March 27, 2019

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City of Fullerton – Well 7A Construction Project

Reclamation
WaterSMART Drought Response Program:
Drought Resiliency Projects Fiscal Year 2019
FOA BOR-DO-19-F003

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TECHNICAL PROPOSAL & EVALUATION CRITERIA

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(1) Executive Summary

Date: March 27, 2019
Applicant Name: City of Fullerton
City, County, State: Fullerton, Orange County, California
Project Name: City of Fullerton – Well 7A Construction Project

Project Summary. The City of Fullerton (City) requests $300,000 toward the drilling and construction of a new potable municipal water well with high capacity pumps, motors, discharge piping, disinfection facilities, and electrical equipment. **The proposed project is estimated to produce an average 4,850-acre feet per year (AFY) of potable water, or 242,500 AF (acre feet) over the 50-year life of the well.** The new well, known as Well 7A, will produce approximately 17% of the City's annual average demand of 26,200 AFY. The proposed project will supplement local drinking water supplies and replace a non-operating well with known contaminants. The goals of this project are to: 1) increase the reliability of local water supplies; 2) achieve optimization in the City's water system; 3) mitigate impacts caused by drought; and 4) build trust with residents by taking this proactive approach. Over the past five years, the City obtains 71% of its water supply from groundwater resources. This percentage falls short of the Basin Production Percentage (BPP) OCWD has set over the past few years because the City has had wells shut down due to water quality issues. The new well will increase the capacity to draw from the local aquifer and reduce dependency on imported supplies, which are more expensive and sensitive to dry periods. The proposed Well 7A, will replace existing Municipal Well 7, located at the City's Main Plant, which has been offline since 2014 due to poor water production of around 400 gallons per minute (645 AFY) and poor water quality. Well 7 is located in the shallow aquifer zone where industrial solvents and other contaminants have been detected. Well 7A will be completed to depths of 1,400 feet, drawing water from the deep groundwater zone which is free of industrial solvents.

Project Timeline. The proposed project is scheduled to begin immediately upon notification of grant funding in October 2019, and is anticipated to be completed by September 2021.

Federal Facility. The project is not located on a federal facility and is anticipated to reduce the City's draw from the Colorado River Project and State Project, Bureau of Reclamation (BOR) facilities.

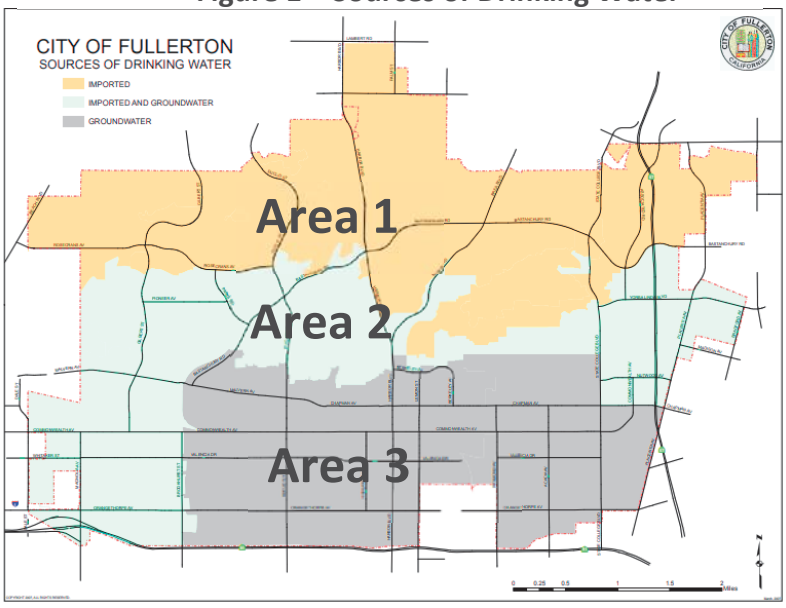
(2) Background Data

Sources of Water Supply and Water Rights. The City receives its water from two main sources, the Lower Santa Ana River Groundwater Basin (Basin), which is managed by the Orange County Water District (OCWD), and 29% (7,650 AFY) imported water from the Metropolitan Water District of Southern California (Metropolitan). Approximately 71% of the City's water supply is pumped through 10 active groundwater wells drawn from a local aquifer and managed by the

City. The natural underground reservoir stretches from the Prado Dam and fans across the northwestern portion of Orange County, excluding the communities of Brea and La Habra, and stretching as far south as the El Toro 'Y' (intersection of 5 Freeway and 405 Freeway). Approximately 29% of the City's water is imported water through Metropolitan's sources which primarily originate from the Colorado River Project, and the State Water Project from Northern California (BOR facilities). As a member of OCWD, the City has the right to pump a safe percentage of its demand annually. **The 26,200 AF annual demand consists of 7,650 AF of imported water and 18,500 AF of local groundwater.**

