Well 38 Water Treatment Project

R22AS00020
WaterSMART Drought Response Program: Drought Resiliency Project Grants for FY2022 Funding Group II

Prepared For:
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SECTION 1: TECHNICAL PROPOSAL

A. Executive Summary

Date: October 5, 2021
City: City of Santa Ana
County: Orange County
State: California

Applicant Name: City of Santa Ana
Project Length of Time: 26 months
Estimated Completion Date: October 2023
Located on a Federal Facility: No

The City of Santa Ana (the City) is a Category 'A' applicant. The City of Santa Ana will construct a new ion exchange water treatment facility at the site of Well 38 (the Project). The Orange County Water District (OCWD), in cooperation with the City of Santa Ana, completed a study titled "Producer Report - City of Santa Ana PFAS Treatment Systems Planning Study" (the Producer Reports (Appendix B). In the study, OCWD identified Well 38 as exceeding contamination limits for Per- and Polyfluoroalkyl Substances (PFAS as established by the State of California as a priority for remediation. As a result, Well 38, which produces **4,000 are-feet per year (AFY** of drinking water, was taken offline. Loss of water from Well 38 is made up for with expensive imported water that is not a reliable source during drought and results in a higher cost of service for ratepayers in a city that is composed of many disadvantaged communities. The Project further implements one of the strategies identified in the City's ongoing planning efforts to build resiliency to droughts by making water available in the short and long terms and providing flexibility in current and future years of low water supply. The Project is directly aimed at providing operational flexibility and restoring a reliable and sustainable source of water during droughts. Droughts have been a regular occurrence in the State and in Southern California. The latest drought lasted five years from 2012 to 2017. In addition, Orange County is currently experiencing a Category D2 – Severe Drought according to the U.S. Drought Monitor. A Design Technical Memorandum (the Technical Memorandum (Appendix C) has been completed for the Project. An engineering consultant has been retained by OCWD and the final design for the Project is in progress. The Project is expected to take 26 months to design and construct. The Project will be ready to advertise for construction bids by July 2022 and is expected to complete construction in October 2023. The Project will be shovel ready when the Bureau of Reclamation (Reclamation) grant agreement is processed.

B. Project Location

The City of Santa Ana's Well 38 is located inside the Cambridge Station site at 2736 N Cambridge Street, Santa Ana, as shown in Figure 1. The coordinates are 33°46'31.2"N latitude and 117°50'42.2"W longitude. Well 38 is one of four wells,

Figure 1. Project Location Map

which deliver water to the City's Upper Zone, along with Wells 27, 28, and 40, as shown on the map in Figure 2.

Figure 2. Upper Zone Impacted Wells

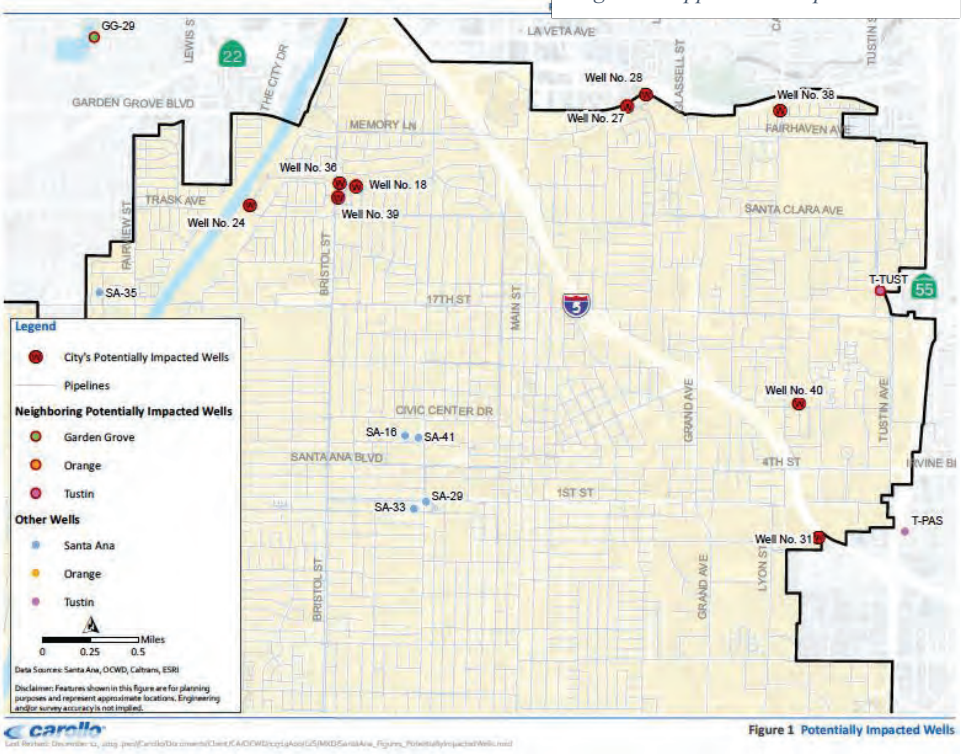


Figure 1 Potentially Impacted Wells

C. Technical Project Description

The Producer Report performed a thorough analysis of the various viable alternatives to achieve the goal of lowering contamination concentration levels to **2 parts per trillion ppt or less**. Using a detailed evaluation of a range of factors, Ion Exchange (IX wellhead treatment was selected as the most effective and efficient technology for the Project.

IX treatment is commonly used for the removal of groundwater contaminants, such as nitrate and perchlorate, and consists of pressurized treatment vessels filled with polymer-based IX resin that removes contaminants as water passes over it. The resins consist of very small plastic porous beads with affixed charges functionally balanced by counter ions. Contaminant removal occurs when the counter ion is exchanged for the charged contaminant ion. For the Project, the process and equipment used in the IX treatment based on the design criteria established in the Producer Report and the Technical Memorandum and are summarized below:

1. Prefiltration: horizontal cartridge filters will be used to remove suspended solids from the water before going through the IX process.
2. The water flow from the well will be distributed to two parallel IX trains, each with two IX vessels operated in series as lead-lag. Each vessel has a diameter of 12 ft, resin volume of 425 cubic feet, and the vessel empty bed contact time is 2.5 minutes.
3. Pressure indicator transmitters for measuring differential pressure across the cartridge filters.
4. Rotameters on each IX train for local flow rate indication.
5. Pressure gauges and differential pressure transmitters provided on IX vessel manifold for each vessel (included within vendor supply).
6. Chlorine residual analyzer (existing).
7. Pressure sustaining valve (PSV) downstream of the IX train piping prior to entering the reservoir to keep IX vessels flooded with water.
8. Piping.
9. Equipment pad.

10. The instrumentation and control system will be designed in accordance with the industry codes, while complying with all applicable City standards developed by Enterprise Automation, the City's Supervisory Control and Data Acquisition (SCADA) integrator.

The Design Technical Memo (Appendix C) contains the Project preliminary design plans showing the treatment process and infrastructure.

D. Performance Measures

The Producer Report identified the City's Well 38 as exceeding the state Notification Limits (NL for PFAS concentrations. The levels of PFAS found in Well 38 are summarized in Table 1 below. Since the well exceeds the contamination limits established by State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW), the City took the well offline and it is currently not producing water despite the well being functionally sound. The deficit in the water from Well 38 is currently being replaced by imported water purchased from the Metropolitan Water District of Southern California MWD) via the State Water Project SWP or the Colorado River Aqueduct (CRA .

Table 1. Well 38 Contamination Levels

Parameter	PFOS	PFOA	PFBS	PFHxS	PFHxA
Average Concentration (ppt	14.0	9.3	4.4	6.9	4.9
Maximum Concentration (ppt	15.1	10.1	4.7	7.8	5.1
NL (ppt	6.5	5.1	n/a	n/a	n/a
RL (ppt	40	10	n/a	n/a	n/a

The Project will allow Well 38 to come back online by treating the water from the well to bring the PFAS levels down to 2 ppt or less. The performance measures that will be used to quantify the success of the Project are:

1. Production of **4,000 AFY** of water every year from Well 38.
2. Water from Well 38 with PFAS concentration levels of 2 ppt or less.
3. Cost savings to the City and its customers. This will be calculated by taking the difference of cost between 4,000 AFY of imported SWP/CRA water and 4,000 AFY of water produced from Well 38. The difference in cost between pumped and import water is at least $570 per AF. The cost savings for the proposed project are significant and easily quantifiable through this performance measure.

E. Evaluation Criteria

E.1.1 Evaluation Criterion A — Project Benefits

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits? In 2020, the City supplied a total of 33,489 AF of water. Therefore, the 4,000 AFY of water production from Well 38 amounts to **12%** of the City's total water supply that has been interrupted. The PFAS contamination levels in Well 38 exceed State established limits, which prompted the City to take the well offline. The water previously produced from Well 38 is currently being replaced by imported water from MWD via the SWP/CRA, which is a vulnerable resource that is threatened by drought.

