flows to the outfall and into the ocean because it is deemed unfit for agricultural use, but if it gets treated by the proposed project, it will be recycled and help meet the water supply needs of the large farming community of Escondido.

The project does help meet the water supply of a large area because it reduces water taken from Lake Wohlford, Lake Dixon, the San Luis Rey Watershed, and other imported sources for agricultural uses. This will help supply water to other communities in needs, as well as help maintain water levels in natural resources such as the lakes.

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

Yes, The City of Escondido's Utilities Department is part of the California Urban Water Conservation Council (CUWCC), which promotes, educates, and provides resources (such as outreach and educational resources) to encourage water conservation amongst its members for the betterment of the ratepayers. The City's proposed recycled water project will promote and implement these ideals through the reclamation and recycling of wastewater that normally would be flushed out to sea and recaptured for agricultural usage.

Additionally, the City is an active participant in the North San Diego Water Reuse Coalition, a group of 9 North San Diego County water and wastewater agencies who work collaboratively to expand the region's recycled water production and use. One of the primary goals of this group is to improve inter-agency cooperation.

Finally, the project itself is a collaboration between public and private sectors. The City of Escondido (public) has spearheaded this treatment project to stop wasting recycled water by discharging it into the ocean. This recycled water will be provided to the farmers (private) of Escondido, helping grow their businesses and boost the economy of Escondido.

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

Yes, part of the project plan includes an outreach program to provide the public with information on the project itself as well as the effects of the proposed project. The outreach program is also designed to update the public on the progress of construction as it is being built. It is also anticipated that public tours of the facility will be held once operational.

Outreach, meetings and responses have been accomplished with construction monitoring requirements agreed upon and established with California Native American Tribes to fulfill Assembly Bill AB-52 and the CEQA consultation requirements.

The project has also achieved California Office of Historic Preservation (OHP) goals and requirements, through the State Historic Preservation Office (SHPO). Additionally, construction related CWRCB MMRPs and National Environmental Policy Act (NEPA) compliance measures will be presented and stressed during the construction kick-off meeting. Strict monitoring of related activities will be performed throughout the duration of construction.

The project also works to maintain Lake Wohlford and Dixon Lake levels which are very necessary to comply with both respective Multiple Habitat Conservation Plans (MHCP) for riparian/wetlands as well as the San Diego County Vector Control Program.

2.) Environmental and Cultural Resources Compliance

The potential environmental and cultural resources impacts associated with the project are presented below by reprinting and answering the following list of questions which focus on the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and Endangered Species Act (ESA) requirements.

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

Soil

The following points are taken from the *“Biological Resources Report for the Escondido Membrane Filtration Reverse Osmosis (MFRO) Facility Project”* prepared by Helix Environmental Planning, which answer the above question and demonstrate how the site location will be sited within an industrial and already disturbed area and minimizes any impacts to the surrounding environment. The ambient noise is higher than what will be produced from the new MFRO facility, which ensures this project site meets all of the goals to be a good neighbor and blend in with the surrounding environment.

The project site is located in the heart of a developed industrial district within the City (See Figure 1 below from the *“Biological Resources Report for the Escondido Membrane Filtration Reverse Osmosis (MFRO) Facility Project”* prepared by Helix Environmental Planning). The site does not occur in or near lands identified for conservation or preserve configuration in the region. The only biological resources located near the site that are of local importance include the Reidy Creek and Escondido Creek flood control channels. Both reaches are concrete lined, but serve as important flood conveyance features for the local area, conveying storm water to natural downstream reaches of Escondido Creek that support regionally-important biological resources.

The project site is flat, with an elevation of approximately 656 feet above mean sea level (AMSL) to 644 AMSL. The MFRO Facility, including pipeline connections, is mapped as Visalia sandy loam, 2 to 5 percent slopes (USDA 2017). The Visalia series of soils is characterized by moderately well-drained, very deep sandy loams and are formed from granitic alluvial deposits (Bowman 1973). The pipeline alignment includes Visalia sandy loam, 2 to 5 percent slopes; Placentia sandy loam, 2 to 9 percent slopes, warm MAAT, MLRA 19; and Ramona sandy loam, 2 to 5 percent slopes. The Placentia series is characterized by well-drained, sandy loam, clay and heavy sandy clay loam, and gravelly sandy loam horizons that formed in alluvium from granite and other rocks of similar composition and texture. The Ramona series is characterized by well-drained, very deep sandy loams that have a sandy clay loam subsoil

and are formed in granitic alluvium. The surface soils of the project site show sign of significant disturbance and alteration from their native state.

Dust

To preserve the air quality during construction, dust control measures will be taken such as wetting the soil. This will reduce dust from getting into neighboring property as well as getting into the flood channel at the southeastern end of the project site.

Water

To prevent silt from the construction site getting into the flood channel, a Storm Water Prevention Program (SWPP) will be put in place. This will be developed by the contractor and will be approved by necessary authorities before it is put into place and construction begins. Also, site grading requirements as well as utilizing Low Impact Design (LID) minimizes storm water from entering the adjacent Reidy Creek. Project specifications related to the storm water pollution prevention plan (SWPPP) will require best management practices (BMPs) minimizing storm water runoff entering adjacent Reidy Creek.

State Water Resources Control Board (CWQCB) Mitigations Measure, Mitigations Monitoring and Reporting Plan (MMRP) will be implemented as well as construction related CWRCB MMRPs and National Environmental Policy Act (NEPA) compliance measures which will be presented and stressed during the construction kick-off meeting. Strict monitoring of related activities will be performed throughout the duration of construction.

Finally, increased use of recycled water from HARRF will minimize the chances of having overflow discharges to the Escondido Creek, thus avoiding the limitations imposed by the California Regional Water Quality Board Order number R9-2015-0026. The California Regional Water Quality Board Order number R9-2015-0026 allows discharges to Escondido Creek, but only when all other listed options are unviable.

Animal Habitat

The project site is not expected to function as a wildlife corridor in its current condition, although birds may use trees on site. The project site is disturbed, surrounded by fencing, and within a developed industrial district. Impacts to wildlife movement and nursery sites would be less than significant, and no mitigation is required.

Project construction could result in potential significant impacts on nesting birds protected under the federal MBTA and CFG Code; however, the impacts would be reduced to less than significant levels with the implementation of proposed mitigation BIO-1, as described in detail below. The project would have no impact on any other special-status plant and animal species due to the lack of suitable habitat on the site and regular disturbance.