Water Facilities. Fullerton's water system was built with maximum flexibility. This means that under emergency, drought or other unusual conditions, the source of water to any Area may change. The Area Map in Figure 1 reflects the source of water each area receives a majority of the time. The Area Map (Figure 1) indicates where sources of water are derived for specific areas. Area 1 receives mostly imported water and Area 3 receives primarily groundwater. Area 2 receives a mixture of groundwater and imported water. The City of Fullerton's Main Plant consists of five active water wells (Well 3A, Well 4, Well 5, Well 6, and Well 8) and one inactive water well, Well 7. Wells 3A, 4, 5, 6, 7 and 8 were constructed in 1995, 1927, 1959, 1959, 1963, and 1974, respectively. When active, Wells 4 through 8 range in production from around 1,600 to 2,900 AFY; Well 3A has produced approximately 3,550 AFY over a two-year period (CY 2016-2017). All active wells in the Main Plant extract water from a groundwater basin managed by the Orange County Water District (OCWD). Active Wells 4 through 8 are relatively shallow with perforation depths ranging from 300 to 410 feet below ground surface (bgs) while Well 3A has perforations from 580 to 1,280 feet bgs. Well 7 has not been consistently online since April 2014 due to poor water quality and production. From May 2013 to April 2014, Well 7 was only pumping water at a flow rate of around 646 AFY even though it was originally designed to pump out 2,421 AFY. Water quality samples were collected from this well until January 2015 during which tetrachloroethylene (PCE) levels reached as high as 3.6 µg/L—more than half of the state and federal maximum contaminant level (MCL) of 5 µg/L for PCE. Well 7 has been offline since 2014 due to poor production and water quality concerns, per state and local regulations.

Figure 1 – Sources of Drinking Water



Area 1: imported; Area 2: Mix of groundwater and imported; Area 3: groundwater.

Six of the City's 11 wells are located at the Main Plant (on land owned by the City of Fullerton but located in the City of Anaheim just south of Fullerton's city boundary). Five of the six wells at the Main Plant pump into a forebay before pumping the water into the distribution system for disinfection and blending purposes. The sixth well at the Main Plant pumps directly into the system. Water pumped from these six wells has been naturally filtered as it passes through underlying aquifers of sand, gravel, and soil. This well water delivered into the City's water system requires only disinfectant treatment.

Number of Water Users Served and Water Use. The City serves water to approximately 142,000 people/customers through 32,000 residential, commercial and industrial service connections within its 22.3 square mile service area, with all existing connections metered. The City's water demand is approximately: 59% residential; and 26% commercial/industrial/ institutional (CII), including dedicated landscape, excluding industrial. Government and Institutional water demand accounts for 2% of total water demands and commercial accounts for 17% of total water demand. The City has a mix of commercial uses (markets, restaurants, etc.), public entities (schools, fire stations and government offices), office complexes, light industrial, warehouses and facilities serving the public. Within the non-residential sector, commercial uses are the most dominant of the City's total demand.

Projected Water Demand and Potential Shortfalls. Currently, the total water demand for retail customers served by the City is approximately 26,200 acre-feet (AF) annually consisting of 7,650 AF of imported water and 18,500 AF of local groundwater. In the last five years, the City's water demand has decreased by around 12% despite population increasing by 2% due to its diligence in the promotion of water conservation as well as financial incentives for customers to retrofit their homes and businesses with water efficient devices and appliances. The City's population is projected to increase by 14% in the next 25 years, representing an average growth rate of 0.56 percent annually (UWMP 2015, Section 2.2.2). Conservation state laws include SB 606 and AB 1668 will establish state-wide mandates to limit per capita indoor and outdoor water use. The passage of SBx7-7 has increased statewide efforts to reduce the use of potable supplies in the future. This law requires all of California's retail urban water suppliers serving more than 3,000 AFY or 3,000 service connections to achieve a 20% reduction in potable water demands (from a historical baseline) by 2020. Due to water conservation efforts in the past decade, the proposed project, and planned projects, the City is projected to meet this requirement. In addition, the City participates in the Groundwater Replenishment System (GWRS) to help provide a drought-proof, clean water source for the region through a multi-step wastewater treatment process. The GWRS was expanded in 2011, and will be further expanded with construction beginning in early 2020 with the help of BOR funding. The City is also one of 28 retail agencies in Orange County committed to reduce the region's water demand by 2020 through the 20x2020 Regional Alliance formed by the Municipal Water District of Orange County (MWDOC).

Historical Drought Conditions. The Colorado River supply faces current and future imbalances between water supply and demand in the Colorado River Basin due to long term drought conditions. From 2000 to 2015, there have only been three years when the Colorado River flow

has been above average (Metropolitan, 2015 UWMP, May 2016). The long-term imbalance in future supply and demand is projected to be approximately 3.2 MAF by the year 2060. Historically, California has experienced multiple severe droughts. The U.S. Drought Monitor (Figure 8) reflects the historical and current drought conditions.

Water Delivery / Distribution System Fast Facts.

- 142,000 population served; 22.3-square mile service area
- 27 million gallons per day maximum capacity
- 26,000 AFY total water demand for retail customers
- 423 miles of distribution pipes
- 15 reservoirs with storage capacity of 69.5 million gallons
- 14 booster pumping stations
- 10 active wells
- 6 active MWD connections
- 6 emergency interconnections with other utilities
- 32,000 service connections/meters
- 4,100 backflow preventers
- City's Water Data Validity Score 70 of 100 with total volume loss of 1,261 AFY (CY 2017)

Past Working Relationships with Reclamation. Fullerton imports on average approximately 29% of its water from the Colorado River and State Water Project (SWP) (both BOR facilities) through purchases from Metropolitan Water District of Southern California.