In February 2020, the California SWRCB DDW established revised drinking water Response Levels (RLs) of 40 parts per trillion (ppt) for perfluorooctane sulfonate (PFOS) and 10 ppt for perfluorooctanoic acid (PFOA). PFOS and PFOA are part of a group of man-made substances known as per- and polyfluoroalkyl substances (PFAS). The unique chemical structure of PFAS make them exceptional surface-active agents for products including stain- and water-repellent fabrics, nonstick cookware and fire-fighting foams.

According to USGS pilot studies, "PFASs are not readily biodegradable and are susceptible to migrating away from the original source through water. Groundwater can be a potential path for PFAS to move through aquifers used for water supply." According to the National Groundwater Association, many PFAS compounds dissolve easily in water, don't break down in the environment, and can travel miles to wells, wetlands, and streams.

The presence of PFAS was first documented in the Orange County Groundwater Basin (OC Basin) during the federal Environmental Protection Agency (EPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) program, which required monitoring for 30 contaminants between 2013 and 2015. Since then, the OCWD, which manages the OC Basin, has been routinely sampling water from wells in the OC Basin. Most recently, OCWD, in cooperation with the City of Santa Ana, completed a study titled "Producer Report - City of Santa Ana PFAS Treatment Systems Planning Study". The study identified which wells exceed the DDW PFAS concentration limits, analyzed alternatives for treatment, and made a recommendation on the preferred alternative. The PFAS study was followed up by a Basis of Design Technical Memorandum for Well 38 treatment. These reports are attached as Appendix B C, respectively.

The extreme impacts of climate change on water availability have become clear in recent years. All scientific research, as well as, actual drought patterns in recent years, indicate the frequency, severity and duration of droughts are increasing. The SWP and CRA provide a substantial source of water for many agencies in California. The water in the SWP originates in the snow pack in the Sierra Nevada Mountain range. The snow pack, which gradually melts in the spring and summer flows down rivers and aqueducts and into lakes and reservoirs around the state where the water gets treated for human use. However, the once reliable Sierra Nevada Mountains in Northern California with consistent rain and snow fall have recently experienced regular droughts. The Sierra Nevada Region is currently designated as Category D4 – Exceptional Drought Area status and Category D3 – Extreme Drought Area status (U.S. Drought Monitor). The City of Santa Ana is currently designated Category D2 – Severe Drought status.

The Colorado River, which originates in the Colorado Rocky Mountains has been a very consistent source of water for seven Western U.S. states and Mexico until recently. There has been a prolonged 21-year warming and drying trend that is pushing one of the nation s largest water supplies to record lows. Due to the low levels of water, in August 2021, the Federal Government has declared a Tier 1 water shortage in the Colorado River for the first time ever. This declaration means an actual reduction in the amounts of water that Arizona, Nevada and Mexico can claim from the river.

The last severe drought to affect the State occurred seven years ago between 2012-2017 with 2013-2014 having extraordinarily dry conditions. In the 2019 State Water Project Delivery Capability Report, the member agencies could only receive up to 58% of their maximum allowable deliveries of water, although 2019 was a normal, non-drought year.

The high demand for imported water supplies by member agencies and the variability in the availability of this resource makes it unreliable, especially during droughts. As mentioned above, the well contamination makes the City more dependent on this vulnerable source. However, the Project will treat the water from Well 38 and shift the City towards a more reliable, local, and sustainable source of water. This gives the City much more operational flexibility and enhances water management to enable the appropriate response during droughts. The well water treatment facility has a 30-year life and is expected to last at least through the year 2050.

Will the project make additional water supplies available? If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Yes, the Project will allow the City to utilize **4,000 AFY** of water available from Well 38, a reliable source, to the City to serve its customers. This is based on the well's design flow of 2,500 gpm.

What percentage of the total water supply does the additional water supply represent? How was this estimate calculated? The City of Santa Ana completed its 2020 Urban Water Management Plan (UWMP) (Appendix D) which states the City supplied a total of 33,489 AF of water in 2020. Therefore, the 4,000 AFY of water production from Well 38 amounts to **12%** of the agency's total water supply.

Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies. The Project will restore a reliable source of water during droughts by treating water from Well 38 and substantially reduce reliance on unpredictable and increasingly scarce water from the SWP/CRA, thus achieving the following benefits:

1. The City of Santa Ana is working diligently to improve resiliency to droughts and this Project constitutes an important and substantial part of this effort by providing a reliable and sustainable source of water in the amount of 4,000 AFY.
2. Shifting to more reliable and sustainable sources of water gives the City more operational flexibility in how to allocate and supply water during droughts.
3. The Project will help reduce the demand for imported water from MWD via the SWP and CRA, which is an increasingly unstable source of water, especially during droughts.

Will the project improve the management of water supplies? The Project will help the City of Santa Ana better manage its water portfolio by incorporating a reliable and sustainable source of water. This enables the City to have more operational flexibility by reducing demand from other sources of water such as imported water from MWD. This Project will also serve as a model for other local agencies to pursue PFAS treatment for its groundwater resources.

How will the project increase efficiency or operational flexibility? The 2020 sources of water for the City of Santa Ana are summarized in the table below:

Table 2. City of Santa Ana 2020 Water Supplies

Source	Quantity (AFY)	Percentage of Total Supply
Groundwater	25,591	76.4%
Recycled Water	249	0.8%
Imported Water	7,649	22.8%
TOTAL	**33,489**	**100%**

The City of Santa Ana uses wells to pump groundwater from the OC Basin. The OC Basin is a well-managed basin in the region, which makes it is a stable source of water that is pumped in a responsible manner by member agencies. The City of Santa Ana has a goal of maximizing water supplies that are reliable and sustainable, which is reflected in the share of local groundwater in its water portfolio in Table 2. Reliable and sustainable water that is locally available such as groundwater provides for an excellent way to achieve operational flexibility in providing water, especially during droughts. The Project will treat groundwater pumped from Well 38, which enables the well to come back into production. This works towards the City's goal of shifting away from vulnerable and unpredictable sources of water such as the imported water from MWD via the SWP/CRA and raises the City's level of operational flexibility.

What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? The Project will produce 4,000 AFY of clean drinking water from Well 38. The capacity of the well is 2,500 gpm which equates to ~4,000 AFY.

What percentage of the total water supply does the water better managed represent? How was this estimate calculated? According to the 2020 UWMP, the City's total supply in 2020 was 33,489 AF. Therefore, the 4,000 AFY from a new water source equates to ~**12%** of the City's total water supply.

Provide a brief qualitative description of the degree/significance of anticipated water management benefits. The recurrence and severity of droughts in the region has made proper water management crucial in order to be able to maintain a reliable water supply for the health and safety of the public and to maintain viable economic growth. For the City of Santa Ana, having a sustainable local water source readily available during droughts is key. City has been striving to use as much of its groundwater as possible as it is a reliable source of water. Having to take this well out of service due to PFAS contaminations is a major setback to the City's water supply portfolio goals. The Project makes available 4,000 AFY of water that further shifts the reliance on expensive imported sources of water through the SWP/CRA, the quantity of which is unpredictable and not guaranteed in dry years. Therefore, the water from the Project, which constitutes 12% of the City's total water supply provides substantial flexibility in responding to droughts translates into enhanced management of the water resource.

Also, since PFAS are highly water soluble and therefore very mobile in groundwater, the removal of this contaminant from the proposed well site will allow clean up and prevention of the groundwater basin contamination not only for the City residents but for over 2.5 million people within 19 cities and water agencies who utilize this basin as their drinking water source.

Will the project make new information available to water managers? If so, what is that information and how will it improve water management? The Project will have monitoring equipment as part of the water filtration system. The state-of-the-art system will measure levels

of contamination of the water before and after treatment. Not only will the monitoring system ensure that the water is to standard levels after treatment, but it will also provide information on the quality of the water upon being pumped from the ground. This will give not only the City, but the OCWD valuable information on the quality of the water in the OC Basin as a whole. The data will also include total water use, groundwater elevation data and extraction data. Thorough this information, OCWD and the City can monitor the water quality of the basin.