Mitigation Measure to be Employed during Construction

BIO-1 **Avoidance of Nesting Birds and Raptors.** To prevent direct impacts to nesting birds, including raptors, protected under the federal MBTA and CFG Code, the City shall enforce the following:

Project activities requiring the removal and/or trimming of vegetation suitable for nesting birds shall occur outside of the general bird breeding season (January 15 to September 15) to the extent feasible. If the activities cannot avoid the general bird breeding season, a qualified biologist shall be retained to conduct a pre-activity nesting bird survey within seven days prior to the activities to confirm the presence or absence of active bird nests. If no active bird nests are found by the qualified biologist, then the activities shall proceed with the reassurance that no violation to the MBTA and CFG Code would occur. If an active bird nest is found by the qualified biologist, then vegetation removal and/or trimming activities at the nest location shall not be allowed to occur until the qualified biologist has determined that the nest is no longer active. Avoidance buffers should start at 300 feet for passerine birds and 500 feet for raptors. However, buffers could be reduced at the discretion of the qualified biologist depending on the bird species and project activities required in the vicinity of the active nest.

The project also helps maintain Lake Wohlford and Dixon Lake levels, which are necessary, to comply with both respective Multiple Habitat Conservation Plans (MHCP) for riparian/wetlands.

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, would they be affected by any activities associated with the proposed Project?

The Federal Endangered Species Act (ESA) (7 United States Code [USC] 136; 16 USC 460 et seq. [1973]) extends legal protection to plants and animals, listed as endangered or threatened by the USFWS and gives authorization to the USFWS to review proposed federal actions to assess potential impacts to species listed as endangered or threatened. The ESA generally prohibits the “taking” of a federally listed species and adverse modification of designated critical habitat.

Special status plant species were evaluated for their potential to occur in the study area are listed in the “*Biological Resources Report for the Escondido Membrane Filtration Reverse Osmosis (MFRO) Facility Project*” prepared by Helix Environmental Planning. The analysis showed there are no special status plant species with the potential to occur on site due to lack of suitable habitat and regular disturbance.

Special status animal species were evaluated for their potential to occur in the study area are listed in the “*Biological Resources Report for the Escondido Membrane Filtration Reverse Osmosis (MFRO) Facility Project*” prepared by Helix Environmental Planning. The analysis showed there are no special status animal species with the potential to occur on site due to lack of suitable habitat and regular disturbance.

As part of the Biological Resources Report, a general biological survey of the project site was conducted by Helix Environmental Planning on January 28, 2019. During the biological survey, there were no candidate, sensitive, or special status plant or wildlife species observed.

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.

According to the Biological Resources Report, there are no federally protected wetlands on the project site, so there would be no impact to any wetlands within the project boundaries. Additionally, implementation of the BMPs described for the project would prevent adverse impacts to off-site federally protected wetlands, such as within the Reidy Creek flood control channel located downstream of the project, and Escondido Creek near the end of the MFRO product water pipeline alignment. Therefore, potential impacts on state or federally protected wetlands as a result of the proposed project would be less than significant.

As a standard construction practice and regulatory requirement, the City will implement Best Management Practices (BMPs) from the required Stormwater Pollution Prevention Plan (SWPPP) for the project, which may include:

- Installing and maintaining sediment and erosion control measures;
- Employing appropriate standard spill prevention practices and clean-up materials;
- Maintaining the project area free of trash and debris;
- Maintaining effective control of fugitive dust; and
- Properly storing, handling, and disposing of toxins and pollutants including waste materials.

d. When was the water delivery system constructed?

The City’s wastewater treatment plant, the Hale Avenue Resource Recovery Facility(HARRF), was constructed in the late 1950s and began operation in 1960. Multiple plant capacity expansions were made since then, and the addition of recycled water treatment capacity in the mid-1990s brought the plant to its current capacity. The existing recycled water distribution system was constructed in the mid-1990s, around the same time that tertiary capacity was added to the HARRF. The City has also recently installed a new, but so far unused, recycled water pipeline along the Escondido Creek flood control channel to convey MFRO treated water. This pipeline was completed in March 2016. The recycled water pipeline from the Escondido Creek flood control channel to the Hogback Reservoir is currently

in construction. The recycled water distribution pipeline from the Hogback Reservoir to agricultural users is in design, with construction anticipated to start in late 2020.

- 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 portions of the Reidy Creek and Escondido Creek flood control channels near the project site are concrete lined. Neither of these facilities will be permanently impacted by the MFRO Project due to the post hydromodification plan and existing drainage facilities near the site. However, temporary construction mitigation measures will be employed to ensure there are no impacts to any individual features of any irrigation systems.

Since the area is a developed industrial area the permanent stormwater drainage is handled by an existing 54-inch storm drain located along the east side of the site with a curb inlet close to the corner of West Washington Avenue and Rock Springs Road. The Reidy Creek concrete-lined Flood Control Channel is also located south of the project site. In addition, the project includes an on-site storm water biofiltration basin to capture, treat, and release the water at a controlled rate as dictated by the City's storm water requirements. The basin directs storm water into the existing 54-inch storm drain and then conveys the storm water to the Reidy Creek Flood Control Channel, utilizing the existing channel outlet. This treated storm water meets all water quality standards.

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

The National Register of Historic Places (NRHP) website was consulted and five addresses listed on the NRHP are within one mile of the Area of Potential Effect (APE), and include the Hotel Charlotta, the Thomas/Turrentine House, the Bandy House, the A.H. Beach House, and the Howell/Leighton House. However, all five of these addresses are located over a half-mile from the project, so impacts resulting from the project would not occur.

In addition, there are no officially designated state scenic highways in the vicinity of the project site. The nearest state scenic highway is State Route (SR) 52, which is approximately 18.5 miles south of the project site. The nearest eligible state scenic highway not officially designated is I-5, which is approximately 11.5 miles west of the project site. Additionally, the project site is not located near a scenic roadway identified in the City's General Plan (City 2012). Therefore, the proposed project would not damage scenic resources within a state scenic highway. Impacts would not occur.