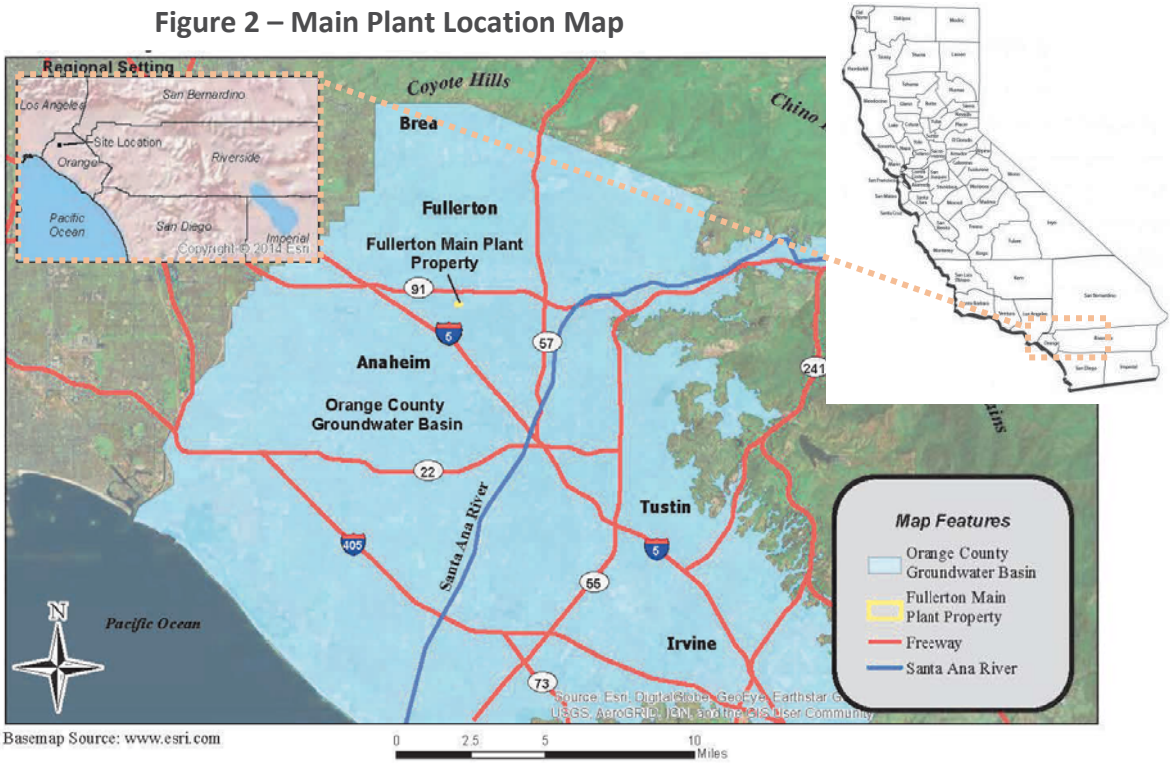
(3) Project Location.

The City is located in north Orange County bounded to the north by the Cities of La Habra and Brea, Placentia to the east, Buena Park to the west, and Anaheim to the south. The City's Water Utility provides water service within its 22.3-square mile service area, which is contiguous with the City boundary. The proposed Well 7A Replacement Project is located at 627 West La Palma Avenue, Anaheim, Orange County, California at the City of Fullerton's Main Plant property (Figure 2). It is approximately 900 feet (ft) west of the intersection of Harbor Boulevard and La Palma Avenue. The Project latitude is 33° 50' N and longitude is 117° 54' W. The Main Plant property is approximately 5 acres of open area with five active water supply wells (Wells 3A, 4, 5, 6, and 8), one inactive water well (Well 7), a discharge basin for blow-off water, a booster station, an engine generator building, and two small storage sheds. The Main Plant property is surrounded to the west, north, and east by residential properties. The south side of the property borders La Palma Avenue and the entire property is secured with a chain-link fence.

The recommended location for Well 7A on the Main Plant Site was determined based on:

- Proximity to nearby production wells and existing infrastructure
- Drilling rig access
- Adequate space to drill the well and adequate distance from the property boundary
- Proximity to the storm drain catch basin

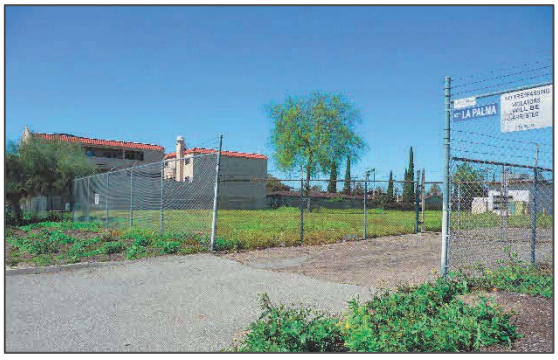
Figure 2 – Main Plant Location Map



In consideration of these criteria, the highest priority location is in the southwest portion of the Site as shown on Figures 3 and 4. This recommended location provides the following benefits:

- It is the furthest location from existing Well 3A, which will minimize pumping interference given that both wells will be perforated in the same aquifer.
- It is the closest site to the point of discharge for pump to waste.
- There is adequate room to drill and construct the well and rig access is convenient.
- The alternate well site locations could be in the northwest or northeast portion of the Main Plant Site (Figure 3). These sites are closer to the City's distribution pipeline but are closer to the existing Well 3A than the recommended location. Further, rig access to these sites is less convenient. While the recommended location is further from the existing distribution pipeline than the alternatives, there is no existing infrastructure that is in the way of constructing a pipeline connecting Well 7A to the existing distribution pipeline.