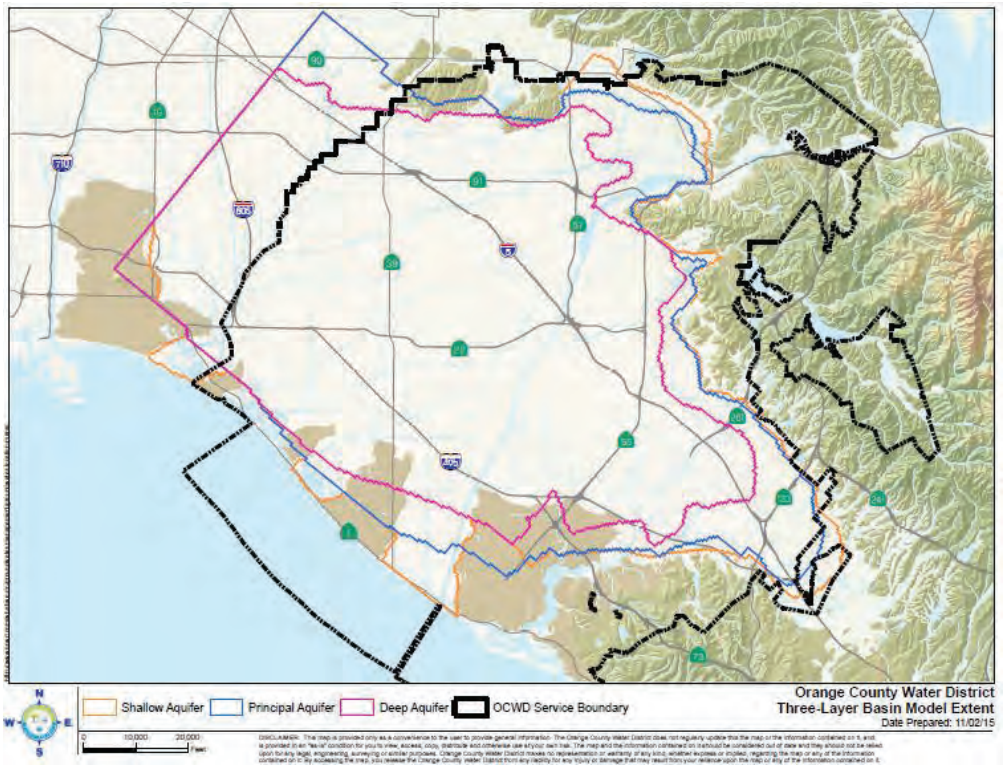
What is the estimated capacity of the new well s), and how was the estimate calculated? Well 38 has maximum capacity of 2,500 gpm. This is an actual production amount since Well 38 already exists but was taken offline due to PFAS contamination.

How much water do you plan to extract through the well s), and how does this fit within state or local laws, ordinances, or other groundwater governance structures applicable to the area? The City of Santa Ana plans to extract 4,000 AFY of water from Well 38. This amount of water is within the City's water rights set by OCWD for pumping from the OC Basin. It is also within the sustainable yield of the Basin.

Will the well be used as a primary supply or supplemental supply when there is a lack of surface supplies? Well 38 will be used a primary source of water and will amount to 12% of the City's total water supply.

Please provide information documenting that proposed well s) will not adversely impact the aquifer it/they are pumping from (overdraft or land subsidence). The OC Basin underlies the northerly half of Orange County beneath broad lowlands. The OC Basin, managed by OCWD, covers an area of ~ 350 square miles, bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest. The OC Basin boundary extends to the Orange County-Los Angeles Line to the northwest, where groundwater flows across the county line into the Central Groundwater Basin of Los Angeles County. A map of the OC Basin is shown in Figure 3. The total thickness of sedimentary rocks in the OC Basin is over 20,000 feet, with only the upper 2,000 to 4,000 feet containing fresh water.

Figure 3. Orange County Basin Map



The OC Basin's full volume is ~ 66 million AF. There are three major aquifer systems that have been subdivided by OCWD, the Shallow Aquifer System, the Principal Aquifer System, and the Deep Aquifer System. These three aquifer systems are hydraulically connected as groundwater is able to flow between each other through intervening aquitards or discontinuities in the aquitards. The Shallow Aquifer system occurs from the surface to ~ 250 feet below ground surface. Most of the groundwater from this aquifer system is pumped by small water systems for industrial and agricultural use. The Principal Aquifer system occurs at depths between 200 and 1,300 feet below ground surface. Over 90% of groundwater production is from wells that are screened within the Principal Aquifer system. Only a minor amount of groundwater is pumped from the Deep Aquifer system, which underlies the Principal Aquifer system and is up to 2,000 feet deep in the center of the OC Basin.

OCWD closely monitors conditions in the OC Basin to ensure that member agencies receive an adequate share of water while maintaining a sustainable yield from the Basin. In addition to natural recharge from precipitation, OCWD has a robust basin recharge system in place. Some of the system components include imported surface water recharge in wet years, recycled water recharge and in lieu programs. According to OCWD's 2019-2020 Engineer's Report on Water Conditions, groundwater stored in the basin increased by 36,000 AF for 2019-2020 water year.

Please describe the groundwater monitoring plan that will be undertaken and the associated monitoring triggers for mitigation actions. OCWD has a comprehensive groundwater monitoring system in place to ensure groundwater in the OC Basin remains a sustainable source of water in the face of recurring droughts for its member agencies. OCWD collects data from over 500 production and monitoring wells throughout the OC Basin. The data includes water level in the basin, as well as water quality information. The data is used to establish the pumping percentage for each of the member agencies, which OCWD announces every January and it applies to the upcoming fiscal year. OCWD develops a comprehensive Engineer's Report every year with detailed information on the conditions of the OC Basin. The 2019-20 Report is included as Appendix E.

The presence of PFAS was first documented in the OC Basin during the federal EPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) program, which required monitoring for 30 contaminants between 2013 and 2015. Since then, the OCWD, which manages the OC Basin, has been routinely sampling water from wells in the basin that led to identification of higher lever of contamination and taking the well out of production.

Describe how the mitigation actions will respond to or help avoid any significant adverse impacts to third parties that occur due to groundwater pumping. To support groundwater extraction and use, OCWD manages the groundwater production, water supply and basin utilization. The efforts undertaken by OCWD to ensure that the OC Basin is used in a responsible and sustainable manner are two-fold. OCWD has a robust system in place to recharge the basin from surface water, recycled water and in lieu programs. This system has been effective in maintaining the OC Basin as a reliable local source of water in the region. The recharging program resulted in a net increase of water storage last year and in previous years. Second, OCWD has a comprehensive monitoring network of the water in the OC Basin, which it uses to establish a pumping rate percentage each year in a way not to adversely impact the basin

or cause overdraft or subsidence. The pumping percentage for the current fiscal year is 77%. The percentage varies from year to year based on a host of factors as discussed in the Engineer's Report and ensures sustainable pumping.

In addition, since PFAS are highly water soluble and therefore very mobile in groundwater, the removal of this contaminant from the proposed well site will allow clean up and prevention of the groundwater basin contamination not only for the City residents but for over 2.5 million people within 19 cities and water agencies who utilize this basin as their drinking water source.

E.1.2. Evaluation Criterion B — Sustainability and Supplemental Benefits

1. Climate Change:

In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods? Climate change has brought on many natural hazards in addition to droughts. One of these hazards that has become very prevalent in California is wildfires. Wildfires require massive amounts of water to fight and control. The Project adds 4,000 AFY of water from a reliable, local source that may be needed in fighting wildfires, which typically occur in dry years when imported supplies are reduced.

Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as, but not limited to, reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water? Does this infrastructure complement other green solutions being implemented throughout the region or watershed? By implementing this project, City will have access to a reliable source of water in lieu of imported water. The energy savings from reduction of SWP and CRA imports is energy savings gained by the whole State.

Will the proposed project establish and use a renewable energy source? Not applicable.

Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution? The Project will reduce water pollution by implementing PFAS treatment at Well 38. The Project is expected to produce 4,000 AFY of potable water that was previously contaminated with water pollutants (PFAS .

Additionally, the increased sustainability of local groundwater for the City of Santa Ana will result in reduction of imported water deliveries from the Sierra Nevada region and Colorado River basin (sources of water for the SWP and CRA . Reducing imported water rates and keeping more water at the source, will assist with reduction in salinity, and reduced oxygen levels of those water sources thereby improving the water quality of the Sierra Nevada Mountain region and Colorado River basin.

Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation? Yes, the Project will reduce the impacts of the drought on the City and allow a more reasonable watering of landscape, trees and vegetation that will in turn reduce greenhouse gas emissions by sequestering carbon.