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

The records search conducted by the SCIC indicated that 70 cultural resources have been previously recorded within a half-mile of the project APE. The 70 resources consist of 69 historic buildings and one prehistoric isolate. The prehistoric isolate did not occur within the project APE, so there is no record of archaeological resources occurring within the project APE. Furthermore, the field investigation of the project site did not result in the identification of any cultural material within the project APE. However, a Sacred Lands File search for the project APE completed by the Native American Heritage Commission (NAHC) yielded positive results. The San Luis Rey Band of Mission Indians indicated that sensitive discoveries have occurred immediately north of the Escondido Creek channel, and that the project area is considered sensitive to the tribe. Additionally, letters regarding the project were sent on March 8, 2019 to all contacts listed by the NAHC. One response was received. In a letter dated March 22, 2019, the Viejas Band of Kumeyaay Indians (Viejas) indicated that the general project area has cultural significance or ties to Viejas and requested that a Kumeyaay Cultural Monitor be on site for ground disturbing activities to inform them of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains. In accordance with the requirements of AB 52, the City sent notification to four Native American Tribes traditionally and culturally affiliated with the project area on July 31, 2019. In a response dated August 12, 2019, the Rincon Band of Luiseño Indians (Luiseño) identified the location as being within the Territory of the Luiseño people, and also within Rincon's specific area of historic interest. Furthermore, Rincon identified one Luiseño place name within close proximity to the project site. As such, Luiseño requests the completion of an archaeological record search and assessment with results being provided to the Rincon Band. Due to the cultural sensitivity of the project region, the positive Sacred Land Files results, and the responses to the letters sent to the contacts listed by the NAHC, the following mitigation measures are recommended to reduce potential impacts to archaeological resources to a less than significant level and comply with all requirements of AB 52 for cultural resources.

Mitigation Measures to be Employed during Construction

CUL-1 It is recommended that the City should enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated (TCA) with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the City and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

- CUL-2** Prior to issuance of a grading permit, the City shall retain a qualified archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008), and a Native American monitor associated with a TCA Tribe to implement the monitoring program. Because the project is located within shared territory of the Luiseno and Kumeyaay people, Native American monitors representing the interest and values of both the Luiseno and Kumeyaay people shall be retained for the project. The archaeologist shall be responsible for coordinating with the Native American monitors. This verification shall be presented to the City in a letter from the project archaeologist that confirm that Native American monitors representing both Luiseno and Kumeyaay TCA Tribes have been retained. The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.
- CUL-3** The qualified archaeologist and a Native American monitor(s) shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.
- CUL-4** During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be on site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.
- CUL-5** In the event that previously unidentified cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.
- CUL-6** If a potentially significant historical, unique archaeological, and/or tribal cultural resource is discovered, the qualified archaeologist shall notify the City of said discovery. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor, shall determine the significance of the discovered resource. Recommendations for the resource’s treatment and disposition shall be made by the qualified archaeologist in consultation with the

TCA Tribe and the Native American monitor and be submitted to the City for review and approval.

CUL-7 The avoidance and/or preservation of significant cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources must first be considered and evaluated as required by CEQA. Where any significant resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

CUL-8 As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

CUL-9 If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor must be present during any testing or cataloging of those resources. Moreover, if the qualified

archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor, may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated as follows:

- 1) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

- 2) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/ researchers for further study. The collection and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter from the curation facility stating the prehistoric archaeological materials have been received and that all fees have been paid.

CUL-10 Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

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

While the project site is in a low-income community as seen in the figure below, there will not be disproportionately high effects on the residents because the proposed project does

not include housing or commercial development that would directly affect the number of residents or employees in the area. The only effects made would be minor inconveniences to the nearby residents during construction activities.

The project benefits Disadvantaged Communities (DAC) by reducing stress on the potable water treatment and distribution system and postpones associated related rate increases. It also increases available capacity in the ELO and SEOO allowing postponement of expenditures of tens of millions of dollars for replacement or rehabilitation of the outfall for 10 or more years which will benefit City residence and disadvantaged communities.

Impact to Local Agricultural Community

One of the key goals of this program is to expedite a new, high-quality water supply to local agricultural growers, utilize existing water resources and help promote and support the local economy and agriculture. Agricultural producers are a vital part of Escondido's community and its economy. Avocados are one of the most important crops grown in San Diego County, and water quality for avocado production is important for quantity and quality of production. Growers maintain a high demand for water, specifically low-salinity water. Water must be low in chlorides and other constituents to avoid leaf burn, root rot, and the need for excessive flushing. Salinity management issues take priority due to the drought in California forcing a shift to higher salinity source water. For these reasons, infrastructure to provide more recycled water with lower salinity to the growers is necessary to offset agricultural potable demand, decrease demand for imported water, and to continue efficient agricultural production. An increased local economy benefits all residents of the City including the disadvantaged communities.

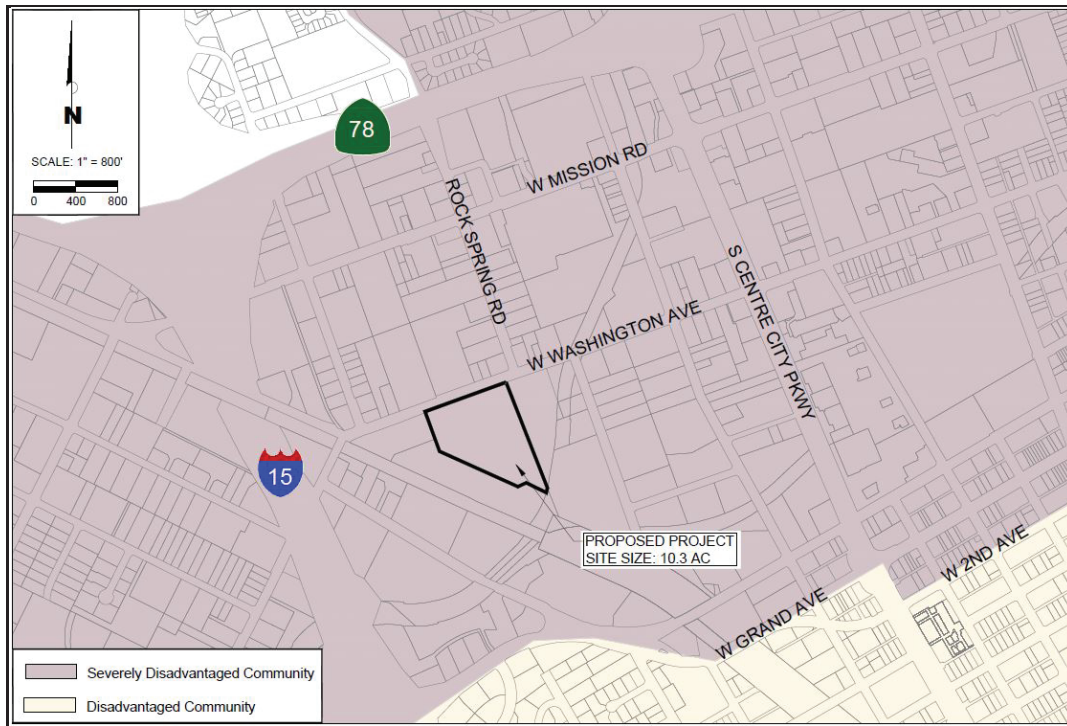


Figure 1.

