Project Name:
City of Oceanside
Water Reuse, Recycling and Seawater Desalination Feasibility Study
Grant Application
Due February 28, 2023; 4:00 MST

Prepared For:

U.S. Department of the Interior - Bureau of Reclamation
WaterSMART Grants:
Water Recycling and Desalination Planning Funding Opportunity Number:
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Prepared by:

Project Manager:
Mabel Uyeda
Principal Water Engineer
City of Oceanside
300 N. Coast Hwy
Oceanside, CA 92054
Phone: 760-435-5819
Email: muyeda@oceansideca.org

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LIST OF ACRONYMNS

AF	Acre-feet
AFY	Acre-feet per year
AWPF	Advanced Water Purification Facility
CEQA	California Environmental Quality Act
CRA	Colorado River aqueduct
DAC	Disadvantaged community
DDW	Division of Drinking Water
DPR	Direct potable reuse
DWR	Department of Water Resources
FAT	Fully advanced treated water
IPR	Indirect potable reuse
IRWM	Integrated Regional Water Management
L	Liter
MCL	Maximum contaminant level
MBGPF	Mission Basin Groundwater Purification Facility
Mg	Milligram
MGD	Million gallons per day
MHI	Median household income
MWD	Metropolitan Water District of Southern California
NSDWRC	North San Diego Water Reuse Coalition
NL	Notification level
NOFO	Notice of funding opportunity
NTU	Nephelometric turbidity unit
PWO	Pure Water Oceanside
RO	Reverse osmosis
RW	Recycled water
RWQCB	Regional Water Quality Control Board
SDAC	Severely disadvantaged community
SDCWA	San Diego County Water Authority
SLRWRF	San Luis Rey Water Reclamation Facility
SWRCB	State Water Resources Control Board
SWP	State Water Project
TDS	Total dissolved solids
TMDL	Total maximum daily load
TOC	Total organic carbon
UWMP	Urban Water Management Plan
WFP	Water filtration plant
WRFP	Water Recycling Funding Program
WWTP	Wastewater treatment plant

I. Executive Summary

Applicant Name: City of Oceanside

City/County/State: Oceanside, San Diego County, California

Project Summary: In an effort to develop a local, drought-proof, and new water supply for its customers, the City of Oceanside (City) completed Phase I of Pure Water Oceanside (PWO), a project which included constructing an advanced water purification facility (AWPF) and accompanying features to inject fully advanced treated water (FAT) water into its groundwater basin. AWPF treats tertiary (Title 22) recycled water to produce 4.5 million gallons per day (MGD) or 3,360 acre feet per year (AFY) of FAT water. The City began producing and injecting FAT water into its groundwater aquifer, known as Mission Basin, at the end of 2021. The proposed Oceanside Water Reuse, Recycling and Seawater Desalination Feasibility Study (feasibility study) will evaluate alternatives to expand treatment and beneficial use of wastewater effluent, as well as the capture and reuse of stormwater and desalination of seawater. The feasibility study will include updates to the City's estimated recycled water demand and seasonal patterns, and will develop comparative cost information for all alternatives. The optimal alternative will be selected and further evaluated to include all required elements of a Title XVI Feasibility Study. ***This project meets the stated objective of this Notice of Funding Opportunity (NOFO) by developing a study that evaluates the feasibility of constructing new or expanded water recycling and desalination facilities.*** This planning effort is not for a project that will be located at a Federal facility, nor will it involve Federal lands.

Project Length: 17 months

Project Start / Completion Date: November 1, 2023 – March 1, 2025

A. Project Location

The City of Oceanside encompasses approximately 42 square miles and is located in San Diego County, California, 35 miles north of the City of San Diego. It is bordered to the north by Marine Corps Base Camp Pendleton, to the south by the cities of Carlsbad and Vista, and to the east by unincorporated San Diego County. The Pacific Ocean is to the west. The study area is located entirely within the jurisdiction of the San Diego Regional Water Quality Control Board (RWQCB), Region 9. The feasibility study will review alternative projects located within the City's incorporated area. Five of the alternatives concern expansion of the AWPF, where the PWO Phase I project was constructed, located at the City's San Luis Rey Water Reclamation Facility (SLRWRF) at 3950 N. River Road, Oceanside, CA 92058. The SLRWRF houses the City's wastewater and tertiary recycled water treatment facilities. See Figure 1 - Project Location Map. SLRWRF is marked by the red box titled "Project Location." The latitude of SLRWRF is {33°14'N} and longitude is {117°19'W}

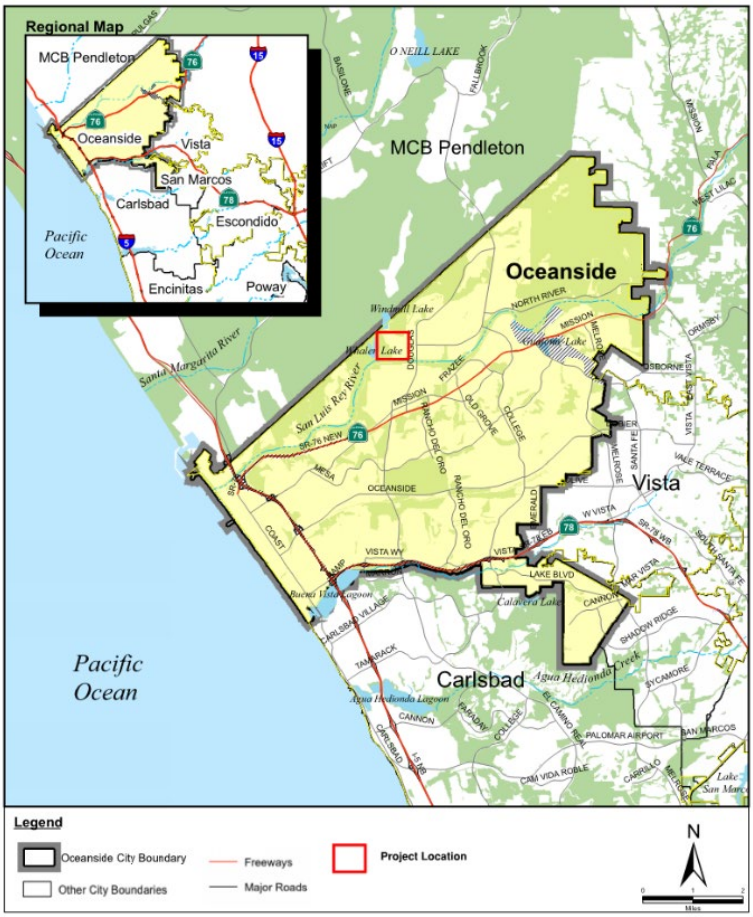
Applicant Category: The City of Oceanside is seeking funding under Funding Group I.

Eligibility of Applicant: The City of Oceanside is located in the Western United States, within territories defined in the Reclamation Act of June 17, 1902.

B. Project Description

Goals: ***The goal of the feasibility study is to identify the best alternative(s) to pursue when developing additional local water supply for the City.*** Five alternatives will study the expanded use of wastewater to create tertiary recycled water and/or FAT water; one alternative will evaluate the capture of stormwater and treatment to recycled water and/or FAT standards and one alternative will evaluate seawater desalination. The objective of this effort is to determine the most effective way to develop a local, reliable water source that provides immunity to drought, regulatory cutbacks, and the effects of climate change when compared to the City's current, primarily imported water supply. The study will consider the costs, operability, environmental constraints, regulatory feasibility, and funding opportunities of each alternative. Alternatives determined to have a fatal flaw will be eliminated.

FIGURE 1 - PROJECT LOCATION MAP



Project Approach: The City has largely completed construction of PWO Phase I project, including the new AWPF which has the capacity to produce 4.5 MGD or 3,360 AFY of FAT water. As

mentioned, the City proposes to evaluate five wastewater reuse alternatives. Additionally, an option to capture, treat and reuse stormwater will be considered. Finally, an updated seawater desalination option will be developed (desalination with initially studied by the City in 2010, "Seawater Desalination Pilot Facility and Feasibility Study"). The feasibility study tasks are presented below, including descriptions of each proposed alternative. It is anticipated that a consultant will prepare the feasibility study.