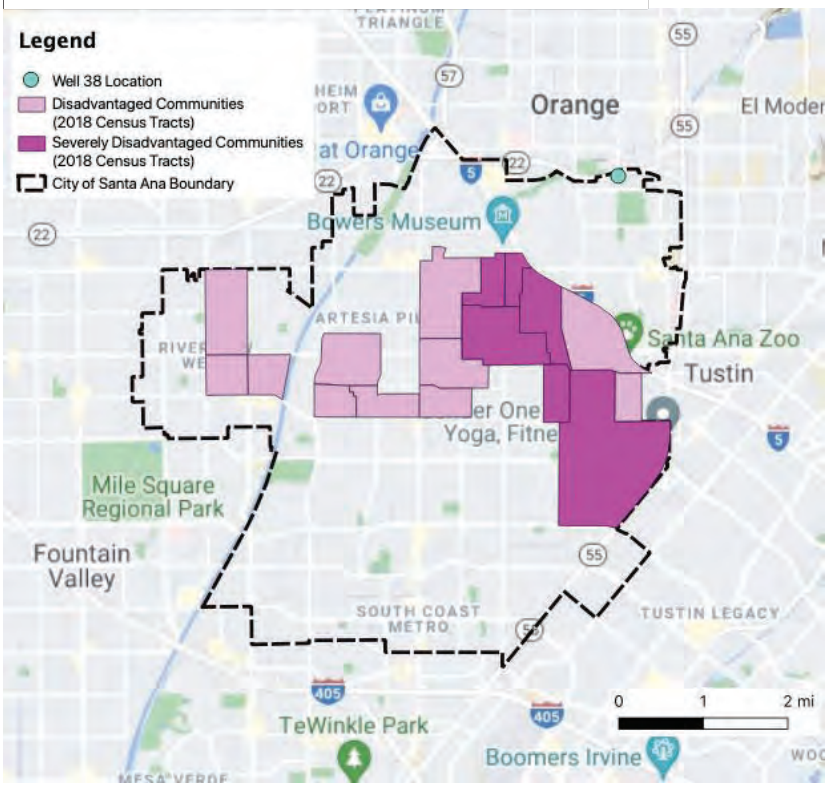
Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses? The Project will produce 4,000 AFY of water that is locally available. This amount of water directly translates into the same amount of water conserved from the SWP/CRA. The SWP receives its water from the Sierra Nevada Mountains, where the water confluences into the San Francisco Bay Delta (the Delta), which is a very ecologically sensitive habitat. Any water not diverted from the Delta contributes to the conservation of this resource and the ecosystems that depend on it.

Does the proposed project contribute to climate change resiliency in other ways not described above? With recurring droughts, it has become crucial to consider its effects on all aspects of life and the environment in local, regional and state planning. The City considers climate change in all of its planning efforts, as well as project implementation. The Project furthers the regional and state goals of long-term sustainability of water management in the face of climate change.

2. Disadvantaged or Underserved Communities:

Will the proposed project serve or benefit a disadvantaged or historically underserved community? The Well 38 Water Treatment Project will make available 4,000 AFY of locally produced water to the City. This water is a component of the overall City of Santa Ana water supply that serves the City as a whole. This reliable, sustainable and lower cost source of water provides a benefit to all of the City's residents and businesses.

Figure 4. Santa Ana DAC Map and Well 38 Project Location



Two methods were used to assess the Disadvantaged Communities (DAC) status of the City of Santa Ana. The first is in accordance with State of California guidelines, which define DAC as census geographies with an annual median household income (MHI) that is less than 80 percent of the Statewide annual MHI. The other group that is defined is Severely Disadvantaged Communities (SDAC), which are census geographies with an annual MHI that is less than 60 percent of the Statewide annual MHI. The map shown in Figure 4 is taken from a DAC mapping tool developed by the California Department of Water Resources and shows that the City of Santa Ana has multiple SDAC and DAC communities.

The second method used in the determination of DAC communities is in accordance with the Section 1015 of the Cooperative Watershed Act (cited in this grant program , which defines a DAC as a community with an annual MHI that is less than 100 percent of the statewide annual MHI for the state. Figure 5 below is from the U.S. Census Quick Facts webpage and shows the City of Santa's MHI at $66,145, well below the statewide MHI of $75,235. Therefore, the entire City of Santa Ana is a DAC.

Figure 5. MHI Information for Santa Ana and California

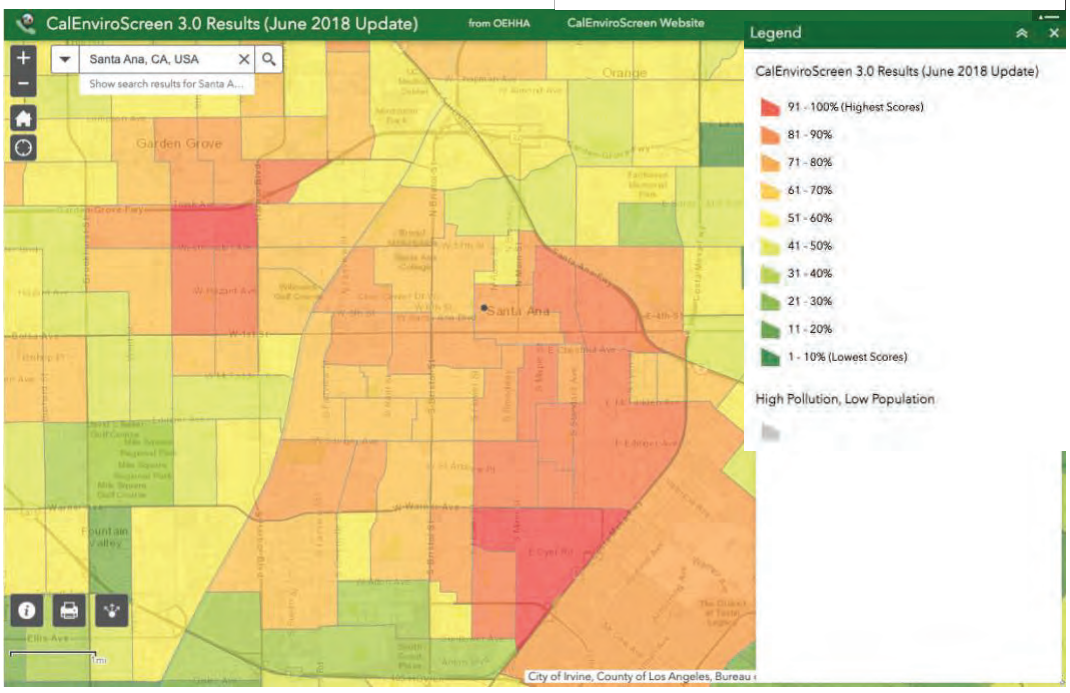
Income & Poverty	Santa Ana city, California	California	United States
Median household income (in 2019 dollars), 2015-2019	$66,145	$75,235	$62,843
PEOPLE			
Income & Poverty			
Median household income (in 2019 dollars), 2015-2019	$66,145	$75,235	$62,843
Per capita income in past 12 months (in 2019 dollars), 2015-2019	$20,867	$36,955	$34,103
Persons in poverty, percent	⚠ 15.7%	⚠ 11.8%	⚠ 11.4%

If the proposed project is providing benefits to a disadvantaged community, provide sufficient information to demonstrate that the community meets the applicable state criteria or meets the definition in Section 1015 of the Cooperative Watershed Act. Please see above.

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.

As mentioned previously, the City is home to many DACs and SDACs which have been identified by their MHI being below 80% of the State's MHI. In addition, the California Office of Environmental Health Hazard Assessment (OEHHA) provides DAC identification by assigning a score to each census tract in California ranging from 0-100 with 0 being the best communities to live in and the worst being scored 100. In order to map these tracts, OEHHA created the CalEnviroScreen 3.0 which scores each census tract based on social, economic, and environmental factors. The CalEnviroScreen Map for Santa Ana is shown in Figure 6. As shown in the map below, the majority of census tracts in the City scored 70% or higher with one tract being scored in the 91-100% range.

Figure 6. Santa Ana CalEnviroScreen 3.0 Map



3. Tribal Benefits:

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 through water quality improvements, new water supplies, or economic growth opportunities? There are no tribal communities living in the City of Santa Ana, however, the reduced dependence on SWP and CRA, will allow tribal communities along this water source, benefit from this water savings.

Does the proposed project support Reclamation's tribal trust responsibilities or a Reclamation activity with a Tribe? Not applicable.

4. Ecological Value:

Does the project seek to improve ecological climate change resiliency of a wetland, river, or stream to benefit to wildlife, fisheries, or habitats? Do these benefits support an endangered or threatened species? Water from the SWP originates in the Sierra Nevada Mountain snowpack, where it melts and eventually flows down into the Sacramento – San Joaquin River Delta. The Delta is a complex network of channels and reclaimed islands at the confluence of the Sacramento and San Joaquin Rivers. The SWP and the federal Central Valley Project (CVP use Delta channels to convey water to the southern Delta for diversion, making the Delta a focal point for water distribution throughout the state. The Delta is ecologically sensitive habitat, which is home to various species listed under the Federal and State Endangered Species Acts. The Project will produce 4,000 AFY of water, which directly offsets water imported through the SWP by the same amount. This, in turn, means 4,000 AFY less water diverted from the Delta, away from habitat that relies on this water for its survival.

What are the types and quantities of environmental benefits provided, such as the types of species and the numbers benefited, acreage of habitat improved, restored, or protected, or the amount of additional stream flow added? How were these benefits calculated? The Project will enable 4,000 AFY to remain in the Sacramento Delta, where species of flora and fauna rely on water to flourish. Therefore, the Project will provide a significant benefit to this ecologically sensitive habitat. Some of the endangered species in the Delta include the Delta Smelt, Chinook Salmon and Sacramento Splittail.

Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status? The Project has a small amount of contribution to the health of the Sacramento Delta habitat with the amount of water that the Project saves from being diverted away. However, supporting projects such as this project, which use local sustainable water and reduce diverting water away from the Delta will, in aggregate, result in substantial benefits to the survival and recovery of endangered species. Many of the endangered species need higher volumes of water and lower temperatures to survive. Any incremental increase of water helps provide these necessary conditions for the endangered species.

5. Other Benefits:

Will the project assist States and water users in complying with interstate compacts? Not applicable.

Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others ? The City of Santa Ana has a population of ~ 335,000 people that reside within its service area. The service area includes commercial, industrial, institutional, recreational and agricultural customers with an overall total of over 45,000 connections. The Project will provide for a reliable and sustainable source of locally produced water that will benefit all these uses by ensuring water is available, especially during droughts. Local groundwater is also produced at a lower cost than imported SWP water. The difference in cost between pumped and import water is at least $570 per AF, which benefits the various users of the water in the City.

Will the project benefit a larger initiative to address sustainability of water supplies? The State of California has been planning for drought resiliency for many years. The latest initiative is Executive Order Number N-10-19 issued by Governor Gavin Newsom. Specifically, the initiative aims to develop resiliency to droughts and manage the state's water resources in a sustainable manner into the future. The action plan that builds upon the Governor's Executive Order is the California Water Resilience Portfolio dated July 2020. The Portfolio establishes policies and objectives to prepare the state for a water secure future. Three of the four objectives of the Portfolio are: 1) Maintain and diversify water supplies; 2) Protect and enhance natural ecosystems; and 3) Be prepared. The Project gives a reliable source of water to the City of Santa Ana, adding a substantial proportion of water to the City's supply. Therefore, the Project contributes to all three of the above objectives, furthering this larger initiative. In addition, removal of the contaminants clarifies the basin and protect water resources further downstream.

E.1.3. Evaluation Criterion C — Drought Planning and Preparedness

Attach a copy of the applicable drought plan, or sections of the plan, as an appendix to your application. These pages will not be included in the total page count for the application. See Appendix F for the City of Santa Ana's 2020 Water Shortage Contingency Plan (WSCP .

Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to prepare for and address drought will receive more points under this criterion. Explain whether the drought plan was developed with input from multiple stakeholders. The 2020 UWMP is the result of the latest comprehensive planning efforts carried out by the City of Santa Ana. The 2020 UWMP is a detailed document that evaluates water resources for the next 30 years. The Plan's projections for water supply and demand center around anticipated future droughts as evidenced by the recent change in climate patterns. The UWMP is supplemented by the City of Santa Ana's 2020 WSCP, which outlines a specific response to droughts. The WSCP details water shortage action planning as it provides real-time water supply availability assessment and structured steps designed to respond to actual conditions. This level of detailed planning and preparation will help maintain reliable supplies and reduce the impacts of interruptions. The WSCP also takes into account catastrophic events such as earthquakes.

The WSCP identifies six distinct stages of water shortage levels and bases concrete steps for implementation to respond to each stage on adequate details of demand reduction and supply augmentation measures that are structured to match varying degrees of shortages. The WSCP provides the steps and water shortage response actions to be taken in times of water shortage conditions. The WSCP has prescriptive elements, such as an analysis of water supply reliability;

the water shortage response actions for each of the six standard water shortage levels that correspond to water shortage percentages ranging from 10% to greater than 50%; an estimate of potential to close supply gaps for each measure; protocols and procedures to communicate identified actions for any current or predicted water shortage conditions; procedures for an annual assessment; monitoring and reporting requirements to determine customer compliance; and reevaluation and improvement procedures for evaluating the WSCP.

The City, as a retail water supplier, coordinated the UWMP and WSCP preparation efforts with other key entities, including MWD, Municipal Water District of Orange County (MWDOC, regional wholesale supplier for Orange County), and OCWD (OC Basin manager and provider of recycled water in northern Orange County). The development of the plans also consulted multiple planning documents issued by the other water partners.

Does the drought plan include consideration of climate change impacts to water resources or drought? Yes. The WSCP is a strategic planning process that the City engages in to prepare for and respond to water shortages. This document considers the effects of climate change in its assessment of the availability of future water resources. The analysis draws from the UWMP, which considers the latest available science and modeling in the variability of weather and long-term impacts of climate change. The WSCP provides a Drought Risk Assessment DRA that evaluates the City's near term ability to supply water assuming the City is experiencing a drought over the next five years. In addition, the City's WSCP provides real-time water supply availability assessment and structured steps designed to respond to actual conditions.

Describe how your proposed drought resiliency project is supported by and existing drought plan. WSCP considers reducing City's reliance on imported water supplies by increasing the use of local groundwater and recycled water supplies as a necessary means of meeting the goal. Well 38 had been in operation for years prior to taking it offline as a result of PFAS contamination. The water that the well produces is local and is considered a sustainable source in the face of ever increasing drought conditions. Therefore, the supply from this well has been included as an integral part of the City's groundwater resource plan in response to droughts.

Well 38 is also cited specifically in OCWD's Producer Report as a priority project for contamination treatment. As such, the City of Santa developed the Basis of Design Technical Memorandum (Appendix C) to select the best alternative for treating the water from the well and determining the technical details of the Project.

Does the drought plan identify the proposed project as a potential mitigation or response action? Yes, the 2020 WSCP considers the various future scenarios for water shortage and how to respond to them with the most reliable sources of water. WSCP discusses the impact of PFAS to the groundwater system being of particular concern since the summer of 2019 and since DDW has lowered the threshold through its Response Levels (RL) in February 2020. ~ 45 wells in the OCWD service area have been temporarily turned off until treatment systems can be constructed. As the basin manager, OCWD is taking a proactive approach in returning the Well 38 back to production. Well 38 had been in operation for years and its water is considered in both the UWMP and the WSCP as part of the supply to respond to droughts.

Does the proposed project implement a goal or need identified drought plan? The Project makes water from the currently offline Well 38 available in the amount of 4,000 AFY. Groundwater is considered a reliable and sustainable source of water in both the UWMP and the WCSP and as key to responding to droughts when the SWP/CRA surface water is at its lowest and it is not known how much of it would be available. Therefore, the Project constitutes a crucial part of drought resiliency and response and forms an important part of the water need identified in the City's plans to be able to appropriately respond to droughts.

Describe how the proposed project is prioritized in the referenced drought plan? Being the most reliable source, groundwater composes the largest share of the water supply in the action plan. Water produced from Well 38 is a component of the groundwater supply.

E.1.4. Evaluation Criterion D — Severity of Actual or Potential Drought Impacts to be addressed by the Project

Describe the severity of the impacts that will be addressed by the project:

What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation and tourism, forestry), and how severe are those impacts? According to the U.S. Drought Monitor, Orange County is currently experiencing a Category D2 – Severe Drought. The current drought is gripping all of California with many parts designated at the highest level of Category D4 – Exceptional Drought, including the Sierra Nevada region where 30% of the state's water supplies originate. The last drought in the state was only a few years ago and took place between 2012 and 2017. Water forms the basis for many aspects of life such as drinking, cooking, hygiene, irrigation for agriculture, industry and many other functions.

During the most recent drought, 2014 was one of the driest time periods on record, where Category D4 drought conditions affected 58% of California land. California is currently going through an abnormally dry period. Temperatures in various part of the state have been at least 15 degrees above average since June 2020.

The recent severe drought in California has put tremendous pressure on the state's water allocation systems and shown that they are simply not capable of adapting to a sustained drought cycle. Statewide droughts have severely impacted both local water supplies as well as imported supplies from the Colorado River and northern California, from which the City of Santa Ana currently relies on for 23 percent of its water supply.

The California drought has had a devastating impact on all aspects of the state. The **economic** impact of the drought to agriculture in California was an estimated **$2.7 billion and 21,000 total job losses in 2015 alone**. The loss of **hydropower** between October 2011 and October 2014 cost Californians **$1.4 billion**, as hydropower in the state was roughly cut in half. This lost hydropower was made up with the purchase and combustion of additional natural gas. The electricity ratepayers spent an additional $1.7 billion to purchase natural gas over the drought period, which resulted in an additional **13 million tons of CO2 emitted into the air** — about a 10 percent increase in total annual CO2 emissions from California power plants, thus having a detrimental impact on the state's air quality.

The California drought severely affected **forestry and the wildlife** that inhabit that environment. Of the 85 million acres in California classified as wildlands, nearly 17 million are commercial forest land, approximately half of which are owned by the government. New research using high-tech tools to measure the moisture in trees found that 120 million trees across nearly every part of California are at risk of dying. The California Department of Forestry and Fire Protection (CAL FIRE), reported **29 million confirmed dead trees**. Governor Jerry Brown had issued a state of emergency in California because trees are dying, creating more fuel for wildfires. CAL FIRE has determined that trees and vegetation play an important role in the vitality of California urban communities, affecting **property values, energy consumption, air quality, noise pollution, and wildlife**.