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

Letters regarding the project were sent on March 8, 2019 to all contacts listed by the NAHC, and two responses were received. These responses indicated that the project area is within the ancestral territory of the Luiseño and the Kumeyaay people. Additionally, a Sacred Lands File search for the project APE completed by the NAHC yielded positive results, with the San Luis Rey Band of Mission Indians indicating that sensitive discoveries have occurred immediately north of the Escondido Creek channel. As such, there is potential for unrecognized resources to be discovered on the project site during grading and other ground-disturbing activities associated with construction of the project. Mitigation measures CUL-1 through CUL-10, listed above, would be implemented to ensure that impacts to tribal cultural resources would be less than significant.

In addition, it is anticipated the State Water Board will initiate consultation with the Office of Historic Preservation (OHP) under Section 106 of the National Historic Preservation Act (NHPA) to make a determination of “no historic properties affected” by the Project.

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?

The project will not introduce the spread of noxious weeds or invasive species in the area.

3.) Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Engineering/Recycled Water Use Permits

Implementation of the proposed agricultural recycled water use program should not result in any significant new water quality regulatory permitting requirements. The existing recycled water waste discharge requirements (WDRs) already incorporate applicable California Division of Drinking Water (DDW) Title 22 treatment and use requirements. Many farmers that will be receiving the enhanced recycled water are in a basin that does not currently receive recycled water. Therefore, the City will need to amend the existing Recycled Water Permit and meet the effluent standards of Order No. R9-2010-0032 to implement the Basin Plan groundwater quality objectives for watersheds within the City's recycled water service area. The Regional Water Quality Control Board (RWQCB) will either 1) amend the City's Order No. R9-2010-0032 to include requirements applicable to the proposed agricultural reuse operations or 2) establish new waste discharge requirements (WDRs) that govern the City's upgraded and expanded recycled water treatment and reuse operations. Regardless of which approach is implemented, the City's recycled water treatment and use requirements for the proposed NPR/Ag reuse program will largely stay the same as the City's existing recycled water requirements. In summary, though modification of the City's existing WDRs for recycled water use will likely be required to address the new facilities, the recycled water effluent limits are not expected to significantly change.

Filanc Brown & Caldwell Joint Venture is the selected progressive Design Build (DB) team. When the Guaranteed Maximum Price (GMP) is approved, the DB team will prepare the following permits:

- Title 22 Engineering Report – submitted and approved by the California Regional Water Quality Control Board (RWQCB) and the Department of Health Services (DHS) before recycled water projects are implemented
- Report of waste discharge (ROWD) for a site-specific order
- Caltrans encroachment permit
- City of Escondido grading permit
- Compliance with the Construction General Permit (CGP) for construction BMPs and post construction BMPs

Land Use Permits

The DB team has prepared a City of Escondido plot plan application needed for the development of the MFRO Facility. The plot plan application is currently in review by City staff.

CEQA/NEPA Compliance

Assembly Bill AB-52, CEQA consultation requirements with California Native American Tribes have occurred with measures in-place for construction. State Water Resources Control Board (CWQCB) Mitigations Measure, Mitigations Monitoring and Reporting Plan (MMRP) will also be

implemented. The project achieves California Office of Historic Preservation (OHP) goals and requirements, through the State Historic Preservation Office (SHPO). Construction related CWRCB MMRPs and National Environmental Policy Act (NEPA) compliance measures will be presented and stressed during the construction kick-off meeting. Strict monitoring of related activities will be performed throughout the duration of construction. San Diego County Vector Control Program and both respective Multiple Habitat Conservation Plans (MHCP) for riparian/wetlands will be fulfilled by the project maintaining water levels of Lake Wohlford and Lake Dixon. The project also assists with Senate Bill (SB) 88 compliance in tracking water use. Tracking of water used by agricultural users will be centralized with flow measuring equipment being part of the supervisory control and data acquisition (SCADA) system providing accurate recording, a means of comparing flows associated with totals of individual user meters. Finally, the MFRO facility utilizing Low Impact Design (LID) avoids any storm water from entering the adjacent Reidy Creek. Project specifications related to the storm water pollution prevention plan (SWPPP) will require best management practices (BMPs) prohibiting storm water runoff entering adjacent Reidy Creek. Permanent storm water runoff will also be prohibited from entering the creek.

The tentative schedule for public review, adoption and approval of the IS/MND and MMRP is as follows:

- Send to State Clearing House (SCH) March 2020
- End of 30 day SCH public review period April 2020
- Certify the IS/MND and adopt the MMRP May 2020

The City has renewed the NPDES permit to include the MFRO Facility and the brine discharge, which was adopted by the Regional Board in April 2018.

4.) Project Budget

Funding Plan

- How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

The City of Escondido will fund the non-Reclamation share of the proposed project through City resources and two additional funding sources. The project has transitioned to a progressive Design Build process in order to obtain a best value project without compromising schedule. The Design Build process will incorporate constructability reviews and value engineering ideas throughout the design phase. The allocation of construction costs remains the same as outlined in the executed BOR Title XVI Agreement R19AC00023, with a total project cost of \$44,700,000.

The City's two additional funding sources are a State Revolving Fund (SRF) loan (with loan forgiveness) and a San Diego Integrated Water Resources Management (IRWM) grant. The City Council adopted Resolution No. 2019-04 on January 16, 2019, authorizing the Director of Utilities to execute an Installment Sale Agreement (Agreement) in the amount of \$29 million from the State Water Resources Control Board, Division of Financial Assistance/Proposition 1 Funding. However, the City Council directed staff to find a new site for the MFRO Facility at the same Council meeting. A new site has been determined and the SRF application is being updated to reflect the current site. Once approved, the loan issued from the State Revolving Fund (SRF) will be used for construction costs of the Membrane Filtration Reverse Osmosis (MFRO) Facility Project along with \$2,000,000 received from IRWM Prop 84 Funds.