Task 1: Alternatives Development and Evaluation

A. Develop and evaluate the following water supply development alternatives for the City's consideration.

- *Alternative No. 1* – No expansion of the AWPF, operate the injection included in PWO Phase I as designed. Maintain use of FAT water to reduce Total Dissolved Solids (TDS) for agriculture. Upgrade SLRWRF Plant to reduce nitrogen and convey tertiary effluent to new spreading basins for groundwater recharge.
- *Alternative No. 2A* – No expansion of the AWPF, increase groundwater injection using all three injection wells. Maintain use of FAT water to reduce TDS for agriculture. Note: without expanding the AWPF a third injection well only increases the amount of injection by approximately 350 AFY.
- *Alternative No. 2B* - Expand AWPF to 6.0 MGD, increase groundwater injection using three injection wells. Maintain use of FAT water to reduce TDS for agriculture.
- *Alternative No. 3A* - Maintain groundwater injection using two injection wells. Expand AWPF to 6.0 MGD and upgrade to meet the anticipated requirements for Direct Potable Reuse (DPR) for the portion of the FAT water that is not injected or blended. Maintain use of FAT water to reduce TDS for agriculture.
- *Alternative No. 3B* - Maintain groundwater injection using two injection wells. Expand AWPF based on available supply and upgrade to meet the anticipated requirements for DPR for the portion of FAT water that is not injected. Maintain use of FAT water to reduce TDS for agriculture. Reduce other non-potable use of tertiary recycled water.
- *Alternative No. 4* – Update the costs and assumptions from the 2010 Seawater Desalination Project considered by the City.
- *Alternative No. 5* – Collect and store stormwater for treatment and subsequent groundwater recharge. Evaluate potential locations and recharge methods (percolation, injection, etc.).

B. Review evaluations of all alternatives and determine which alternative(s) to prepare further analysis that meet the requirements of *WTR 11-01*, *Reclamation Manual Directives and Standards*.

Task 2: Title XVI Feasibility Study

Prepare draft and final report that will align with the Title XVI Feasibility Study requirements set forth in WTR 11-01, including the following sections:

- Introductory information
- Statement of problems and needs

- Water reclamation, recycling, or desalination opportunities (Developed under Task 1)
- Description of alternatives, including figures for each option (Developed under Task 1)
- Selection of proposed project(s) and preparation of the following:
    - Economic Analysis
    - Environmental Consideration and Potential Effects
    - Legal and Institutional Requirements
    - Financial Capability of Sponsor
    - Research Needs

Task 3: Project Management

Hold project meetings with key members of the project team as needed to provide updates on progress on major technical activities and keep the project on schedule and within budget. Project meetings will allow for ongoing communication among project team members and discussion of issues related to the progression of technical activities and project status.

II. Responses to Evaluation Criteria

A. Evaluation Criterion 1- Project Planning and Analysis

Subcriterion 1a – Water Recycling Needs and Opportunities

1. Describe the problems and needs in the project area.

The City faces many challenges regarding its water supply. Ongoing drought and population growth, along with legal and environmental constraints combine to destabilize water supplies, particularly imported water, upon which the City relies on for nearly 79% of its supply. The southwestern United States is experiencing a megadrought which began in 2000. Over the past three years significant parts of the region have experienced extreme dry conditions, reducing State Water Project (SWP) and Colorado River system storage levels to historic lows. The urgency of drought conditions is exemplified by the current levels of Lake Mead and Lake Powell, with eminent concerns over hitting "deadpool" status.[1], when reservoir levels drop below a point where water cannot be used for water supply or hydroelectric power generation. As of late January, SWP will deliver just 30% of requested water supplies to its contractors. The last time the SWP delivered all water requested by contractors was 2006. Emergency water use restrictions are currently mandated in many communities throughout California. It is likely that mandatory restrictions will be enacted in Oceanside should drought conditions in distant watersheds persist. Imported water charges from the City's regional water wholesalers, the San Diego County Water Authority (SDCWA) and the Metropolitan Water District of Southern California (MWD) have increased significantly over the past decade due to growing costs to secure and convey water. In the face of these insecurities, City leaders are committed to developing local, reliable, drought-proof supplies to ensure clean, safe water is available to its residents and businesses, and to maintain public safety, health, and economic vitality of the community. To this end, the planning activities of this feasibility study will explore cost-

[1] Robyn White. January 3, 2023. "Lake Mead Water Levels Over Time Shown in Before and After Pictures." Lake Mead Water Levels Over Time Shown in Before and After Pictures (newsweek.com)

competitive and drought resilient opportunities for water reclamation, reuse, and desalination in the City's service area.

2. Describe the current and projected water supplies and demands in the project area; include a discussion on supply and demand imbalances. Additional consideration will be given to proposals that explain how the problems and needs in the area may be impacted by climate change, and/or if supply and demand projections will include climate change information.

From 2015 to 2020, 89% of the City's supply was purchased from SDCWA, the City's water wholesaler. During that time, 10% was supplied locally through groundwater extraction at Mission Basin. Tertiary recycled water made up less than one percent of the total water supply (see Table 1). SDCWA's supplies consist mostly of imported water from the Colorado River Aqueduct (CRA) and SWP, with up to 10 percent produced at the regional sweater desalination plant located in the city of Carlsbad. The distant water sources that supply most of the region is vulnerable to the impacts of climate change, environmental and regulatory restrictions, seismic risk, water quality issues, competing uses, and infrastructure instability. The City's historic water demands vary from year to year which can be attributed to annual variations in weather, economic activity, and droughts (see Table 1).

TABLE 1 - HISTORICAL WATER SUPPLIES 2015 – 2020

Supply Source	Supply (acre feet)						Average Supply (AFY)	Percentage of Supply (%)
	2015	2016	2017	2018	2019	2020		
Purchased from SDCWA	20,400	21,316	22,224	21,293	19,305	21,662	21,033	89%
Groundwater	3,213	2,313	1,491	2,749	2,450	2,302	2,420	10%
Recycled Water (Non-Potable)	104	120	242	268	239	249	204	1%
Total	**23,717**	**23,750**	**23,958**	**24,310**	**21,995**	**24,212**	**23,657**	**100%**

Source: City of Oceanside Urban Water Management Plan (UWMP) 2020

The recent completion of PWO Phase I begins to address these vulnerabilities by creating a new local supply to allow for a steady reduction in reliance on imported water. Table 2 – Project Water Supplies 2025-2045 illustrates this anticipated trend, showing purchased water from SDCWA remaining stable as the City significantly expands production of recycled/reuse to meet anticipated increases in demand. The City anticipates an increase in population (Table 3) and water demand (Table 4) through 2045. Population growth as well as the growth of industry, agriculture, and urbanization are increasing the demand for water resources, contributing to climate change and further aggravating the imbalance between water demand and supply. Global warming is impacting weather and precipitation patterns and requiring that water purveyors rethink how water supply portfolios are developed. The feasibility study will provide the basis to continue to plan and develop a portfolio in which a greater share of supply will come from sustainable, local sources. The study will provide critical information on how the City should pursue its goal of increasing local water supplies to 50% by 2030 to meet a goal established by

TABLE 2 - PROJECTED WATER SUPPLIES 2025 - 2045

Supply	2025	2030	2035	2040	2045
Purchased SDCWA Supply	14,881	9,578	9,750	9,808	9,980
Groundwater	2,800	2,800	2,800	2,800	2,800
Recycled Water (Non-Potable)	3,000	5,040	5,040	5,040	5,040
Advanced Treated Water (Potable Reuse)	3,360	6,720	6,720	6,720	6,720
Total	**24,041**	**24,138**	**24,310**	**24,368**	**24,540**

Source: City of Oceanside UWMP 2020

Oceanside's City Council. The study will provide the City with a roadmap to achieve this goal. Expansion of PWO, stormwater capture and reuse, or desalination will allow the City to meet increased water demands by a growing population from an uninterruptable, drought- proof, cost effective and high-quality source.

TABLE 3 - PROJECTED POPULATION 2020 - 2045

Population Served	2020	2025	2030	2035	2040	2045
	177,531	181,659	182,527	183,483	183,482	184,657

Source: SANDAG, 2020

TABLE 4 - PROJECTED WATER DEMANDS 2020 - 2045

	2020	2025	2030	2035	2040	2045
Potable and Raw Water	23,963	21,041	19,098	19,270	19,328	19,500
Non-Potable Recycled Water	249	3,000	5,040	5,040	5,040	5,040
TOTAL WATER DEMAND	**24,212**	**24,041**	**24,138**	**24,310**	**24,368**	**24,540**

Source: City of Oceanside UWMP 2020

3. Describe how the planning activities will investigate potential uses and markets for reclaimed or desalinated water (e.g., environmental restoration, fish and wildlife, groundwater recharge, municipal, domestic, industrial, agricultural, power generation, and recreation).

The study will investigate environmental and regulatory constraints, required infrastructure enhancements, and costs associated with the expanded beneficial uses of FAT, tertiary recycled water, stormwater, and desalinated water to meet growing demands from the City's municipal, domestic, industrial, agricultural sectors. It will evaluate the potential water quality and environmental benefits associated with desalinated water and expanded groundwater recharge (injection) of FAT water and captured stormwater into Mission Basin. The analysis will also explore the potential to upgrade treatment processes at SLRWRF to reduce nitrogen and convey tertiary effluent to spreading basins for groundwater recharge. Should the selected alternative include expanded use of effluent to create recycled or FAT water, the study will evaluate the environmental benefits associated with the reduction in secondary treated effluent disposed of through the ocean outfall to the Pacific Ocean. The agricultural industry is an important economic contributor to the City. The study will evaluate future demand from the agricultural

sector for a blended, low-salinity water consisting of an optimal combination of recycled water and FAT water that is ideal for use on local crops.