Figure 3 – Proposed Well 7A Site

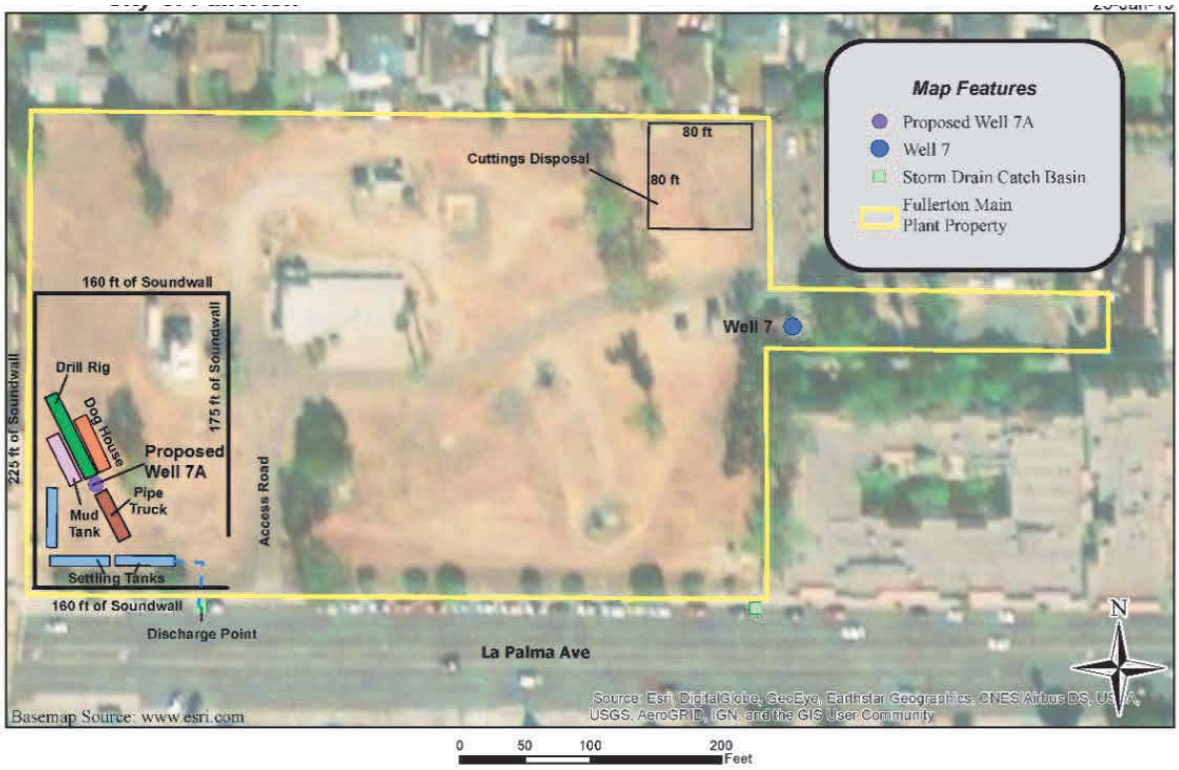


(4) Technical Project Description and Milestones

The major project milestones include:

- Phase I - Well Drilling
  - Completion of Final Design
  - File Notice of Exemption for New Well
  - Construction
- Phase II - Well Equipping
  - Completion of Preliminary Design
  - Completion of Final Design Report
  - Construction

Figure 4 – Proposed Well 7A Location Map



The City will construct a new replacement municipal well, Well 7A, at the City's Main Plant, which will be designed and constructed to produce the highest quality of potable water possible in accordance with all federal, state, and local regulations. Well 7A will be used to supply potable water to the City's distribution system. The well will be completed to a depth of 1,300 to 1,400 feet and will be equipped with a new vertical turbine pump that produces 3,225 to 7,260 AFY without impacting the production of the other active wells at this site. The well will be located in the southwest portion of the Main Plant property as shown in Figure 4. This location was selected to minimize pumping interference from existing Well 3A given that both wells will be perforated in the same aquifer. Well 7A will be in an open-air facility enclosed with fencing and a gate system, similar to existing Well 3A.