The drought has severely impacted the City of Santa Ana's imported water supplies from the SWP. Drought resiliency for the City can be best provided by becoming less reliant upon imported water. By increasing its groundwater pumping capacity, the Project will substantially contribute to the goal of water supply reliability and sustainability. Without the Well 38 Water Treatment Project, the City of Santa Ana will continue to contribute to the demands on the limited and vulnerable supply of imported water that has already been severely compromised.

Whether there are public health concerns or social concerns associated with current or potential drought conditions (e.g., water quality concerns including past or potential violations of drinking water standards, increased risk of wildfire, or past or potential shortages of drinking water supplies? Does the community have another water source available to them if their water service is interrupted?). According to the Centers for Disease Control and Prevention (CDC), severe drought conditions can negatively affect **air quality**. During droughts, there is an increased risk for wildfires and dust storms. Particulate matter suspended in the air from these events can irritate the bronchial passages and lungs. This can make chronic respiratory illnesses worse and increase the risk for respiratory infections like bronchitis and pneumonia. Some drought-related health effects are experienced in the short-term and can be directly observed and measured. However, the slow rise or chronic nature of drought can result in longer term, indirect health implications that are not always easy to anticipate or monitor.

The public health and social concerns associated with drought conditions include the following: 1) Compromised quantity and quality of drinking water, 2) Increased recreational risks, 3) Effects on air quality, 4) Diminished living conditions related to energy, air quality, and sanitation and hygiene, 5) Compromised food and nutrition, and 6) Increased incidence of illness and disease.

The water supply from the SWP/CRA is the most vulnerable because of the high demand and the ongoing drought and the potential for more severe and recurring droughts brought on by climate change. Local supply of groundwater that is reliable and sustainable provides the best alternative in case water supplies from the SWP/CRA are interrupted, which the Project helps to achieve.

Whether there are ongoing or potential environmental impacts (e.g., impacts to endangered, threatened or candidate species or habitat). As detailed under Evaluation Criterion E.1.2 above, the Sacramento – San Joaquin River Delta, where SWP water is diverted for human use, is a very

complex and ecologically sensitive habitat for several endangered species. Reduction of reliance on SWP water during droughts directly benefits the endangered species in the Delta.

Whether there are local or economic losses associated with current drought conditions that are ongoing, occurred in the past, or could occur in the future (e.g., business, agriculture, reduced real estate values . In 2015, the drought in California cost the state s economy **$2.7 billion and nearly 21,000 jobs** according to a study from the University of California-Davis. During the recent drought, the state issued mandatory water restrictions. The water rationing measures imposed by the state ironically made the per-unit cost of water higher since the "fixed costs" of the pipes and pumps did not change, but the amount of water sold went down. In order for water districts to recover their costs, they needed to charge the ratepayers more per unit for water.

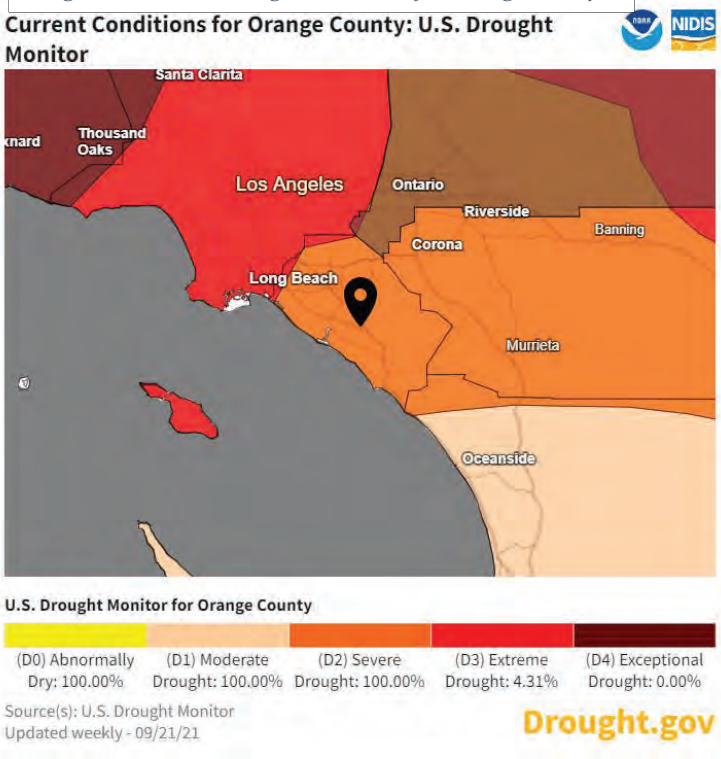
The City of Santa Ana is home to several industries and manufacturing companies in addition to many small businesses. These industries and businesses rely on the water supply to manage their businesses and provide their services. An interruption of the water supply has a substantial impact on these industries that in turn maintain the economic growth in the City.

Whether there are other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict . Water is a precious commodity in naturally semi-arid southern California. Over the past 100 years, the "Lower Basin" states of the Colorado River Compact (which include Nevada, Arizona, and California) have long battled over water rights to the Colorado River. A prime example of these tensions were the conflicts between the city of Los Angeles and the farmers and ranchers in the Owens Valley of Eastern California. Since 1913, the Owens River had been diverted to Los Angeles, causing a severe decline in the valley s economy. So much water was being diverted from the Owens Valley that the farmers tried to destroy the aqueduct in 1924. Tensions continued, and as late as 1979, they sued the Los Angeles Department of Water and Power (LADWP over its excessive water diversion from Mono Lake. As water becomes more scarce tensions such as these are expected to escalate. Currently several agencies in Central Valley have started a lawsuit against the SWRCB for curtailment of surface water.

During drought times, when the water supply from the SWP and the Colorado River is at its lowest, agencies that do not have sufficient locally produced, sustainable water are likely to experience tensions and potential conflict amongst them. The City of Santa Ana's planning for alternative water sources aims to reduce or eliminate such tensions and conflicts over water and the Project is a substantial part of the solution.

Describe existing or potential drought conditions in the project area. Is the project in an area that is currently suffering from drought or which has recently suffered from drought? According to the U.S. Drought Monitor, Orange County, where the City of Santa Ana is located, is currently experiencing a Category D2 – Severe Drought status. Please see Figure 7 below. The current drought began in January 2020 with a low precipitation rainy season and worsened over the past couple of years to the current most severe designation.

Figure 7. Current Drought Conditions for Orange County



In addition to the current drought, the last drought was only a few years ago between 2012 and 2017. The years 2012 to 2015 marked the driest four-year period in 120 years of historical records, along with historic high temperatures (California Department of Water Resources, 2015). Additionally, between 1976 and 2016, California's population has almost doubled, from 22 million to 40 million, increasing pressure and demand on limited existing resources.

The U.S. Drought Monitor (www.drought.gov) indicates that the longest duration of drought (D1-D4) in California (since 2000) lasted 376 weeks beginning on December 27, 2011 and ending on March 5, 2019. The most intense period of drought was in July 2014 where D4 status affected 58% of California land. California is currently going through an abnormally dry period. Temperatures in various part of the state have been at least 15 degrees above average temperature in June 2020. Also, the northern part of the state is still experiencing various degrees of drought condition that will have an impact on the state water resources as a whole.

Currently, the entire Western United States is in one of the categories of drought. Approximately 46% of California is in the Exceptional Drought condition. Therefore, water sustainability projects like the Well 38 Water Treatment Project are critical to ensure an uninterrupted water supply.

Describe any projected increases to the severity or duration of drought in the project area resulting from changes to water supply availability and climate change. The California 2020 Water Resilience Portfolio that was published on July 28, 2020 predicts that the livelihood in our state is increasingly at risk as California confronts more extreme droughts and floods, rising temperatures, overdrafted groundwater basins, aging infrastructure and other challenges magnified by climate change. For some of California's most vulnerable populations, the risks are particularly acute.

According to the Intergovernmental Panel on Climate Change (IPCC), the warming of the climate system is unequivocal. The period from 1983 to 2012 was likely the warmest 30-year period of the last 1400 years in the Northern Hemisphere (IPCC, 2014). California's temperature record parallels global temperature trends.

The NOAA Climate Divisional Dataset is a long-term dataset used to generate historical (1895-2016) climate analyses for the contiguous United States. In the most recent report covering

California, within Climate Division 2 (Sacramento Drainage), the long-term record depicts a dramatic shift in annual average temperature. The data points from the 21st century indicate an overall shift in climate compared to the historical record. Data from NOAA Climate Divisional Dataset, Division 6 (South Coast Drainage, including the City of Santa Ana) depicts even more annual precipitation variation from 5 to 40 inches per calendar year. The past 15 years since the turn of the century are also extremely warm and dry, indicating a change in climate. The three years (2014-2017) are depicted as being some of the warmest and driest years on record, with the warmest on record occurring in 2015, and the second warmest in 2016.