4. Describe the source water that will be considered for the project, including location, capacities, existing flows, treatment processes, and quantities of impaired water available to meet the new reclaimed, recycled, or desalinated water demands.

The source water considered for the project will be drawn from wastewater collected by the City. Effluent is currently treated at SLRWRF (location provided in Figure 1) and the La Salina Wastewater Treatment Plant (WWTP) located near the coast at 1330 Tait St, Oceanside, CA 92054. SLRWRF treats wastewater from the City's service area east of interstate 5 (I-5) and from neighboring cities and water districts. A capital project is planned that will reroute sewer flows from the antiquated La Salina WWTP to SLRWRF. This additional secondary effluent treated at SLRWRF is the source water to be considered in several of the recycle/reuse alternatives evaluated in this study. SLRWRF is a conventional activated sludge treatment facility with a treatment capacity of 17.6 MGD. Average daily flows at SLRWRF are approximately 8.7 MGD. With the rerouting of wastewater from La Salina, SLRWRF will receive an additional 2.7 MGD of effluent. The AWPF can treat 4.5 MGD of FAT water. AWPF purifies recycled water using state-of-the-art technology that replicates and accelerates nature's natural recycling process. The three purification steps are ultrafiltration, reverse osmosis (RO) and ultraviolet light advanced oxidization. This study will investigate the feasibility of increasing AWPF capacity from 4.5 to 6.0 MGD. The City has between 3.9 MGD and 6.9 MGD of secondary effluent available to produce FAT and/or tertiary recycled water at SLRWRF. The source water considered in the study's seawater desalination alternative is the Pacific Ocean, while the source for capture and recharge of stormwater is from rainfall that is captured and redirected to the headworks of SLRWRF. Capacities and flows for desalination and stormwater reuse will be developed as part of the feasibility study analysis. Treatment technologies required for each alternative will also be evaluated.

Subcriterion 1b-Evaluation of Project Alternatives

1. Describe the objectives that all alternatives will be designed to meet. What other water supply alternatives and project alternatives will be investigated?

The City first investigated possible indirect potable (IPR) reuse strategies in 2015. The City's ultimate goal is to derive 50% of its water supply from local sources by 2030. This includes a combination of recycled wastewater, groundwater, stormwater, and desalinated water. With the first phase of PWO complete the City is now seeking to evaluate alternatives that will achieve its 2030 goal. Similar to the objectives of the 2015 IPR evaluation, the proposed alternatives in this feasibility study will meet the following objectives:

- Reduce dependence on imported water supplies
- Improve water use efficiency
- Maximize drought resilience
- Diversify the City's water supply portfolio
- Improve water quality

Water supply alternatives that will be explored in addition to IPR include DPR, FAT water blended with recycled water, ocean seawater desalination, and stormwater capture, treatment and reuse.

2. Describe how the planning activities will develop project alternatives (water supply sources, reuse strategies, or treatment technologies) that have been or will be investigated.

To expand use of local water resources, the City will evaluate options for water recycling and potable reuse that considers: current estimates of tertiary recycled water demand and seasonal patterns, updated costs information, an alternative with DPR, and possible expansion of the AWPF to inject additional FAT water into Mission Basin. Planning activities will also include cost and design assumptions to develop a full-scale seawater desalination project alternative at Mission Basin Groundwater Purification Facility (MBGPF), where groundwater is currently being desalted via RO and then treated additionally to remove iron and manganese. An option to treat and recharge stormwater will also be considered. Each alternatives evaluation will investigate treatment technology requirements .

3. Provide a general description of the selected project, including project features, benefits, anticipated costs, and analyses conducted.

The study will evaluate seven alternatives – five are associated with recycling/reuse, one with the reuse of stormwater, and one with desalination of ocean water. The unit cost of water will be calculated for each alternative. The report will discuss the alternatives development and evaluation results along with an economic analysis, research needs, environmental considerations, and legal requirements of the selected alternative. Anticipated project costs of the selected alternative will be developed as part of the feasibility study.

Many of the specifics regarding features, benefits and anticipated costs for the desalination and stormwater alternatives are unknown and will be studied as part of this project. Should the City select one of the five recycle/reuse alternatives as the most viable alternative to pursue, the selected project will utilize supplemental secondary effluent from the SLRWRF as the source water for the production of FAT and recycled water. As mentioned, FAT water produced at the AWPF includes a multi-step treatment process consisting of ultrafiltration, RO and advanced oxidation to produce ultra-pure water for groundwater injection. If selected, a FAT water or recycled water alternative will produce benefits including development of a local water supply which will reduce dependence on the Colorado River and SWP systems, reduce ocean discharges, improve groundwater basin water quality and provide a cost-effective and reliable water supply. If selected, a stormwater reuse alternative would redirect captured stormwater to the headworks of SLRWRF it would undergo secondary treatment and treatment at the AWPF to create the same benefits as the recycle/reuse alternatives mentioned above. Stormwater reuse benefits also include reductions in runoff contaminants entering natural waterways. If a seawater desalination project were to be selected, features would include a pretreatment system, RO trains with high pressure pumps and energy recovery and RO flush pumps. Desalination project benefits include enhanced drought resiliency and reduced demand for imported water.

4. Include a preliminary schedule showing major tasks, milestones, and dates for the planning, design, and construction activities related to the project.

Major milestones and tasks required to implement a selected alternative are listed below with estimated preliminary dates.

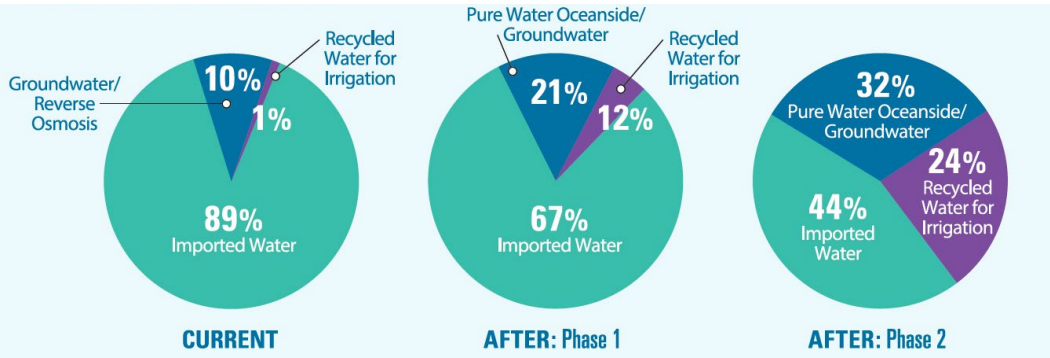
- **Planning** October 2023- October 2025
- **Permitting/Environmental** November 2025-December 2027
- **Design** January 2027-December 2028
- **Construction** January 2029 **-** December 2030

B. Evaluation Criterion 2 - Stretching Water Supplies

1. Describe the potential for the project to reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies.

The feasibility study will investigate ways in which the City can maximize its ability to produce additional water supplies which preserves and stretches the water supplies in oversubscribed imported water systems of the SWP and CRA. Figure 2 illustrates the City of Oceanside's current water supply portfolio and the enhanced portfolios after implementation of PWO Phase I and a potential Phase II. The project alternative that is selected will continue to improve regional water supply reliability by increasing FAT water production, desalination, and/or stormwater to postpone or alleviate the need for fresh water supplies that are met from additional imported water deliveries. The selected alternative will potentially reuse municipal wastewater, capture and reuse stormwater or desalinate oceanwater to generate local water sources. The alternative(s) selected will add to the diversification of the City's water supply and could reduce reliance on imported water by up to 45%. This will allow for greater water reliability and flexibility for other state and federal imported water users who face pressing drought challenges.

FIGURE 2 – OCEANSIDE WATER SUPPLY PORTFOLIOS



2. Describe the potential for the project to alleviate pressure on existing water supplies and/or facilities. 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.

The City's current water supplies include raw and treated water purchased from SDCWA, desalinated local groundwater from the Mission Basin, and recycled water for non-potable uses. In 2020, Oceanside purchased 86% of its total water supplies from SDCWA. Raw water purchased

from SDCWA is treated at the City's Robert A. Weese Water Filtration Plant. Local groundwater is pumped from the Mission Basin and treated at the MBGPF. Expanding the amount of local water production via one of the alternative projects will reduce demand for imported raw water, resulting in reduced processing at the filtration plant. Additionally, imported sources will become more readily available to users with a less diverse supply portfolio and heavier reliance on imported water from the SWP and CRA systems. Local groundwater is pumped from the Mission Basin and treated at the MBGPF. Although the total capacity of the MBGPF is 6.3 MGD, recent declines in groundwater levels are limiting supplies due to drought conditions. Increased use of groundwater by others that draw higher in the basin has also resulted in the City's limited ability to realize the full capacity of the MBGPF. Pursuit of a FAT water alternative would enable the City to increase pure water that is injected into Mission Basin, thus replenishing the basin and reducing demand for naturally occurring groundwater. The product water created by a stormwater alternative may be injected or spread across basin to supplement groundwater.