A breakdown of the total project costs are as follows:

Table 4-1 – Executive Summary - Total Breakdown of all Costs for the Project

BUDGET ITEM DESCRIPTION	COMPUTATION				TOTAL COST
	Price/Rate	Unit	Reclamation	Recipient	
CONTRACTUAL/ CONSTRUCTION - Explain any contracts or sub-Agreements that will be awarded, why needed. Explain contractor qualifications and how the contractor will be selected.					
Filanc Brown & Caldwell Joint Venture - Engineering Design Fees - Phase 1	\$2,716,000	LS	\$ 679,000	\$ 2,037,000	\$ 2,716,000
Helix Environmental Planning, Inc - CEQA Documentation and Permitting - Phase 1	\$68,230	LS	\$ 17,058	\$ 51,173	\$ 68,230
Ninyo & Moore - Geotechnical Evaluation - Phase 1	\$49,881	LS	\$ 12,470	\$ 37,411	\$ 49,881
Filanc Brown & Caldwell Joint Venture - Construction - Phase 2	\$35,992,889	LS	\$ 8,998,222	\$26,994,667	\$ 35,992,889
Contingency to Construction (assumed to be 9.9%)	\$3,570,000	LS	\$ 892,500	\$ 2,677,500	\$ 3,570,000
Filanc Brown & Caldwell Joint Venture - Engineering Services during construction - Phase 2	\$2,303,000	LS	\$ 575,750	\$ 1,727,250	\$ 2,303,000
			\$11,175,000	\$33,525,000	\$ 44,700,000

The City is providing a match of \$2,525,000 from customer fees from the Wastewater Capital Improvement Program reserves.

- **Describe any in-kind costs incurred before the anticipated study start date that you seek to include as study costs.**

Although prior in-kind costs have been incurred, the City does not intend to seek funding for them.

- **Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.**

The City has no funding partners.

- **Describe any funding requested or received from other Federal partners. Note: Other sources of Federal funding may not be counted towards the applicant's 50 percent cost share unless otherwise allowed by statute.**

The City has not requested nor received other Federal funds.

- **Describe any pending funding requests that have not yet been approved and explain how the project will be affected if such funding is denied.**

The City has no pending funding requests for the planning effort.

Letters of Commitment

Not applicable. The City is not requesting funding from any potential partners to implement the proposed project. The total cost of the project is estimated at \$44,700,000. The City will provide a 75% share of \$33,525,000, and is requesting Bureau of Reclamation (BOR) funding of **\$6,291,000** for FY2020. With BOR's previous funding of \$4,884,000, Federal funding would total \$11,175,000, or 25% of the Project's total cost as noted in Table 4-2:

Table 4-2 – Total Cost of the Project		
Funding Sources	% of Total Cost	Total Cost by Source
Non-Federal: Recipient Funding	75%	\$33,525,000
Federal: Reclamation Funding (both Current Funding and Requested FY20 FOA Funding)	25%	\$11,175,000
Total	100%	\$44,700,000

A further breakdown of these costs is noted in Table 4-3.

Table 4-3 – Summary of Non-Federal and Federal Funding Sources	
Funding Source	Amount
Non-Federal Entities	
1. California State Water Board - State Revolving Fund (SRF) Loan	\$29,000,000
2. IRWM Prop 84	\$2,000,000
3. City Funds	\$2,525,000
Non-Federal Subtotal	\$33,525,000
Federal Entities from Prior Funding (per Agreement R19AC00023)	\$4,884,000
Other Federal Subtotal	\$0
REQUESTED RECLAMATION FUNDING	\$6,291,000

Budget Proposal

Table 4-4 provides a summary of the budget proposal, breaking down the design, construction, environmental, geotechnical, and contingency costs of approximately 10% of the total construction costs.

Table 4.4 – Proposed Budget for the MFRO Facility

BUDGET ITEM DESCRIPTION	COMPUTATION				TOTAL COST
	Price/Rate	Unit	Reclamation	Recipient	
CONTRACTUAL/ CONSTRUCTION - Explain any contracts or sub-Agreements that will be awarded, why needed. Explain contractor qualifications and how the contractor will be selected.					
Filanc Brown & Caldwell Joint Venture - Engineering Design Fees - Phase 1	\$2,716,000	LS	\$ 679,000	\$ 2,037,000	\$ 2,716,000
Helix Environmental Planning, Inc - CEQA Documentation and Permitting - Phase 1	\$68,230	LS	\$ 17,058	\$ 51,173	\$ 68,230
Ninyo & Moore - Geotechnical Evaluation - Phase 1	\$49,881	LS	\$ 12,470	\$ 37,411	\$ 49,881
Filanc Brown & Caldwell Joint Venture - Construction - Phase 2	\$35,992,889	LS	\$ 8,998,222	\$26,994,667	\$ 35,992,889
Contingency to Construction (assumed to be 9.9%)	\$3,570,000	LS	\$ 892,500	\$ 2,677,500	\$ 3,570,000
Filanc Brown & Caldwell Joint Venture - Engineering Services during construction - Phase 2	\$2,303,000	LS	\$ 575,750	\$ 1,727,250	\$ 2,303,000
			\$11,175,000	\$33,525,000	\$ 44,700,000

Budget Narrative

Construction – The City has hired a qualified Design Build (DB) Contactor through a progressive Design Build procurement contract. This DB is divided into two phases:

- Phase 1 – Initial Preconstruction Phase, which includes engineering, design, and pre-construction services
- Phase 2 – Guaranteed Maximum Price (GMP) for construction and engineering support services during construction

Phase 1 services is an existing contract with Filanc Brown and Caldwell Joint Venture with a value of \$2,716,068.

Phase 2 services are estimated to be a total of \$35,992,889 for construction, and \$2,303,000 for engineering services during construction, for a total of \$38,295,889.

Environmental – Costs to prepare environmental compliance documents are estimated at \$68,230. This includes the cost to prepare the IS/MND and MMRP per CEQA and CEQA plus requirements.

Geotechnical – Costs to ensure proper geotechnical analysis and design criteria for construction is \$49,881.

Contingency – Funds set aside for potential issues during construction, which could include items such as unforeseen conditions, and increases in materials or construction costs, are 9.9% of the total for an amount of \$3,570,000.