E.1.5. Evaluation Criterion E — Project Implementation

Describe the implementation plan of the proposed project. A Basis of Design Technical Memo has been completed for the project (Appendix C). The memo contains preliminary Project design plans. A design contract managed by OCWD has been issued and the Project is currently in final design. The construction of the Project is targeted to begin upon entering into a financial assistance agreement.

Table 3. Project Schedule

Estimated Project Schedule			
No.	Task/Milestone	Start Date	Completion Date
1	Plans, Specifications and Estimate	In Progress	March 2022
2	NEPA & CEQA Environmental Documentation	In Progress	March 2022
3	Project Permits	January 2022	June 2022
4	Procure Construction Contract	July 2022	September 2022
5	Construction	October 2022	October 2023

Describe any permits that will be required, along with the process for obtaining such permits. All proposed work shall comply with all local, state, and federal requirements. The anticipated permits and approvals include the following:

Table 4. Project Permits

Anticipated Permits	Process for Approval or Issuance
Public Works approval of plans and specifications	Plans and Specifications to be reviewed by City engineering staff and approved by the Director of Public Works/City Engineer
City of Santa Ana Building Department to issue appropriate building permits	Plans and Specifications to be reviewed and approved by City Building Dept. staff and issue appropriate building permits
City's public bid process for lowest responsible bidder	Compliance with State of California Public Contracts Code
State of California Department of Public Health approvals for acceptable drinking water standards	Water Quality reports will be submitted for review and approval
Southern California Edison (SCE permit for electrical service	City to apply for issuance by SCE.
State Water Resources Control Board approval for storm water and test pumping discharge	City to apply for issuance by SWRCB.

Orange County Flood Control District permit for any work in County right-of way	City/contractor to apply for issuance by Orange County Flood Control District.

Identify and describe any engineering or design work performed specifically in support of the proposed project. A Technical Memorandum containing preliminary Project design plans has been completed for the Project (Appendix C). The memo contains preliminary Project design plans. A design contract managed by OCWD has been issued and the Project is currently in final engineering design.

Describe any new policies or administrative actions required to implement the project. There are no new polices or policy amendments that need to take place to implement the Project. On the administrative side, the above indicated permits need to be issued. In addition, the City of Santa Ana City Council will take formal action to award a construction contract to the lowest, responsible and responsive bidder.

E.1.6. Evaluation Criterion F — Nexus to Reclamation

Does the applicant have a water service, repayment, or O&M contract with Reclamation? No.

If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means? The City of Santa Ana receives 23% of its water through Metropolitan Water District of Southern California, which is a designated Reclamation contractor for the Colorado River and the SWP. The Project will produce 4,000 AFY of local water, which will offset demand from the Colorado River and SWP/CRA by the same amount. The Bureau of Reclamation has general oversight over water resources in the Delta including coordinated operations with the SWP. In 1986, the California Department of Water Resources and Reclamation signed the Coordinated Operation Agreement (COA) for management of the Central Valley Project and the SWP. The agreement was amended in December 2018 to update operational criteria for the projects.

Will the proposed work benefit a Reclamation project area or activity? The Project will benefit Reclamation by reducing reliance on surface water from the Colorado River and the SWP.

Is the applicant a Tribe? No.

SECTION 2: PROJECT BUDGET

Standard Form 424C Budget Information

Submitted separately with all other relevant SF-424 forms.

A. Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.

The City of Santa Ana has allocated the matching funds required for the Project to be carried to completion. The sources of the cost share are from the City's Water Enterprise Fund.

As shown by the City of Santa Ana City Council resolution, the City is committed to providing the remaining matching fund to complete the Project effective immediately.

Commitment letters from third-party funding sources should be submitted with your application. If commitment letters are not available at the time of the application submission, please provide a timeline for submission of all commitment letters. Cost-share funding from sources outside the applicant's organization (e.g., loans or State grants , should be secured and available to the applicant prior to award.

The City of Santa Ana will be providing the matching funding from its own budget. Therefore, no third party funding is included.

Table 5. Total Project Cost

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$689,868
Costs to be paid by the applicant	$689,869
Value of third-party contributions	
Totals	**$1,379,737**

Table 6. Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT	%
Non-Federal Entities		
City of Santa Ana	$689,869	50%
Non-Federal Subtotal	**$689,869**	**50%**
Other Federal Entities		
None	N/A	-
Other Federal Subtotal	N/A	-
REQUESTED RECLAMATION FUNDING	**$689,868**	**50%**

In addition, please identify whether the budget proposal includes any project costs that have been or may be incurred prior to award.

The City of Santa is not requesting any costs that were expended prior to award.

B. Budget Proposal

Table 7. Project Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		QUANTITY TYPE	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				**$ 14,450**
Project Manager	$ 69.47	208	Hours	$ 14,450
Fringe Benefits				**$ 6,633**
Project Manager	$ 31.89	208	Hours	$ 6,633
Travel				**$ -**
N/A				
Equipment				**$ -**
N/A				
Supplies/Materials				**$ -**
N/A				
Contractual/Construction				**$ 1,357,654**
Construction				
SWPPP (Allowance)	$ 7,500	1	LS	$ 7,500
Traffic Control & Safety Measures	$ 2,000	1	LS	$ 2,000
Removals	$ 15,500	1	LS	$ 15,500
Grading and Site Works	$ 5,200	1	LS	$ 5,200
Concrete Flat Works	$ 62,000	1	LS	$ 62,000
Yard Piping	$ 258,600	1	LS	$ 258,600
Process Equipment	$ 235,500	1	LS	$ 235,500
Electrical & Instrumentation/Controls	$ 117,400	1	LS	$ 117,400
Contract Allowance & Contingent Bid Items	$ 7,040	1	LS	$ 7,040
Startup/Commission/Owner Training	$ 5,330	1	LS	$ 5,330
Direct Costs Allowances	$ 35,800	1	LS	$ 35,800
Contractor Markups/Indirect Costs	$ 215,120	1	LS	$ 215,120
Contingency (30%)	$ 290,097	1	LS	$ 290,097
Construction Management (8%)	$ 100,567	1	LS	$ 100,567
Environmental				**$ 1,000**
BOR Environmental Review	$ 1,000	1	LS	$ 1,000
Other				$ -
N/A				$ -
TOTAL DIRECT COSTS				**$ 1,379,737**
Indirect Costs				**$ -**
N/A				$ -
TOTAL ESTIMATED PROJECT COSTS				**$ 1,379,737**

C. Budget Narrative

Salaries and Wages & Fringe Benefits
The City of Santa will assign a Project Manager for the Project. The Project Manager will oversee the project design and construction until completion. They will be assisted with support from the City's construction management team including a supervisor, inspector and clerical staff. Their hourly wage is $69.47/hour and fringe benefit is $31.89/hour. It is assumed that the Project Manager will work on this project 2 hours per week for the 26 month duration of the Project.

Travel
Not applicable.

Equipment
Equipment for the Project will be part of the construction contract.

Materials and Supplies
Similar to above, materials and supplies for the Project will be part of the construction contract.

Contractual/Construction

Construction Contractor
Through a competitive bid process in compliance with all applicable state and federal requirements, a qualified Contractor will be selected to construct the Project. The construction contract will include all relevant equipment, supplies and materials, construction, labor, and management needed to construct the project (as detailed in Table 7).

Third-Party In-Kind Contributions
Not applicable.

Environmental and Regulatory Compliance Costs
The cost to prepare the environmental documents will be part of the design component of the Project. All costs that will be incurred in acquiring permits and any required mitigation measures will be borne by the contractor as shown in Table 7 above.

Other Expenses
All Project costs are captured in Table 7 above.

Indirect Costs
None.

Total Costs
The total cost of the Project is $1,379,737. The federal cost share amount is $689,868 (about 50%) and the non-federal cost share amount is $689,869 (about 50%).

SECTION 3: ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

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.

The Project is not expected to impact the surrounding environment other than dust and noise during construction. The construction contractor will be required to follow mitigation measures determined in the environmental document to reduce impact to the community to less than significant.

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?

There are no known species listed as a Federal threatened or endangered species in the Project area. The anticipated Mitigated Negative Declaration MND) for the Project will require adherence to certain mitigation measures such as construction outside the breeding season or conducting a bird survey that will be adhered to.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.

There are no wetlands or other surface waters inside the project boundaries.

When was the water delivery system constructed?

The majority of the City's water delivery system was constructed in the mid 1900's.

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 Project will not result in any modification of individual features of an irrigation system.

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.

There are no buildings, structures, or features in the Project area that are listed or eligible for listing on the National Register of Historic Places within this project area.

Are there any known archeological sites in the proposed project area?

There are no known archeological sites in the Project area.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?
The Project will not have a negative or adverse effect on low income or minority populations.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?
The Project will not have any impacts on sacred sites or tribal lands.