The facilities that will be impacted include enhancements to the AWPF and MBGPF. It is anticipated that the largest FAT water alternative project would inject approximately 6,720 AFY of purified water into Mission Basin by 2030 for eventual extraction and potable water treatment. Further, it would postpone the need for any sort of upsizing of the ocean outfall. As mentioned, pursuit of this alternative would utilize the effluent that is rerouted from an antiquated WWTP to SLRWPF. Further, it would postpone the need for any sort of upsizing of the ocean outfall.

3. Describe the potential for the project to make water available to address a specific concern. Explain the specific concern and its severity. Also explain the role of the project being investigated in addressing that concern and the extent to which the project will address it. Specific concerns may include, but are not limited to: • Water supply shortages • Water supply reliability • Groundwater depletion • Water quality issues • Natural disasters that may impact water supply infrastructure • Heightened competition for water supplies • Availability of alternative supplies • Increasing cost of water supplies

Water supply shortages

Many communities in Southern California are already experiencing water supply cutbacks from MWD, the region's water wholesaler. While not certain at this time, restrictions on imported water supplies are possible by summer 2023 should drought conditions continue. The project will directly address water supply shortages because a new local supply will be locally controlled, drought resilient and immune to water supply shortages.

Water supply reliability

Most of Oceanside's water is imported, making the City reliant on a water supply that is vulnerable to natural disasters and recurring drought. Reliability has been a major concern as snow deficits and high evaporative demands have contributed to three, straight years of below average runoff that feed reservoirs and support the western U.S. Alternatives being studied in this effort include PWO, which will use state-of-the-art water purification steps to recycle up to 6.0 MGD for potable reuse. Desalination and stormwater will also be considered. All alternatives

being considered will offer relief from imported water insecurities by creating a local, dependable water source for Oceanside.

Water quality issues

The feasibility study alternatives will provide water quality benefits by addressing various water quality issues detailed below:

- Reduce TDS/salinity concentration: project alternatives will include the blending of FAT water with recycled water to reduce TDS and salinity, thereby increasing the desirability and overall use of the product.
- Improve groundwater quality: injection of highly purified FAT water into the Mission Basin will address declining water quality in the basin.
- Prevent saltwater intrusion : the Mission Basin suffers from increased TDS from seawater intrusion; the introduction of FAT injection water will address the water quality concerns associated with sweater intrusion.
- Eliminate/improve stormwater runoff: Rerouting stormwater capture for reuse could improve stormwater runoff quality, which are typically high in metals, bacteria, and sediment, by sending it to the AWPF for treatment prior to groundwater recharge.

Natural disasters that may impact water supply infrastructure

A high reliance on imported water leaves the City vulnerable to the threat of climate change and natural disasters such as earthquakes, wildfire, and reoccurring drought. Implementation of an alternative evaluated in this feasibility study will address several natural disasters that threaten the City's water supply infrastructure. Risks from natural disaster are described below:

Earthquakes: SWP aqueducts are transected by the San Andreas fault whereby the risk of a major earthquake could severely damage imported water infrastructure and result in a cutoff of water supply to Southern Californians for an extended period. This project addresses potential earthquake impacts to infrastructure by making the City less reliant on supplies originating from the SWP. Local water developed by one of the alternatives is more likely to remain available to Oceanside residents/customers despite a significant seismic event.

Wildfires: Wildfires can degrade water quality for months after a fire is extinguished. The selected project will directly address this specific concern by relying less on drinking water reservoirs that reside in wildfire-prone areas. The project will provide Oceanside residents/customers with water supplies if a disruption of services occurs from the inability to treat reservoir water supplies impaired by wildfire debris.

Drought: The most current and salient natural disaster that threatens water resources in the west is prolonged drought. A selected project will produce drought-resilient water supplies allowing the City to continually produce water in times of drought and water shortages.

Heightened competition for water supplies

Intensified competition for imported water supplies pose a threat to the City's ability to access to the commodity, which currently fulfills a majority of its demand. The SWP delivers potable water to 29 public agencies and local water districts (SWP water contractors) that support 27

million Californians and 750,000 acres of agricultural lands. The Colorado River and its tributaries provide water to nearly 40 million people spanning seven states and 22 federally recognized tribes, not to mention the millions of acres of land that support vital ecosystems. Diverting water from the Colorado River and Bay Delta affects the ecosystems upon which fish and wildlife depend. This project will directly address the issue of heightened competition for water supplies by keeping imported supplies in the system for more at-risk users, and improving flow conditions in rivers in which the SWP and CRA systems draw from.

Increasing cost of water supplies

Most of the City's water is imported and originates from hundreds of miles away. This imported water is subject to rising conveyance costs that are out of the City's control. This project considers alternatives (reuse, desalination) that are economically competitive and more sustainable than imported water.

4. Describe the potential for the project to help create additional flexibility to address drought. Will water made available by the project being investigated continue to be available during periods of drought? To what extent is the water made available by the project being investigated more drought resistant than alternative water supply options? Explain.

The alternatives considered in this feasibility study are all "drought-resilient" which maximizes the City's ability to address drought challenges. All of the proposed alternatives will create flexibility to address drought by reducing dependence on imported water supplies that are afflicted by ongoing dry and hot conditions. If drought conditions persist, the availability of recycled water and seawater desalination will be maintained in times of drought because wastewater effluent flows and ocean water are unaffected by drought impacts. As for stormwater capture and reuse, availability may be reduced in periods of reduced local precipitation.

C. Evaluation Criterion 3 - Environment and Water Quality

1. Describe the potential for the project to improve the quality of surface water or groundwater.

Depending on the alternative that is selected, the project will potentially expand the amount of water FAT water that is injected into Mission Basin. Mission Basin has TDS levels ranging between 500 milligrams/Liter (mg/L) and 2,000 mg/L. FAT water is expected to have a TDS concentration of 50 to 100 mg/L. The anticipated effects on groundwater quality with respect to salinity from increased injection of FAT water would be a decrease in TDS concentrations. FAT water is expected to have a TDS concentration of 50 to 100 mg/L. Over time, the injection of FAT water will lower TDS concentrations and improve overall groundwater quality. An alternative that injects FAT water to the basin will improve water quality beyond Title 22 California Code of Regulations which establishes guidelines for how treated and tertiary recycled water is discharged and used.

2. Describe the potential for the project to improve effluent quality beyond levels necessary to meet State or Federal discharge requirements.

Oceanside's shoreline falls within SWRCB's 2014/2016 303(d) list of impaired water bodies, requiring total maximum daily loads (TMDLs) for indicator bacteria. SLRWRF and La Salina WWTP both discharge treated effluent through the Oceanside Ocean Outfall, located on the City's coast. Reducing the amount of treated effluent discharged through the outfall will reduce pollutant loading in the Pacific Ocean and help meet established TMDLs. Should one of the alternatives that increases FAT water production be selected, then the project will reduce the amount of effluent discharged to the Oceanside Ocean Outfall. Ammonia, nitrogen, and constituents of emerging concern will also be reduced. FAT water exceeds the requirements set forth by Title 22 California Code of Regulations, which include total nitrogen limit, TOC limit, primary and secondary MCLs, lead and copper action levels, and DDW Notification Levels (NLs). Additionally, FAT water must also meet SDRWQB's Basin Plan Water Quality Objectives for the Mission Groundwater Basin and pathogenic microorganism control requirements of Title 22, as shown in Table 6.

TABLE 6 – BASIN PLAN WATER QUALITY OBJECTIVES FOR THE MISSION GROUNDWATER

Parameter	Units	Basin Plan Water Quality Objective
TDS	mg/L	1,500
Chloride	mg/L	500
Sulfate	mg/L	500
% Sodium	%	60
Nitrate	mg/L	45
Iron	mg/L as $CaCO_3$	0.85
Manganese	mg/L	0.15
MBAS	mg/L	0.5
Boron	mg/L	0.75
Odor	Odor units	None
Turbidity	NTU	5
Color	Color units	15
Fluoride	mg/L	1.0

3. Describe the potential for the project to improve flow conditions in a natural stream channel.

While the actual ratio of imported water drawn from the Colorado River and SWP changes depending on a variety of factors, recent statistics show that in the last five years only 9% of SCDWA's imported water supply came from the SWP, with the remaining from the Colorado River. The selected project will increase production of a dependable, locally produced water supply which will decrease demand for imported water drawn from the Colorado River and SWP. This in turn improves flow conditions in the natural stream channels of the Colorado River, as well as the Feather River (main tributary to SWP) and the Sacramento Bay-Delta (a critical estuarine ecosystem of the SWP).