Total Costs – Total project cost is anticipated to be approximately \$44,700,000 as shown in Table 4-1 and Table 4-4.

5.) Letters of Project Support

Letters of Project Support for FY 2020 funding are included at the end of this application and are listed in order as follows:

Table 5-1	
MRFO Facility Supporter	
1.	Burr Ranch
2.	California Water Efficiency Partnership
3.	Escondido Chamber of Commerce
4.	Escondido Growers for Agricultural Preservation (EGAP)
5.	Henry Avocado Corporation
6.	Leucadia Wastewater District
7.	Metropolitan Water District of Southern California
8.	Rincon del Diablo Municipal Water District
9.	San Diego County Farm Bureau
10.	San Diego Integrated Regional Water Management
11.	San Diego North Economic Development Council
12.	San Elijo Joint Powers Authority
13.	Vallecitos Water District
14.	Vista Irrigation District

6.) Official Resolution

The Official Resolution was brought before the Escondido City Council on February 5, 2020 and is enclosed with this application.

RESOLUTION NO. 2020-13

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ESCONDIDO, CALIFORNIA, VERIFYING THE CITY OF ESCONDIDO'S FINANCIAL CAPABILITY AND COMMITMENT TO MEET ESTABLISHED DEADLINES SHOULD IT BE OFFERED A FINANCIAL AWARD AND ENTER INTO A MODIFIED ASSISTANCE AGREEMENT UNDER THE BUREAU OF RECLAMATION'S WATERSMART: TITLE XVI PROGRAM

WHEREAS, the City of Escondido ("City") submitted an application to the Bureau of Reclamation's WaterSMART: Title XVI Water Reclamation and Reuse Projects funding program in July 2018 for construction of the proposed Membrane Filtration Reverse Osmosis ("MFRO") Facility; and

WHEREAS, the Bureau of Reclamation awarded an assistance agreement to the City in August 2019 with an initial amount of \$4,884,000 and a total estimated amount of \$11,175,000; and

WHEREAS, the City intends to submit an application to the Bureau of Reclamation to receive the balance of the total WaterSMART: Title XVI award for construction of the proposed MFRO Facility; and

WHEREAS, the application identifies Christopher W. McKinney, Director of Utilities, as the City's authorized representative with legal authority to enter into a modified agreement; and

WHEREAS, the City's Wastewater Enterprise Fund is capable of providing the amount of funding and/or in-kind contributions specified in the funding plan for the MFRO Project; and

WHEREAS, the City and its authorized representative will work with the Bureau of Reclamation to meet established deadlines for entering into an assistance agreement.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Escondido, California, as follows:

1. That the above recitations are true.
2. That the Mayor and City Council have reviewed and support the City of Escondido's submitted application for additional financial assistance from the Bureau of Reclamation's WaterSMART: Title XVI Water Reclamation and Reuse Projects funding program.

PASSED, ADOPTED AND APPROVED by the City Council of the City of Escondido at a regular meeting thereof this 5th day of February, 2020 by the following vote to wit:

AYES : Councilmembers: DIAZ, MARTINEZ, MASSON, MORASCO, MCNAMARA

NOES : Councilmembers: NONE

ABSENT : Councilmembers: NONE

APPROVED:

DocuSigned by:

Paul McNamara

CAACE20782954D3...

PAUL MCNAMARA, Mayor of the
City of Escondido, California

ATTEST:

DocuSigned by:

Zack Beck

A58535D0BDC1430...

ZACK BECK, City Clerk of the
City of Escondido, California

RESOLUTION NO. 2020-13



2019-2020
BOARD OF DIRECTORS

Executive Committee:

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- Mayra Salazar-Magos**
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- Jhona McCormick**
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Murphy's Fine Woodworking
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- Tina Pope**
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- Christopher Iaccio**
CEMEX
- Adrian Zavala**
Neighborhood Healthcare
- Jim Vander Spek**
VanderSpek & Howerzyl CPAs

February 11, 2020

Angela Morrow, P.E.
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

SUBJECT: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

We have been early supporters of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project. We understand that the City of Escondido has made substantial progress and is moving forward with a design-build process on their Membrane Filtration/Reverse Osmosis Facility. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project – to provide advanced treatment for a portion on the effluent Title 22 recycled water from the HARRF and distribute a new high-quality water supply to agricultural growers in the region. I am pleased to see the City of Escondido make progress on this important project, and I look forward to your continued success.

The Escondido Chamber of Commerce and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. I offer my continued support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the Water SMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

James Rowten
President/CEO
Escondido Chamber of Commerce



Escondido Growers for Agricultural Preservation
2601 Mountain View Drive
Escondido, CA 92027
Karen@growescondido.org
Phone (760) 432-8425 | Fax (760) 432-8485



February 3, 2020

Angela Morrow, P.E.
Deputy Director of Utilities / Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

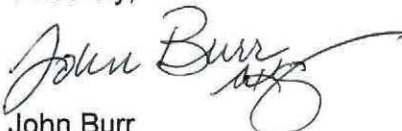
We have been early supporters of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project, which is to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF and distribute a new, high-quality water supply to agricultural growers in the region.

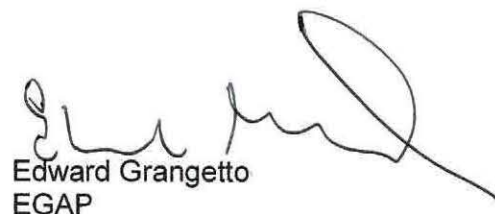
Even though the family farm is a vital aspect of American Industry and significant contributor to the economy, without the level of commitment from our cities and counties with regard to water sustainability, the hope of continuing the legacy of farming in Southern California will be gone. The risks associated with Agri-Business require a high level of financial obligation by all stakeholders. This uncertainty will be moderated through the Water Reuse Program the City of Escondido is providing. This is a program approved and appreciated by all parties. Supporting sustainable agriculture helps build communities where people want to work and live.

The social responsibility to mitigate the loss of local family farms by way of succession planning can only be accomplished through maintaining a thriving farm/business operation that offers a viable vehicle for the owner's success. Families throughout North County continue to dream of the day the farm will pass to the next generation.