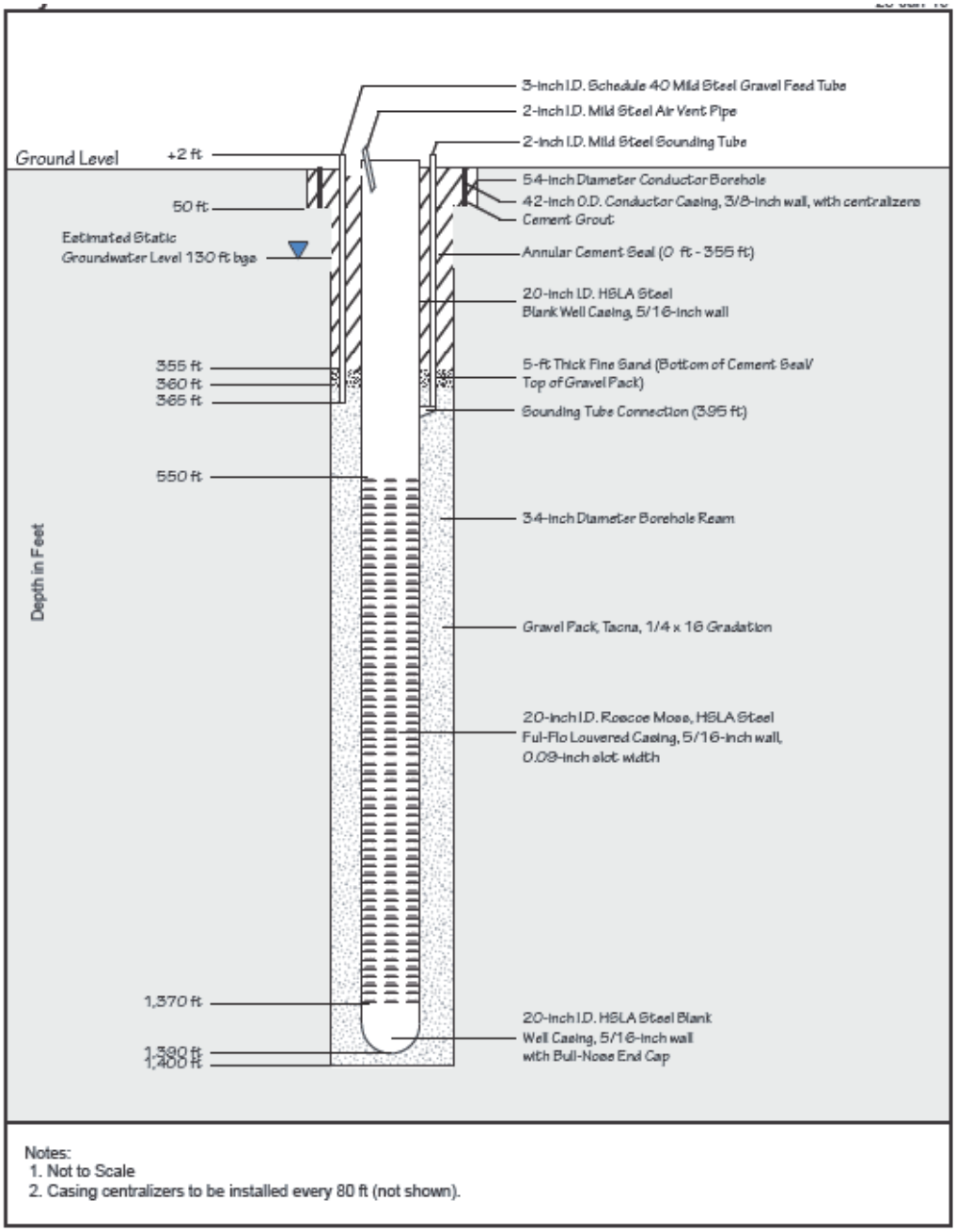
The preliminary well design of new Well 7A, shown in Figure 5, has been developed to maximize well production capacity, maximize well longevity, avoid potential water quality issues, and comply with regulatory requirements. The final design will be refined based on site-specific data to be collected during drilling of the pilot borehole for the well.

The preliminary well design incorporates the following:

- 20-inch diameter HSLA steel blank casing (+2 to 550 ft bgs).
- 20-inch diameter HSLA steel perforated casing (550 to 1,370 ft bgs; total perforated length of 820 ft).
- Perforations consisting of horizontal louvers with 0.09-inch slots (Roscoe Moss Ful-Flo pattern).

- One 2-inch diameter mild steel sounding tube connecting to the blank casing at 395 ft bgs.
- One 3-inch diameter mild steel gravel feed tube extending from +2 ft to 365 ft bgs.
- A 50-ft deep conductor casing and sanitary seal.
- One 2-inch diameter air vent pipe.
- An annular sand-cement seal from 0 to 355 ft bgs. to prevent migration of groundwater with poor water quality downward through the annulus.

Figure 5 – Well 7A Preliminary Design



The well will be drilled in two passes using the fluid reverse circulation rotary drilling method that utilizes water or an approved drilling fluid as the circulating medium. The first pass, the pilot borehole, will be drilled to a depth of 1,400 ft using a 17 ½-inch diameter rotary drilling bit. Data will be collected during and after drilling of the pilot borehole as a basis for the final well design. Upon completion of data collection in the pilot borehole, the borehole will be enlarged (second pass) to a diameter of 34-inch diameter to accommodate the 20-inch casing and other appurtenances.