4. Describe the potential for the project to restore or enhance habitat for non-listed fish and wildlife species.

Colorado River Habitat - By decreasing the importation of water from the Colorado River, the selected alternative will contribute to increased flows within these systems which could enhance the habitat for non-listed fish and wildlife species. The Lower Colorado River supports several hundred species of wildlife. Water, in sufficient quantity and quality is fundamental to the health of the Colorado River and to the local survival of 17 non-listed species. Water is diverted from the Colorado River primarily at Lake Havasu and transported to Southern California via the CRA. The 2004 Lower Colorado River Multi-Species Conservation Plan estimates that flow reductions could reach 1,574,000 AFY by 2051, resulting in lower water levels and higher concentrations of contaminants from agricultural runoff. By decreasing reliance on imported water supplies, the

City could increase the quality and quantity of water maintained in the Colorado River and Lake Mead, thereby supporting the health of the river, and restoring and enhancing habitat for all those species that are dependent upon it.

Bay-Delta Habitat - The Sacramento Bay-Delta encompasses 1,600 square miles and provides habitat for more than 500 species of fish and wildlife. The 2013 Bay Delta Conservation Plan identified over 30 non-listed species potentially impacted by withdrawals from that system through the SWP (DWR, 2013). Impacts from withdrawals occur due to the change of river flow by pumping, capture within pumping equipment, and increased saltwater intrusion due to pumping. A decrease in water imported through the SWP could help to alleviate these pressures on the Delta ecosystem and could help restore habitat for non-listed species. The recent California drought resulted in reduced flows from little to no precipitation and reduced snowpack melt. Low flows and high temperature from the drought reduced water quality and impaired habitat for native fish. Lower flows, longer water residence times, and higher temperature from the drought led to the expansion of invasive aquatic species.[2] By reducing reliance on imported water, the habitat of non-listed species may be less negatively impacted by altered climate patterns. Non-listed species could benefit greatly from reduced pumping of imported water from their habitat, as many species rely on these habitats for ecologic function at various life stages and require constant freshwater flows.

5. Describe the potential for the project to provide water or habitat for federally listed threatened or endangered species.

As described above, it is anticipated that the proposed project will produce local water supplies that will directly offset demand for imported water from the Colorado River and SWP. Bolstering of local water supply sources will allow reduce diversions from the Colorado River and the Delta (a critical ecosystem of the SWP), leaving additional water in these water courses that can support native habitat, fish, and wildlife. In this way, all of the proposed alternatives would provide indirect riparian and ecosystem benefits in these imported water systems, contributing to protection of habitat for native species. The Lower Colorado River is home to six federally listed endangered or threatened species. Decreasing the importation of water from the Colorado River could improve both the quality and quantity of water there, which improves the habitat for both aquatic and riparian species including species that are federally listed. In the Delta system, increased outflow through the San Francisco Bay could help reduce salinity and improve habitat for fish and other species, which contains more than 35 endangered species (Center for Biological Diversity, 2019). In addition to the number of non-listed species mentioned above, there are 21 federally listed threatened and endangered species in the Delta that will benefit from the reduction in imported water for the City of Oceanside. These species include Delta smelt, Chinook salmon, Least Bell's vireo, and Conservancy fairy shrimp. With more water in the Colorado and Delta, these species may become more resilient to changes in the ecosystem. Tidal marsh microhabitat within the Delta supports diverse species of mammals, birds, and plants while

[2] John Durand et al. July 30, 2018. Lessons from California's 2012-2016 Drought. https://ascelibrary.org/doi/full/10.1061/(ASCE)WR.1943-5452.0000984#

riparian woodlands sustained by Delta flows provide breeding habitat for several federally listed birds. Reducing demands for imported water will increase the flows available to support these habitats and species.

D. Evaluation Criterion 4 - Department of the Interior Priorities

Without repeating benefits already described in previous criteria, describe in detail how the proposed project supports a priority(ies) below.

Climate Change:

1. Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.

Climate change is impacting California's water resources, as evidenced by changes in snowpack, sea level, and river flows. Climate models indicate that we are likely to see larger and intense storms, higher temperatures and extended dry periods. Storms will not bring more water overall, leading to more frequent or severe droughts. Warmer temperatures will lead to decreased snowpack and cause snow to melt faster and earlier, making it more difficult to store and use as supply during the warm months of the year and growing season. At the same time, higher temperatures are expected to increase demand for water. The alternatives studied will each directly mitigate climate change impacts by producing a sustainable and reliable water supply to help combat climate change risks faced by City. Finally, energy use and related carbon emissions will be reduced when the amount of imported water that is conveyed to Oceanside from Colorado and northern California is reduced, thus furthering this project's contribution to combating the climate crisis.

2. Does this proposed project strengthen water supply sustainability to increase resilience to climate change?

All alternatives reviewed in this study will strengthen water supply sustainability to increase resilience to climate changes. As discussed above, this project will produce a new, local, drought-proof water supply that will reduce dependency on water from distant watersheds that are already experiencing stress from the impacts of climate change.

3. Does the proposed project contribute to climate change resiliency in other ways not described above?

Depending upon the alternative selected, construction of this project will support the retirement/decommissioning of aging and unstable wastewater infrastructure that is located on the coast which has been identified as vulnerable to sea level rise and coastal flooding.

Disadvantaged or Underserved Communities:

Will the proposed project serve or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety by addressing water quality, new water supplies, or economic growth opportunities.

The City serves a population of 177,000. Approximately 32% of the City's service area is categorized as a disadvantaged community (DAC). DACs are areas with a Median Household

Income (MHI) of less than 80% of the statewide MHI of $84,092. Of Oceanside's DACs, 50% are considered severely disadvantaged communities (SDACs), defined as having an MHI less than 60% of the statewide MHI. Figure 3 is a map of Oceanside's DACs and SDACs. The benefits of the project will serve DACs by reducing the City's overall dependence on imported water. The selected alternative will be a cost-effective alternative for all City customers, including those residing in DACs and SDACS. The selected project will mitigate the impact of rising imported water costs. Avoidance of water rate increases may benefit rate payers located within DACs and SDAC more than other rate payers as higher utility rates place a disproportionate burden on ratepayers in these communities. The proposed project's water quality benefits to DACs/SDACs may include improving the quality of discharge into the Pacific Ocean. It may also include improvements to groundwater basin water quality with the increased injection of FAT water to Mission Basin. Additionally, improved water quality at public beaches from reduced discharges to the ocean will benefit the public health and safety of all patrons, including disadvantaged and underserved communities in the City and throughout the region.

Please describe in detail how the community is disadvantaged based on a combination of variables that may include the following: Low income, high and/or persistent poverty, High unemployment and underemployment; Racial and ethnic residential segregation, particularly where the segregation stems from discrimination by government entities; Linguistic isolation; High housing cost burden and substandard housing; Distressed neighborhoods; High transportation cost burden and/or low transportation access; Disproportionate environmental stressor burden and high cumulative impacts; Limited water and sanitation access and affordability; Disproportionate impacts from climate change; High energy cost burden and low energy access; Jobs lost through energy transition; Access to healthcare

Many factors, including socioeconomic factors, rates of high unemployment and high housing costs/substandard housing help define DACs. According DWR's mapping tool, in late 2022, Oceanside had a DAC population of 56,239, or 32% of its total population. Of the DAC group, 50% are considered a SDAC based on California's MHI of $84,092. Income level is the variable that designates a community group as disadvantaged. Unemployment can also be considered a variable contributing to a DAC or SDAC designation. Oceanside's DACs/SDACs face high housing cost burdens and are negatively impacted by California's high housing crisis. The median housing price in January 2023 in Oceanside was $760,000, whereas the median housing price in California was $751,000 and the national median housing price was $385,000. These burdensome housing costs have the potential to inequitably pre-dispose certain community groups to substandard housing, another variable that can contribute to DAC/SDAC designations and distressed neighborhoods. The City experiences higher rates of unemployment compared to regional. The City of Oceanside unemployment rate according to the Bureau of Labor Statistics was 3.0% as of December 2022. Comparatively, the San Diego County rate of unemployment was 2.7% as reported by the Employment Development Department of California (2023).

If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O.

13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.

As shown in Figure 3, the City's service area includes DACs and SDACs, some considered to be underserved community as established in Executive Order 13985[3]. Many of these communities share the common characteristic of being majority Hispanic/Latino, Black and Asian households. These underserved areas of Oceanside are communities concentrated near the State Route 76-highway corridor which reveal the potential for environmental inequity. In 2010, the Health Effect Institute concluded that health effects from highway traffic pollution can cause early onset of childhood asthma, impaired lung function and premature death from cardiovascular disease. The area most affected, they concluded, was roughly the band within 0.2 to 0.3 miles (300 to 500 meters) of the highway. DAC and SDACs therefore have an increased environmental burden if they live closer to major highways. Due to historic and systemic inequities, these communities also face greater economic and social challenges. The project activities are not anticipated to have a disproportionately adverse effect on low income or minority populations. The project components will directly increase the amount of locally controlled water supplies, providing benefits to all the City's customers within its service area. In addition to providing financial relief by exploring long-term cost-effective water portfolio solutions through this feasibility study, the City intends to offset future infrastructure costs by pursing federal grants for the entire service area, which will equally benefit DACs.