The Escondido Growers for Agricultural Preservation (EGAP) and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. I offer my continued support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,


John Burr
EGAP


Edward Grangetto
EGAP

February 3, 2020

Angela Morrow, P.E.
Deputy Director of Utilities / Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

We have been early supporters of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project. We understand that the City of Escondido has made substantial progress and is moving forward with a design-build process on their Membrane Filtration/Reverse Osmosis Facility. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project - to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF and distribute a new, high-quality water supply to agricultural growers in the region. I am pleased to see the City of Escondido make progress on this important project and look forward to your continued success.

The Henry Avocado Corporation and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. I offer my continued support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,



Rick Opel
Henry Avocado Corporation



LEADERS IN
ENVIRONMENTAL
PROTECTION

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Donald F. Omsted, Vice President
Judy Hanson, Director
David Kulchin, Director
Elaine Sullivan, Director
Paul J. Bushee, General Manager

Ref: 20-7060

February 5, 2020

Angela Morrow, P.E.
Deputy Director of Utilities / Construction and Engineering
City of Escondido
1521 S. Hale Avenue
Escondido, CA 92029

Subject: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

We have been early supporters of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project. We understand that the City of Escondido has made substantial progress and is moving forward with a design-build process on their Membrane Filtration/Reverse Osmosis Facility. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project - to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF and distribute a new, high-quality water supply to agricultural growers in the region. I am pleased to see the City of Escondido make progress on this important project and look forward to your continued success.

The Leucadia Wastewater District and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. I offer my continued support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

Paul Bushee
General Manager



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

February 10, 2020

Angela Morrow, P.E.
Deputy Director of Utilities
Construction and Engineering
City of Escondido
1521 S. Hale Avenue
Escondido, CA 92029

Dear Ms. Morrow:

Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis Facility

The purpose of this letter is to express The Metropolitan Water District of Southern California's (Metropolitan) support for local supply projects, such as the City of Escondido's (Escondido) Membrane Filtration/Reverse Osmosis Facility Project (MFRO).

In partnership with local water agencies, Metropolitan is a statewide leader in implementing water conservation programs and progressive water resources such as wastewater recycling and groundwater recovery. Metropolitan has invested more than \$1.4 billion in these local resources, and our local water agency partners, such as Escondido, have invested many billions more.

The severity of California's recent drought, coupled with the extended dry period on the Colorado River and the projected long-term impacts of climate change underscore the need for continued diversification of Southern California's water resource portfolio. Metropolitan's Integrated Water Resources Plan (IRP) achieves diversification with an "all of the above" approach. This includes stabilizing Metropolitan's imported supplies while developing new local supplies to accommodate projected future growth. A 2015 update to the IRP established a local supply production goal of 2.4 million acre-feet by 2040. By comparison, local production has varied from 1.8 to 2.0 million acre-feet over the past few years. Escondido's MRFO facility could help the region meet the reliability goals set forth in the IRP.

Metropolitan supported Title XVI funding for the MRFO facility in 2018 (Attachment 1) and supports increased funding of the project, which would provide sustainable high-quality irrigation water for local agriculture.

Ms. Angela Morrow

Page 2

February 10, 2020

Please contact Warren Teitz at (213) 217-7418 or via e-mail at wteitz@mwdh2o.com if you have any questions.

Sincerely,



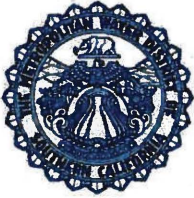
Brad Coffey

Manager, Water Resource Management

Attachments (1)

WAT:rh

cc: Sandra L. Kerl
General Manager
San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123



**THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA**

Office of the General Manager

July 19, 2018

Ms. Angela Morrow, P.E.
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Dear Ms. Morrow:

Re: Support for the City of Escondido Membrane Filtration/Reverse Osmosis Facility

The Metropolitan Water District of Southern California (Metropolitan) would like to express support for the City of Escondido's proposed Membrane Filtration/Reverse Osmosis Facility. The project will provide advanced treatment for a portion of the effluent from the Hale Avenue Resource Recovery Facility and distribute a new, high-quality water supply to agricultural growers in the region.

The severity of the State's recent drought, the extended dry period on the Colorado River, and the projected long-term impacts of climate change underscore the need for continued diversification of Southern California's water resource portfolio. Metropolitan's long-term Integrated Water Resources Plan (IRP) achieves diversification with an "all of the above" approach. This includes maintaining Colorado River Aqueduct supplies and restoring the reliability of the State Water Project, while also developing local climate-resilient resources such as indirect potable reuse. Metropolitan's IRP established a regional production goal of 2.4 million acre-feet per year from local supplies by 2040. Over the same time horizon, local planning agencies project Metropolitan's service area to grow by more than three million people. New local projects, such as the City of Escondido's Membrane Filtration/Reverse Osmosis facility, help increase local supplies and reduce Southern California's reliance on imported water supplies to meet expected future demands.

Therefore, Metropolitan recommends support from the Bureau of Reclamation Title XVI Water Reclamation and Reuse Projects Funding Opportunity Program for the Escondido Membrane Filtration/Reverse Osmosis Facility.

Sincerely,

A handwritten signature in black ink that reads "Brad Coffey".

Brad Coffey
Manager, Water Resource Management Group

cc: Maureen Stapleton, San Diego County Water Authority

Board of Directors

James B. Murtland, President
Erin R. Lump, Vice President
David A. Drake, Treasurer
Dr. Gregory M. Quist, Director
Diana L. Towne, Director



*A Public Agency Serving the
Greater Escondido Valley Since 1954*

General Manager

Clint Baze

Clerk of the Board

Wanda Cassidy

General Counsel

Redwine and Sherrill

February 6, 2020

Angela Morrow, P.E.
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Support for the City of Escondido Membrane Filtration/Reverse Osmosis
(MFRO) Facility

Dear Ms. Morrow:

Rincon del Diablo Municipal Water District (Rincon Water) supports projects such as the City of Escondido's (City) Membrane Filtration/Reverse Osmosis Facility Project. It is our understanding that the City has made substantial progress and is moving forward with the project using the design-build process. This puts the City of Escondido even closer to achieving its goal - to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF in order to distribute, high-quality water supply to agricultural growers.

Rincon Water and the City of Escondido share a common objective: increasing water-efficiency in California by developing sustainable water resources, improving ecosystems health, and fostering strong communities.

I offer my support for the City of Escondido's MFRO Facility and encourage the Bureau of Reclamation to increase funding for this project through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

A handwritten signature in black ink that reads "Clint Baze". The signature is written in a cursive, flowing style.