Data collected from the pilot borehole will include a lithologic log, geophysical logs, and sieve analyses of selected soil samples to provide a basis for the final screen interval and design of the filter pack. Isolated aquifer zone testing will also be conducted in up to three different intervals in the borehole. The testing allows for the collection of depth-specific water quality samples from discreet aquifer zones prior to design and construction of the final well.

Upon completion of the well, two separate pumping tests will be performed. A step-drawdown test will be conducted first to assess the specific capacity and efficiency of the well and to determine an optimum pumping rate for the long-term operation of the well. A constant rate (24-hr) test will be conducted for a period of 24 hours at a discharge rate near the anticipated long-term pumping rate to obtain aquifer parameters and assess the long-term pumping drawdown for selecting the design discharge rate and pump setting.

The new well shall be drilled, constructed, tested, and equipped in compliance with the following standards and industry guidelines:

- Department of Water Resources (DWR) Bulletin Nos. 74-81 and 74-90;
- American Water Works Association (AWWA) A100-15, E103-15, C654-13, and any other applicable standards;
- California Well Standards (Well Standards);
- California Waterworks Standards, Title 22, CCR, Div 4, Chapter 16 (CAWS);
- Standard Specifications for Public Works Construction (Green Book);
- American Society of Mechanical Engineers (ASME) Standards; and
- National Electric Code (NEC)

(5) Performance Measures

Well structures are important components of sustainable design systems. The proposed project has been designed to achieve specific performance measures that include the following:

Water Supply Reliability. The City will measure performance by the reliability to efficiently and consistently deliver an annual average 4,850 AFY of water through the new well. The proposed project will increase the reliability of the current water supply by replacing a non-operable well, and providing an additional water source for the City's 142,000 customers. Water supplies will be measured by the total volume of water flowing through the structures. The City will utilize pre- and post-project water calculations to evaluate the project performance. The City has

completed a Hydrogeologic Assessment that tabulated historical groundwater elevation level data for monitoring the production of wells. Post-project performance will be measured by documenting the amount of time each pump motor operates, and the total volume of water discharged. The City will compare pre-project (from the Hydrogeologic Assessment) and post project water level conditions.

Energy Efficiency and Water Management. The power meter readings and acre-feet of water supply will be gathered and assessed as a kilowatt hour (kWh) per acre-feet efficiency value analyzed by the City. The data will be compared to other operating wells and will be used to quantify how much energy is used to operate the proposed well to determine energy efficiency. Energy improvements will be presented in both energy (kWh/acre-foot) and water flow units (volume of water) with the assumption that the new system will utilize less energy compared to the current inefficient system. The proposed project is estimated to provide an additional water supply of 4,850 AFY, helping to improve operational efficiency and save the City money in operating a well structure that bolsters sustainability. Temperature and pH will also be measured in the field.

(6) Evaluation Criterion

Criterion A—Project Benefits

- **How will the project build long-term resilience to drought?**

This Project helps the City build long-term resilience to drought by adding a newly developed municipal well to the City's network of wells, thus maintaining the ability to supply the majority of the City's potable water from local groundwater resources. Decreasing dependence on imported water supplies increases the City's resilience to drought conditions. California's conservation plans for the SWP are predicated on the assumption that individual regions become more self-sufficient by investing heavily in water conservation, water-use efficiency, water recycling, and use of a region's surface or underground storage waters.

This new well will draw from a portion of the aquifer, North Basin, maintained by the Orange County Water District (OCWD). OCWD manages and replenishes the basin, ensures water reliability and quality, prevents seawater intrusion, and protects Orange County's rights to Santa Ana River water. OCWD is responsible for managing the vast groundwater basin that provides most of northern and central Orange County's drinking water. One of the largest of several coastal basins in Southern California, the Orange County Groundwater Basin contains approximately 500,000 AF of usable storage water and covers 270 square miles. The OC Basin's full volume is approximately 66 MAF. The underground basin is millions of years old and is 4,000 feet at its deepest point. Managed properly by OCWD, the basin is a reliable source of water and provides approximately 75% of north and central Orange County's water supply. After wastewater is treated at the Orange County Sanitation District, it flows to the Groundwater Replenishment System (GWRS) where it undergoes a state-of-the-art purification process consisting of microfiltration, reverse osmosis, and ultraviolet light with hydrogen peroxide. The product water is near-distilled-quality.

Approximately 35 million gallons (132,500 cubic meters) per day of GWRS water are pumped into injection wells to create a seawater intrusion barrier. Another 65 million gallons (246,000 cubic meters) are pumped daily to Orange County Water District's percolation basins in Anaheim where the GWRS water naturally filters through sand and gravel to the deep aquifers of the groundwater basin to increase the local drinking water supply.

Completing the new municipal well in this basin supports the City's ability to increase self-sufficiency and to provide water during dry conditions. By increasing its groundwater well extraction capacity, the City will reduce the need to purchase imported water, help preserve CRA and SWP supplies, and ensure the capability to efficiently respond to a drought or other water emergency. It is anticipated that this project will continue to supply benefits to the City during the period of the well's operational life, which is 40 to 70 years (TH&C 2019 Prelim Design Report).