The City will provide ongoing communications to members of the community, providing ongoing updates on project development; some members of the community may be considered underrepresented. The City provides supplemental resources and classes at convenient resource centers in underserved areas of the community where updated information can be retrieved. Programs and information are available in multiple languages, including Spanish.

Tribal Benefits:

Does the proposed project directly serve and/or benefit a Tribe? Will the project improve water management for an Indian Tribe?

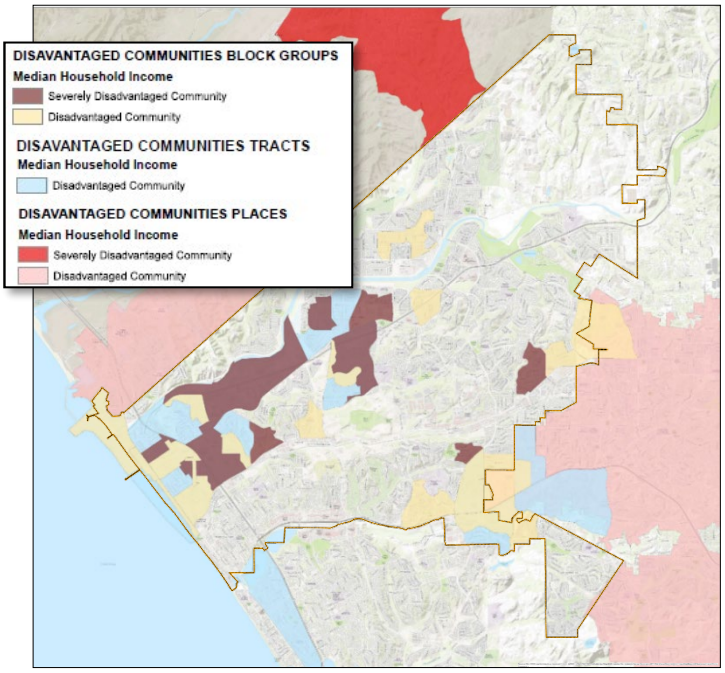
The project will reduce demands for imported water. This will make imported water more available to meet delivery obligations of a portion of the San Luis Rey Indian Water Rights Settlement Act of 1988, as amended by Congress, for local water and supplemental water deliveries to Tribes upstream from Oceanside's project area.

[3] President Joe Biden. January 20, 2021. Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/

Does the proposed project support Tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety by addressing water quality, new water supplies, or economic growth opportunities?

San Diego County is home to the largest number of federally recognized Native American tribes in a single county in the United States. The Tribes are entitled to 16,000-acre feet (AF) of Colorado River water each year - enough water to supply roughly 128,000 people. Completion

FIGURES 3. OCEANSIDE'S DISADVANTAGED COMMUNITIES (DAC) MAP



of the proposed project will provide water stability for the City and reduce pressure placed on Colorado River supplies that support the region. This in effect frees up Colorado River supplies for communities that have a greater need for imported water resources such as San Diego's Tribal communities. While the project does not directly support Tribal resilience to climate change, it does alleviate the drought impacts, which will have a positive impact on economic vitality, by which Tribes might benefit along with the whole region.

E. Evaluation Criterion 5 - Watershed Perspective and Stakeholder Involvement

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 accounts for interconnectedness of water and land resources, encourages active participation of all interested groups, and uses the full spectrum of technical disciplines in activities and decision making.

1. Will the proposed project implement a regional or state water plan or an integrated resource management plan?

The project components support several local and regional integrated resources management plans and planning efforts, as summarized below.

2022 California's Water Supply Strategy – Adapting to a Hotter, Drier Future
The proposed project aligns with the State's newly adopted water supply strategy as outlined in this document. Specifically, the project would contribute to the strategy's goal to "recycle and reuse at least 800,000 AFY by 2030, enabling better and safer use of wastewater currently discharged to the ocean." Additionally, the strategy aims to "make new water available for use by capturing stormwater and desalinating ocean water and salty water in groundwater basins, diversifying supplies and making the most of high flows during storm events."

2020 San Diego County Water Authority Urban Water Management Plan
The City is a member agency of the SDCWA. The Project supports the SDCWA's water-use efficiency goals and projections to provide a diversified water portfolio on a local level. The potable water supply yield from this project is included in SDCWA UWMP projections. Without the implementation of a project that increases development of local supply, SDCWA runs the risk of reaching projected dry year supply shortages at an earlier date depending on the level of severity of future droughts. This project creates a drought-proof supply and avoids exacerbating shortage scenarios currently forecasted for multi-year dry year yields.

City of Oceanside 2020 Urban Water Management Plan
The project is an essential component of the City's water supply portfolio diversification strategy. The City included the proposed project in its 2020 UWMP water supply projections. To realize these water supply projections the City must pursue a local water supply project .

2019 San Diego Integrated Regional Water Management (IRWM) Plan
The City is actively involved in the San Diego IRWM Program, having served as a member of its 32-member advisory council and on various workgroups. The IRWM Plan has several objectives that the project addresses including:

- Develop and maintain a diverse mix of water resources, encouraging their efficient use and development of local water supplies.
- Construct, operate, and maintain a reliable water management infrastructure system.
- Enhance the natural hydrologic process to reduce the effects of hydromodification and encourage integrated flood management.
- Protect, restore, and maintain habitat and open space. The Project diversifies Oceanside's supply portfolio and creates a sustainable and reliable water source alternative.

2018 San Diego Basin Study
The San Diego Basin Study is a partnership between Reclamation and the City of San Diego to assess the region's water supply and demand. The study aimed to determine the potential effects from climate change impacts within the San Diego IRWM region and analyzed the region's existing infrastructure to develop adaptation strategies. The Basin Study noted the project

enhances conservation, increases water supplies, optimizes existing facilities, improves watershed health and ecosystem restoration, and meets the goal to develop local sources to ease the burden on imported water sources.

2013 California Water Plan (CWP) Update

The 2013 CWP Update has 17 objectives and over 300 related actions to help conserve and plan for California's water future. The Project addresses the following objectives:

- Use and reuse water more efficiently
- Expand conjunctive management of multiple supplies
- Protect and restore surface water and groundwater quality
- Manage the Delta to achieve the coequal goals for California
- Reduce the carbon footprint of water systems and water uses

These objectives are satisfied by the Project's goals and will assist in preparing California for a more sustainable future for water resources.

2. Will the proposed project help meet the water supply needs of a large geographic area, region, or watershed? Explain.

This project will help meet the water supply needs of the City's entire service area which is 42 square miles and provides water to 177,000 residents and 86,000 people that work within the City limits.. This project will improve regional water supply reliability by increasing local water supply production and reducing the need for the region's imported water supplies.

3. Will the proposed project promote collaborative partnerships to address water-related issues? Explain. Describe stakeholder involvement in the project planning process.

As a member of the North San Diego Water Reuse Coalition (NSDWRC), the City is working increase the use of recycled water across the region. Since 2010 the NSDWRC has focused on expanding use of both potable and non-potable recycled water within the region to develop locally controlled, drought-proof, and reliable water supplies. This feasibility study directly supports NSDWRC's mission of increasing the use of recycled water to become more water independent from imported water supplies. PWO is the result of collaborative efforts between several local, state, and federal agencies that are seeking to expand potable reuse in the region, including the NSDWRC, US EPA, San Diego RWQCB, DDW, and the SWRCB Division of Financial Assistance. Additionally, the City is working closely with the SDCWA on water supply planning to ensure adequate deliveries for its customers and to secure a diverse set of water sources.

4. Will the proposed project include public outreach and opportunities for the public to learn about the project?

The City will communicate with community members through a variety of channels, hold workshops and provide informational materials to share information about the feasibility study.

III. Project Budget

A. Funding Plan

The total feasibility study estimated cost is $403,875. The City is requesting $201,000 from USBR from Funding Opportunity No. R23AS00076. The feasibility study is expected to be completed by October 31, 2025, which corresponds with the required completion date specified in the NOFO. The remaining costs or “non-federal cost share" will be $202,758 which will be covered by the City. The non-federal cost share is 50.22% of the total project cost share. The City has not applied for other funding programs to date but anticipates pursuing State funding through the SWRCB’s Recycling Funding Program (WRFP) sometime during the spring of 2023. Any SWRCB grant funding awarded for the feasibility study will be classified as “non-federal entities” share.