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 contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

SECTION 4: 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. Note that improvements to Federal facilities that are implemented through any project awarded funding through this NOFO must comply with additional requirements. The Federal government will continue to hold title to the Federal facility and any improvement that is integral to the existing operations of that facility. Please see P.L. 111-11, Section 9504(a)(3)(D). Reclamation may also require additional reviews and approvals prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR Section 429, and that the development will not impact or impair project operations or efficiency.

All proposed work shall comply with all local, state, and federal requirements. The anticipated permits and approvals include the following:

Anticipated Permits	Process for Approval or Issuance
Public Works approval of plans and specifications	Plans and Specifications to be reviewed by City engineering staff and approved by the Director of Public Works/City Engineer
City of Santa Ana Building Department to issue appropriate building permits	Plans and Specifications to be reviewed and approved by City Building Dept. staff and issue appropriate building permits
City's public bid process for lowest responsible bidder	Compliance with State of California Public Contracts Code
State of California Department of Public Health approvals for acceptable drinking water standards	Water Quality reports will be submitted for review and approval
Southern California Edison (SCE) permit for electrical service	City to apply for issuance by SCE.
State Water Resources Control Board approval for storm water and test pumping discharge	City to apply for issuance by SWRCB.
Orange County Flood Control District permit for any work in County right-of way	City/contractor to apply for issuance by Orange County Flood Control District.

SECTION 5: EXISTING DROUGHT CONTINGENCY PLAN

The City of Santa Ana's 2020 Water Shortage Contingency Plan (WSCP is attached as Appendix F.

SECTION 6: LETTERS OF SUPPORT

Please refer to Appendix A for Letters of Support

APPENDICES

Appendix A: Letters of Support
Appendix B: OCWD PFAS Treatment Systems Planning Study: Producer Report
Appendix C: Basis of Design Technical Memorandum
Appendix D: City of Santa Ana 2020 Urban Water Management Plan
Appendix E: OCWD 2019-2020 Engineer's Report
Appendix F: City of Santa Ana 2020 Water Shortage Contingency Plan

APPENDIX A: LETTERS OF SUPPORT

CITY OF SANTA ANA

October 4, 2021

U.S. Bureau of Reclamation
Attn: Ms. Sheri Looper
Mail Code: MP-400
2800 Cottage Way
Sacramento, CA 95825

RE: Letter of Support for the City of Santa Ana's Well 38 Water Treatment Project Application

Dear Ms. Looper:

As Mayor of the City of Santa Ana, I am writing in strong support of the City's grant application for the FY 2022 Drought Resiliency Projects for the Well 38 Water Treatment Project.

As Orange County's second largest city located in the third most populated county in California, the City of Santa Ana covers 27.5 square miles and is home to approximately 335,000 residents. Ensuring that all residents and businesses of the City of Santa Ana have access to a reliable, efficient, and quality water supply infrastructure is one of our top priorities. The funding opportunity provided by the Bureau of Reclamation to increase drought resiliency measures is in direct alignment with our City's goals and our Water Division's objectives. Submittal of the application for the Well 38 Water Treatment Project by our Water Division demonstrates our commitment to providing the City of Santa Ana with a safe and sustainable water supply by investing in water supply infrastructure.

On behalf of the City of Santa Ana, please accept this letter of strong support for the Well 38 Water Treatment Project and the continuing efforts of our City's Water Division.

Sincerely,

Vicente Sarmiento
Mayor

CITY ATTORNEY
Sonia R. Carvalho

CITY MANAGER
Kristine Ridge

CLERK OF THE COUNCIL
Daisy Gomez

20 CIVIC CENTER PLAZA - P.O. BOX 1988, M31 - SANTA ANA, CALIFORNIA 92702
TELEPHONE (714) 647-6900 - FAX 714) 647-6954 - www.santa-ana.org

October 1, 2021

U.S. Bureau of Reclamation
Attn: Ms. Sheri Looper
Mail Code: MP-400
2800 Cottage Way
Sacramento, CA 95825

RE: Letter of Support for the City of Santa Ana's Well 38 Water Treatment Project Application

Dear Ms. Looper,

This letter is to express our strong support for the City of Santa Ana's grant application for the Bureau of Reclamation's FY 2022 WaterSMART Drought Response Program to construct the Well 38 Water Treatment Project.

The Orange County Water District (OCWD) manages the Orange County Groundwater Basin (OC Basin), the local groundwater basin in the northern half of Orange County, California. The City of Santa Ana is one of 19 cities and retail water districts served by the OC Basin, which provides approximately 75% of water needs for these agencies. Based on Santa Ana's current demand, 75% equates to about 25,000 acre-feet per year of groundwater pumping.

However, due to the State of California regulations regarding PFAS substances in water supplies, the City has been unable to meet the share of its customers' potable water needs from the local water basin, increasing its reliance on imported water. The ability to increase access to the local water supply is extremely significant to the region, as we continue to build long-term resilience to drought by reducing our dependence on increasingly-impacted imported water supplies. The benefits of implementing the Well 38 Water Treatment Project include the following:

- Providing a more drought resilient water supply alternative
- Providing a more economical water supply alternative
- Increasing the City's pumping capacity by bringing back an additional groundwater source
- Allowing the City to better distribute pumped groundwater throughout the municipal system

PO Box 8300
Fountain Valley, CA 92728-8300
18700 Ward Street
Fountain Valley, CA 92708
(714) 378-3200
(714) 378-3373 fax
www.ocwd.com

- Improving water quality by removing/reducing PFAS contaminants in the groundwater basin

OCWD recognizes the importance of retail agencies such as the City of Santa Ana increasing the reliability of stressed water supplies, particularly as changes in climate continue to impact rainfall in the southern California region.

We truly appreciate your support of this grant application.

Sincerely,

Michael R. Markus, P.E., D.WRE, BCEE, F.ASCE
General Manager

MWDOC

Street Address:
18700 Ward Street
Fountain Valley, California 92708

Mailing Address:
P.O. Box 20895
Fountain Valley, CA 92728-0895

(714) 963-3058
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Sat Tamaribuchi
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Director

Al Nederhood
Director

Karl W. Seckel, P.E.
Director

Jeffery M. Thomas
Director

Robert J. Hunter
General Manager

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Serrano Water District
South Coast Water District
Trabuco Canyon Water District
City of Tustin
City of Westminster
Yorba Linda Water District

October 1, 2021

U.S. Bureau of Reclamation
Attn: Ms. Sheri Looper
Mail Code: MP-400
2800 Cottage Way
Sacramento, CA 95825

RE: Letter of Support for the City of Santa Ana's Well 38 Water Treatment Project Application

Dear Ms. Looper,

The Municipal Water District of Orange County (MWDOC) is in strong support of the City of Santa Ana's grant application for the Bureau of Reclamation's FY 2022 WaterSMART Drought Response Program to construct the Well 38 Water Treatment Project.

The City of Santa Ana is located in a dense urban area with a city population of approximately 335,000 residents. The arid climate and recurring droughts in the Southern California region can result in challenges for the City to consistently meet the water demands of their customers. Finding additional sustainable water sources to meet the region's needs and alleviate the burden on other resources is critical for the water system infrastructure.

The City of Sana Ana's Well 38 Water Treatment Project is the type of project that supports the region's goals of creating resiliency to drought conditions by having the adequate infrastructure in place to meet demands under all conditions. Given the recent recurring droughts, reestablishing wells in the City of Santa Ana would reduce the demand for other limited water supplies which serve the region.

The City of Santa Ana, along with MWDOC, are both part of Metropolitan Water District's (MWD) 26 public member agencies. We encourage your award of the City of Santa Ana's proposal and the local and regional benefits it offers, which will reduce the City of Santa Ana's dependence on imported MWD water, thereby supporting water supply reliability. MWDOC recognizes the great importance of the Bureau of Reclamation's grant programs such as the Drought Response Program and appreciates your consideration of this critical project.

Sincerely,

Robert J. Hunter
General Manager

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

APPENDIX B: OCWD PFAS TREATMENT SYSTEMS PLANNING STUDY: PRODUCER REPORT

Please see Attachment 2 in the "Attachments" section of this grants.gov submittal.

APPENDIX C: BASIS OF DESIGN TECHNICAL MEMORANDUM

Please see Attachment 3 in the "Attachments" section of this grants.gov submittal.

APPENDIX D: CITY OF SANTA ANA 2020 URBAN WATER MANAGEMENT PLAN

Please see Attachment 4 in the "Attachments" section of this grants.gov submittal.

APPENDIX E: OCWD 2019-2020 ENGINEER'S REPORT

Please see Attachment 5 in the "Attachments" section of this grants.gov submittal.

APPENDIX F: CITY OF SANTA ANA 2020 WATER SHORTAGE CONTINGENCY PLAN

Please see Attachment 6 in the "Attachments" section of this grants.gov submittal.