Clint Baze
General Manager



FARM BUREAU San Diego County

The Voice of Local Farmers
Serving San Diego agriculture since 1914

February 3, 2020

Angela Morrow, P.E.
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

We have been early supporters of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project. We understand that the City of Escondido has made substantial progress and is moving forward with a design-build process on their Membrane Filtration/Reverse Osmosis Facility. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project - to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF and distribute a new, high-quality water supply to agricultural growers in the region. I am pleased to see the City of Escondido make progress on this important project and look forward to your continued success.

The San Diego County Farm Bureau and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. I offer my support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

Hannah Gbeh
Executive Director
San Diego County Farm Bureau



February 11, 2020

Angela Morrow, P.E.
Deputy Director of Utilities / Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

The San Diego Integrated Regional Water Management (IRWM) Program was an early supporter of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project, having provided the project with a \$2 million implementation grant in 2016. I understand that the City has made substantial progress and is moving forward with a design-build process on its Membrane Filtration/Reverse Osmosis Facility. This continued progress by the City puts it even closer to achieving the goal of this project -- to provide advanced treatment for a portion of the effluent Title 22 recycled water from the Hale Avenue Resource Recovery Facility and distribute a new, high-quality water supply to agricultural growers in the region. I am pleased to see the City of Escondido make progress on this important project and look forward to your continued success.

The San Diego IRWM Program and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems and economically strong communities. The IRWM Program offers its continued support to the City of Escondido and encourages the Bureau of Reclamation to increase funding for the City's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Please contact me at mstadler@sdcwa.org or 858-522-6735 if you have any questions about this letter.

Sincerely,

A handwritten signature in black ink that reads "Mark Stadler".

Mark Stadler
San Diego Integrated Regional Water Management Program Manager
Principal Water Resources Specialist
San Diego County Water Authority



SAN DIEGO NORTH

Economic Development Council

February 6, 2020

Angela Morrow, P.E.
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

The San Diego North Economic Development Council (SDNEDC) was an early supporters of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project and we are writing to express our strong support for the project. The City of Escondido has made substantial progress and is moving forward with a design-build process on their Membrane Filtration/Reverse Osmosis Facility. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project - to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF and distribute a new, high-quality water supply to agricultural growers in the region. The council is pleased to see the City of Escondido make progress on this important project and look forward to continued success.

The SDNEDC and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. SDNEDC offers our continued support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

A handwritten signature in blue ink, appearing to read "W. Erik Bruvold", is written over a light blue circular background.

W Erik Bruvold
Chief Executive Officer
San Diego North Economic Development Council



BOARD OF DIRECTORS

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Kristi Becker
Catherine Blakespear
David Zito

ADMINISTRATION

Michael T. Thornton
General Manager

February 3, 2020

Angela Morrow, P.E.
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

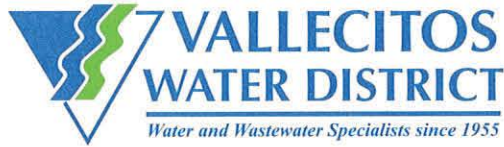
Dear Ms. Morrow:

We have been early supporters of the City of Escondido's Membrane Filtration/Reverse Osmosis Facility Project. We understand that the City of Escondido has made substantial progress and is moving forward with a design-build process on their Membrane Filtration/Reverse Osmosis Facility. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project - to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF and distribute a new, high-quality water supply to agricultural growers in the region. I am pleased to see the City of Escondido make progress on this important project and look forward to your continued success.

The San Elijo Joint Powers Authority and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. I offer my continued support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

Michael Thornton, P.E.
General Manager
San Elijo Joint Powers Authority



201 Vallecitos de Oro • San Marcos, California • 92069-1453

Telephone (760) 744-0460

February 3, 2020

Angela Morrow, P.E.
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Support for the City of Escondido Membrane Filtration/Reverse Osmosis (MFRO) Facility

Dear Ms. Morrow:

We understand that the City of Escondido has made substantial progress toward and is moving forward with a design-build process on their Membrane Filtration/Reverse Osmosis Facility. The continued progress by the City of Escondido puts it even closer to achieving the goal of this project - to provide advanced treatment for a portion of the effluent Title 22 recycled water from the HARRF and distribute a new, high-quality water supply to agricultural growers in the region. I am pleased to see the City of Escondido make progress on this important project and look forward to your continued success.

The Vallecitos Water District and the City of Escondido share a common vision of advancing towards a water-efficient California with sustainable water resources, healthy ecosystems, and economically strong communities. I offer my support to the City of Escondido and encourage the Bureau of Reclamation to increase funding for the City of Escondido's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

Glenn Prum
General Manager
Vallecitos Water District



1391 Engineer Street • Vista, California 92081-8840
Phone (760) 597-3100 • Fax: (760) 598-8757
www.vidwater.org

February 10, 2020

Angela Morrow, PE
Deputy Director of Utilities/Construction and Engineering
City of Escondido
1521 S Hale Avenue
Escondido, CA 92029

Subject: Continued Support for the City of Escondido Membrane Filtration/Reverse Osmosis Facility

Dear Ms. Morrow:

The Vista Irrigation District has been an early supporter of the City of Escondido's (City's) Membrane Filtration/Reverse Osmosis (MFRO) Facility Project. Once constructed, this important facility will provide advanced treatment for a portion of the Title 22 recycled water effluent from the City's wastewater treatment plant, the Hale Avenue Resource Recovery Facility, and distribute a new, high-quality water supply to agricultural growers in the region. The MFRO Facility will provide many local, regional, and statewide benefits. It will secure a new, local, sustainable source of water for our region, decreasing both the demand for imported water and the volume of wastewater discharged to the ocean. The project will also reduce the salinity of the recycled water and assist in meeting the water quality objectives of the San Diego Region Salinity/Nutrient Management Plan.

We understand that the City has made substantial progress on the MFRO Facility Project and is moving forward with a design-build process for construction. I am pleased to see that the City has made substantial progress on this important project and look forward to your continued success. As such, I offer my continued support to the City and encourage the Bureau of Reclamation to increase funding for the City's MFRO Facility through the WaterSMART Title XVI Fiscal Year 2020 Water Reclamation and Reuse Projects Funding Opportunity Program.

Sincerely,

A handwritten signature in blue ink, appearing to read "RW", is written over a light blue horizontal line.

Randy Whitmann, PE
Director of Engineering

cc: Brett Hodgkiss, General Manager; Don Smith, PE, Director of Water Resources

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