B. Budget Proposal

If awarded, the City will provide all non-federal funding in the amount of $202,785 for the feasibility study through the City’s Water Enterprise Fund. This stable funding source supports the City’s water capital program which is supported mainly by water ratepayers. Below is a breakdown of the proposed funding sources:

TABLE 7. SUMMARY OF NON-FEDERAL AND FEDERAL FUNDING SOURCES

Funding sources	Percent of Total Study Cost	Amount
Non-Federal Entities		
City of Oceanside -Water Enterprise Fund	50.22%	$202,785
Non-Federal Entities Subtotal		**$202,785**
Federal Entities		
Other Federal Entities	0.00%	$0
Request Reclamation Funding	49.78%	$201,000
Federal Entities Subtotal		**$201,000**
TOTAL STUDY COST	**100.00%**	**$403,785**

Table 8 provides total project cost by the source categories specified by USBR.

TABLE 8 TOTAL PROJECT COST TABLE

Source	Amount
Cost to be reimbursed with the requested Federal funding	$201,000
Costs to be paid by the applicant	$202,785
Value of third-party contributions	$0
TOTAL STUDY COST	**$403,785**

C. Budget Narrative

The feasibility study scope of work will be carried out by a consultant procured by the City. All budgeted costs will support the work of the selected consultant and will comply with the cost principles of 2 CFR Part 200, Subpart E. All feasibility study costs will be allowable, allocable, and reasonable per sections § 200.403, § 200.404 and § 200.405 of Subpart E. The table below is an

estimated project budget that corresponds to Section B of the SF-424A form prepared for this grant application.

SECTION B – BUDGET CATEGORIES					
		Computation		Quantity Type	Total Cost
	Object Class Category*	$/Unit	Quantity		
a.	Personnel	-			
b.	Fringe Benefits	-			
c.	Travel	-			
d.	Equipment	-			
e.	Supplies	-			
f.	Contractual				
	Consultant Costs				
	Principal In Charge	$345	29	hours	$10,005
	Project Manager/Tech Mgr.	$315	438	hours	$137,970
	Project Engineer	$265	536	hours	$142,040
	Staff Engineer	$225	486	hours	$109,350
	Administrative Support	$130	34	hours	$4,420
g.	Construction				
h.	Other Direct Costs				
i	**Total Direct Costs** *(sum 6a-6h)*				$403,785
j.	Indirect Costs				
k.	**TOTALS** ***(sum 6i and 6j)***				**$403,785**

Personnel
Funds for salaries and wages are not requested.

Fringe Benefits
Funds for fringe benefits are not requested.

Travel
Funds for travel are not requested.

Equipment
Funds for equipment are not requested.

Supplies
Funds for supplies are not requested.

Contractual

The requested budget is comprised of costs in the contractual budget category which include the following feasibility study tasks that will be carried out by a consultant:

(1) Alternatives Development and Evaluation
(2) Prepare Feasibility Study Report
(3) Project Management.

A consultant will prepare the feasibility study report per WTR 11-01 requirements, develop design criteria and sizing for cost estimates for each alternative and prioritize project alternatives. After selection of the proposed/recommended alternative, the following additional sections will be completed:

- Economic Analysis
- Environmental Consideration and Potential Effects
- Legal and Institutional Requirements
- Financial Capability of Sponsor
- Research Needs

The scope of services covers the full investigation of the seven alternatives. The rates and scope in the fee estimate provided are considered fair and reasonable.

Construction

Funds for construction are not requested.

Other Direct Costs

There are no direct costs included in the budget.

Indirect Costs

There are no indirect costs included in the budget.

D. Letters of Funding Commitment

No letters of funding commitment required for this project.

IV. Required Permits or Approvals

No permits or approvals are necessary for the development of the feasibility study. Should a desalination or stormwater project alternative be selected, the feasibility study will include discussion of required permits and approvals.

V. Official Resolution

An official resolution will be provided to USBR within 60 days of the application due date, per NOFO stipulations.

VI. Letters of Support

Letters of support can be found in Attachment 1 .

VII. Overlap or Duplication of Effort Statement

This study does not and will not duplicate any proposal or project that has been submitted for funding consideration to any other funding source—be it federal or non-federal.

The City has expressed interest in the SWRCB's Water Recycling Funding Program (WRFP) Planning Grant Opportunity. The WRFP funds projects that promote the beneficial use of treated municipal wastewater (recycled water). The City anticipates seeking funding from WRFP in the spring of 2023. Award announcements are made by SWRCB on a rolling basis. This funding is from a non-Federal source and would contribute to the non-federal source costs covered by USBR's WaterSMART Water Recycling and Desalination Funding Opportunity No. R23AS00076. As such, duplication of funding support or effort will not occur.

VIII. Uniform Audit Reporting Statement

A uniform auditing statement is provided as Attachment 2.

IX. Conflict of Interest Disclosure Statement

The City has reviewed section D.2.2.6 *Conflict of Interest Disclosure Statement* of the NOFO No. R23AS00076. The City does not foresee any actual or potential conflict of interest at the time of the feasibility study grant application submission. Oceanside will submit a conflict of interest disclosure or certification statement prior to issuance of an award per the requirements of the NOFO.

LEAGUE OF WOMEN VOTERS® OF NORTH COUNTY SAN DIEGO

February 24, 2023

The Honorable M. Camille Calimlim Touton
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

RE: USDOI USBR NOFO #R23AS00076

Dear Commissioner Touton:

On behalf of the League of Women Voters of North County San Diego, I am writing to express support for the City of Oceanside's grant application to the referenced notice of funding opportunity. The City of Oceanside is proposing the Water Reuse, Recycling and Seawater Desalination Feasibility Study to build on the achievements of Pure Water Oceanside (PWO), the first potable reuse project to operate in San Diego County.

PWO purifies recycled water to create a new, local source of high-quality drinking water that is clean, safe, drought-proof and environmentally sound. In December 2021, PWO began Phase I, producing advanced treated water to provide a new, drought-resilient source of water supply that helps Oceanside move closer to achieving the goal of reducing reliance on imported water supplies from the Colorado River and California State Water Project. PWO Phase 1 will reduce Oceanside's imported water demand by 21%.

The City is requesting grant funding from the USBR to complete an additional study, the Water Reuse, Recycling and Seawater Desalination Feasibility Study, to identify and evaluate alternatives that will allow Oceanside to increase water recycling production capabilities beyond Phase 1 and help the City achieve the goal of providing more than 32% of the City's water supply, thus reducing reliance on imported water from federal and state water systems, protecting the region against drought, and improving water quality in the Mission Basin. This important study also supports Executive Order 14008: Tackling the Climate Crisis at Home and Abroad priorities by safeguarding waters in the above-mentioned imported water systems from climate vulnerabilities.

The League of Women Voters of North County San Diego recognizes the valuable role that this study plays in creating a sustainable future for our community. Please accept our recommendation for full and fair consideration, as permitted under law, of the City of Oceanside's WaterSMART: Water Recycling and Desalination Planning funding application for this feasibility study.

Sincerely,

Rosette Garcia

Rosette Garcia, President

Project Name:
City of Oceanside
Water Reuse, Recycling and Seawater Desalination Feasibility Study
Grant Application
Due February 28, 2023; 4:00 MST

Prepared For:

U.S. Department of the Interior - Bureau of Reclamation
WaterSMART Grants:
Water Recycling and Desalination Planning Funding Opportunity Number:
R23AS00076
Prepared by:

Project Manager:
Mabel Uyeda
Principal Water Engineer
City of Oceanside
300 N. Coast Hwy
Oceanside, CA 92054
Phone: 760-435-5819
Email: muyeda@oceansideca.org

Budget Narrative

The feasibility study scope of work will be carried out by a consultant procured by the City. All budgeted costs will support the work of the selected consultant and will comply with the cost principles of 2 CFR Part 200, Subpart E. All feasibility study costs will be allowable, allocable, and reasonable per sections § 200.403, § 200.404 and § 200.405 of Subpart E. The table below is an estimated project budget that corresponds to Section B of the SF-424A form prepared for this grant application.

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	Object Class Category*	$/Unit	Quantity		
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c.	Travel	-			
d.	Equipment	-			
e.	Supplies	-			
f.	Contractual				
	Consultant Costs				
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	Project Engineer	$265	536	hours	$142,040
	Staff Engineer	$225	486	hours	$109,350
	Administrative Support	$130	34	hours	$4,420
g.	Construction				
h.	Other Direct Costs				
i	**Total Direct Costs** *(sum 6a-6h)*				$403,785
j.	Indirect Costs				
k.	**TOTALS** ***(sum 6i and 6j)***				**$403,785**

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Travel

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Equipment

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- Environmental Consideration and Potential Effects
- Legal and Institutional Requirements
- Financial Capability of Sponsor
- Research Needs

The scope of services covers the full investigation of the seven alternatives. The rates and scope in the fee estimate provided are considered fair and reasonable.

Construction

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Other Direct Costs

There are no direct costs included in the budget.

Indirect Costs

There are no indirect costs included in the budget.