- **Will the project make additional water supplies available?**

Yes. New Well 7A, will replace existing Well 7 which has declined in production capacity and the water quality is degraded. Well 7 has been offline since April 2014 due to increasing VOC concentrations and reduced production. The production rate had declined from 6,133 AFY at the time of construction in 1963 to 646 AFY by 2014. The City will destroy Well 7 (not included in this grant request) and replace it with the planned Well 7A, which will be used to supply potable water to the City's distribution system. Well 7A is estimated to have a production capacity ranging from 3,225 AFY to 6,450 AFY.

- **What is the estimated quantity of additional supply the project will?**

The new well capacity is based on existing deep Well 3A on the project site and a nearby City of Anaheim well that pump approximately 2,000 gpm (3,250 AFY) and 4,500 gpm (7,260 AFY), respectively. Based on this data, it is reasonable to expect a design discharge rate on the order of 2,000 to 4,500 gpm (3,225 AFY to 7,260 AFY) for the new Main Plant Well 7A if constructed with perforations from approximately 550 to 1,370 ft bgs.

- **What percentage of the total water supply does the additional water supply represent?**

The City's current total water supply (demand) is 26,200 AFY (27,244 AFY - year 2015 from UWMP) met through locally pumped groundwater and purchased imported water from Metropolitan. New Well 7A is expected to have an average discharge rate between 3,225 AFY to 7,260 AFY which could provide between 12% and 23% of the City's total water supply. The average of 4,850 AFY with 17% discharge is a conservative estimate that will be used throughout the proposal.

The proposed Well 7A is located above the North Basin managed by Orange County Water District. Due to past manufacturing activities, volatile organic compounds (VOCs) have polluted the soil and have seeped into the groundwater basin. Four of the City's five active wells are shallow and VOCs have been detected in these wells at concentrations below acceptable concentrations. Even though the wells currently comply with drinking water standards, the

VOCs could migrate vertically. One City well (Well 3A), also in the same basin, is constructed in a deeper zone of the aquifer. No VOCs have been detected in this well. Well 7A will also be constructed in the deep aquifer zone and tap into a water source that is free of VOCs. This new source will 1) increase the reliability of local water supplies; 2) achieve optimization in the City's water system; 3) mitigate impacts caused by drought; and 4) build trust with residents by taking this proactive approach.

- **Will the project improve the management of water supplies?**

As discussed previously, specific areas of Fullerton derive their water from different sources. The Area Map (Figure 1), reflects the source of water each area receives a majority of the time. Area 1 receives imported and Area 3 water receives primarily groundwater. Area 2 receives a mixture of groundwater and imported water. Fullerton's water system was built with maximum flexibility. This means that under emergency, drought or other unusual conditions, the source of water to any Area may change. By adding Well 7A, additional local groundwater sources are available for flexibility during shortage or emergency conditions. The primary objective of the project is to provide an additional water supply to the City's current water delivery service. However, the project will also allow the City to better manage water supplies to improve operational flexibility because this new local supply is included in this pressure zone and will not have to be pumped into it.

Equipping the new well with pumps and outlet pipes will increase the return capacity of the City to meet dry period needs, thereby improving water supply management for the City's groundwater banking and management program. Since the water is a new local supply and is delivered directly into one of the City's main water transmission pipelines, it will immediately add redundancy and supply to this area. The new well will have its own disinfection facilities, which means the residual of the water leaving Well 7A will be higher and drive the residual up in this area. This is good for water quality in that the long transmission lines will better maintain chlorine residual with the boost in higher chlorinated water. The total amount of water expected to be better managed through increased pumping capacity is 242,500 AF of new potable groundwater over the 50-year life cycle of the project, equal to 4,850 AFY when normalized over that period.

New Information Available to Water Managers. The proposed project will make new water supply information and water storage capacity available to water managers and maintenance staff. This information will also help in stakeholder meetings with other cities and water authorities to develop effective plans that help to address future drought conditions.

Benefits to fish, wildlife, or the environment. The proposed project will indirectly benefit fish, wildlife, and the environment in the Lower San Gabriel River/Coyote Creek Watershed (85.49 square miles located in the northwest corner of Orange County) where over 359 species have been identified including approximately 7 rare, threatened, and endangered species such as the California gnatcatcher, White-tailed kite, Least Bells' vireo, and coastal sage scrub. The project

will also indirectly benefit species along the Colorado River by allowing more imported water to remain at the source.

Salt Water Barriers. Not applicable. Groundwater in the area is not known to be susceptible to seawater intrusion.