Attachment 1
Letters of Support

February 24, 2023

The Honorable M. Camille Calimlim Touton
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Commissioner Touton:

On behalf of Rancho California Water District (Rancho Water), a water, wastewater, and recycled water provider in southwest Riverside County, we would like to express support for the City of Oceanside's grant application to the U.S. Department of the Interior (DOI) Bureau of Reclamation's (USBR) WaterSMART: Water Recycling and Desalination Planning Notice of Funding Opportunity (NOFO) #R23AS00076. The City is proposing the *Water Reuse, Recycling, and Seawater Desalination Feasibility Study* to advance the achievements of Pure Water Oceanside (PWO), which is the first potable reuse project to operate in San Diego County. PWO purifies recycled water to create a new, local source of high-quality drinking water that is clean, safe, drought-proof, and environmentally sound.

In December 2021, PWO began producing advanced treated water as part of Phase 1. This new, drought-resilient source of water supply helps Oceanside move closer to achieving the goal of reducing reliance on imported water supplies from the Colorado River and California State Water Project. PWO Phase 1 will reduce Oceanside's imported water demand by 21 percent.

The City requests grant funding from the USBR to complete an additional study, the Water Reuse, Recycling and Seawater Desalination Feasibility Study, to identify and evaluate alternatives allowing Oceanside to maximize water recycling production capabilities beyond Phase 1. The feasibility study will help the City accomplish the overall PWO goal of producing enough potable reuse water to provide more than 32 percent of the City's water supply. If funded, the City will be able to move forward on its efforts to reduce reliance on imported water from federal and state water systems, protect the region against drought, and improve water quality in the Mission Basin. This important study also supports Executive Order 14008: *Tackling the Climate Crisis at Home and Abroad* priorities by safeguarding waters in the above-mentioned imported water systems from climate vulnerabilities.

Rancho Water recognizes the valuable role that this future facility will play in creating a sustainable future for Southern California. As a neighboring water provider to the north of the City of Oceanside, we recognize that as a region, we must collectively move forward with an "all of the above" approach to reduce reliance on imported water supplies and provide water resiliency in the face of climate change and changing precipitation patterns. Rancho Water is pleased to support this important effort and request the acceptance of our recommendation for full and fair consideration, as permitted under law, of the City of Oceanside's WaterSMART: Water Recycling and Desalination Planning funding application for this feasibility study.

Sincerely,

RANCHO CALIFORNIA WATER DISTRICT

Robert S. Grantham
General Manager

CALIFORNIA ASSOCIATION of SANITATION AGENCIES

925 L Street, Suite 200 • Sacramento, CA 95814 • TEL: (916) 446-0388 • www.CASAweb.org

February 27, 2023

The Honorable M. Camille Calimlim Touton
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Commissioner Touton:

The California Association of Sanitation Agencies (CASA) is pleased to submit this letter of support for the City of Oceanside's grant application to the U.S. Department of the Interior (DOI) Bureau of Reclamation's (USBR) WaterSMART: Water Recycling and Desalination Planning Notice of Funding Opportunity (NOFO) #R23AS00076. The City is proposing the *Water Reuse, Recycling and Seawater Desalination Feasibility Study* to advance the achievements of Pure Water Oceanside (PWO) – the first potable reuse project to operate in San Diego County. PWO purifies recycled water to create a new, local source of high-quality drinking water that is clean, safe, drought-proof and environmentally sound.

CASA is an association of local California wastewater agencies, known as Water Resource Recovery Facilities (WRRFs), engaged in advancing the recycling of wastewater into usable water, as well as the generation and beneficial use of renewable energy, biosolids, fuel, and other valuable resources. Through these efforts we help create a clean and sustainable environment for future generations.

In December 2021, PWO began producing advanced treated water as part of Phase 1. This new, drought resilient source of water supply helps Oceanside move closer to achieving the goal of reducing reliance on imported water supplies from the Colorado River and California State Water Project. PWO Phase 1 will reduce Oceanside's imported water demand by 21%.

The City is requesting grant funding from the USBR to complete an additional study, the *Water Reuse, Recycling and Seawater Desalination Feasibility Study*, to identify and evaluate alternatives that will allow Oceanside to maximize water recycling production capabilities beyond Phase 1. The feasibility study will help the City accomplish the overall PWO goal of producing enough potable reuse water to provide more than 32% of the City's water supply. If funded, the City will be able to move forward on their efforts to reduce reliance on imported water from federal and state water systems, protect the region against drought, and improve water quality in the Mission Basin. This important study also supports Executive Order 14008: *Tackling the Climate Crisis at Home and Abroad* priorities by safeguarding waters in the above-mentioned imported water systems from climate vulnerabilities.

CASA recognizes the valuable role that this study plays in creating a sustainable future and supports this project as a means of increasing resiliency and addressing the persistent water shortage in California and throughout the west. This project illustrates the proactive position the City is taking to find pragmatic solutions to an ongoing crisis.

Please accept our recommendation for full and fair consideration, as permitted under law, of the City of Oceanside's WaterSMART: Water Recycling and Desalination Planning funding application for this feasibility study.

Sincerely,

Adam D. Link
Executive Director
alink@casawb.org

916-446-0388

cc: Greg Kester, Director of Renewable Resource Programs
Justin Gamble, City of Oceanside

San Diego Regional Water Quality Control Board

February 27, 2023

The Honorable M. Camille Calimlim Touton
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Subject: Letter of Support for Pure Water Oceanside Application for WaterSMART: Water Recycling and Desalination Planning Notice of Funding Opportunity #R23AS00076

Commissioner Touton:

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), is writing to express support for the City of Oceanside's (City) grant application to the U.S. Department of the Interior (DOI) Bureau of Reclamation's (USBR) WaterSMART: Water Recycling and Desalination Planning Notice of Funding Opportunity (NOFO) #R23AS00076. The City is proposing the *Water Reuse, Recycling and Seawater Desalination Feasibility Study* to advance the achievements of Pure Water Oceanside (PWO) – the first potable reuse project to operate in San Diego County. PWO purifies recycled water to create a new, local source of high-quality drinking water that is clean, safe, drought-proof and environmentally sound.

The San Diego Water Board issued Order No. R9-2021-0100, *Waste Discharge and Water Reclamation Requirements for the City of Oceanside, Advanced Water Purification Facility, Indirect Potable Reuse for Groundwater Recharge, San Diego County* (Order) to the City in December 2021. The Order establishes waste discharge and water recycling requirements that allow the City to inject 3.0 million gallons per day of advanced treated recycled water into the groundwater of the Mission Groundwater Basin for indirect potable reuse. The Order is the first permit issued by the San Diego Water Board for an indirect potable reuse via groundwater recharge project and allowed PWO to begin producing advanced treated recycled water. This new, drought resilient source of water supply helps the City move closer to achieving the goal of reducing reliance on imported water supplies from the Colorado River and California State Water Project.

The City is requesting grant funding from the USBR to complete an additional study, the *Water Reuse, Recycling and Seawater Desalination Feasibility Study,* to identify and evaluate alternatives that will allow Oceanside to maximize water recycling production

capabilities beyond Phase 1 of PWO. The feasibility study will help the City accomplish the overall PWO goal of producing enough potable reuse water to provide more than 32% of the City's potable water supply. If funded, the City will be able to move forward on their efforts to reduce reliance on imported water from federal and state water systems, protect the region against drought, and improve water quality in the Mission Groundwater Basin. This important study also supports President Biden's Executive Order 14008: *Tackling the Climate Crisis at Home and Abroad* by safeguarding waters in the above-mentioned imported water systems from climate vulnerabilities.

The San Diego Water Board recognizes the valuable role that this study plays in creating a sustainable future. The San Diego Water Board supports the project because our Practical Vision[1] prioritizes strategies to help achieve a resilient local water supply. The San Diego Water Board recognizes and appreciates the valuable role the City's PWO project plays in helping increase the resiliency and dependability of water supplies in northern San Diego County.

In conclusion, the San Diego Water Board supports the City's project and asks for full and fair consideration, as permitted under law, of the City's application for DOI WaterSMART NOFO funding. If you have any questions, please contact me at (619) 516-1990.

Respectfully,

David W. Gibson
Executive Officer

DWG:bn:bb

[1] San Diego Water Board Practical Vision: https://www.waterboards.ca.gov/sandiego/water_issues/programs/practical_vision/

Attachment 2
Uniform Audit Reporting Statement

CITY OF OCEANSIDE
WATER UTILITIES DEPARTMENT

February 27, 2023

The Honorable M. Camille Calimlim Touton
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

RE: Uniform Audit Reporting Statement for Notice of Funding Opportunity No. R23AS00076

Dear Commissioner Touton:

The City of Oceanside hereby submits a uniform audit reporting statement per the Department of Interior's WaterSMART: Water Recycling and Desalination Planning Funding Opportunity Number R23AS00076.

The City submitted a Single Audit Report for fiscal years 2020 and 2021. These reports are available through the Federal Audit Clearinghouse website and the Employer Identification Number associated with the reports is 951688570.

Sincerely,

Mabel Uyeda

Mabel Uyeda, P.E.
Principal Water Engineer

C: Lindsay Leahy, Water Utilities Director