- **What is the estimated capacity of the new well(s), and how was the estimate calculated?**

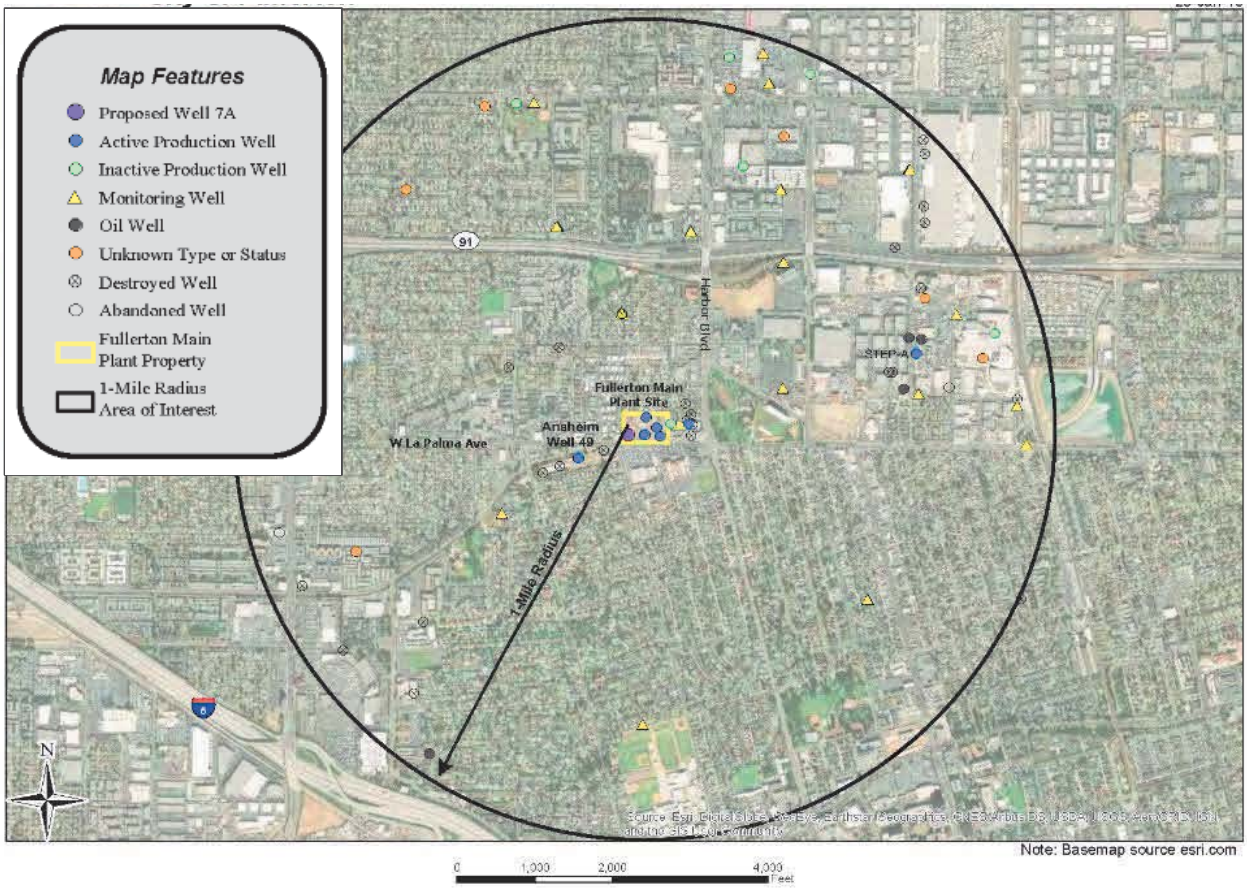
The anticipated capacity of the proposed Well 7A is 4,850 AFY. This estimate is based on existing well pumping rates described below. The Principal Aquifer underlies the Shallow Aquifer and occurs from approximately 200 feet (ft) below ground surface (bgs) to 1,700 ft bgs in the vicinity of the Site. Over 90% of groundwater production from the Basin occurs from wells that are screened within the Principal Aquifer (OCWD, 2015). Although Well 3A has a deeper perforation interval than the other Main Plant Wells, it is still perforated only in the Principal aquifer. Well 7A is proposed to be constructed in this aquifer also.

In order to evaluate potential pumping interference in nearby water-supply wells from the operation of the new Well 7A, Thomas Harder & Co., a hydrogeological consulting company, constructed a two-dimensional analytical flow model of the Main Plant Site and vicinity. The analysis was conducted for steady state conditions using the model code WinFlow (Environmental Simulations, 2003). WinFlow simulates groundwater flow in a horizontal plane and uses the principle of superposition to evaluate the effects from multiple pumping and/or injection wells in a uniform regional flow field. It is emphasized that the pumping interference analysis is meant to provide an initial estimate of potential pumping drawdown from Well 7A based on available data. The actual pumping interference from the well will be dictated by site-specific conditions, which will not be known until the well is constructed and tested. It is recommended to monitor groundwater levels in Well 3A (and potentially A-49) during the Well 7A constant rate test. The physical description of the proposed well is located above in the Technical Project Description and Milestones.

There are five active wells on the Main Plant Site: Well 3A, Well 4, Well 5, Well 6, and Well 8; one inactive well (Well 7); and three destroyed wells (Well 1, Well 2, and Well 3) (see Figure 6). There are two active production wells within one mile of the Main Plant Site. There are no surface water supplies nearby. The City of Anaheim Well A-49 is located approximately 1,000 feet to the southwest of the Site. A private industrial well (STEP-A) is located approximately 3,600 feet to the northeast of the Site. Additional wells within one mile of the Site include: 6 inactive production wells, 35 monitoring wells, 4 oil wells, 8 unknown wells, 30 destroyed wells, and 2 abandoned wells (see Figure 6). Fullerton Well 3A and Anaheim Well A-49 are the only active production wells with perforations that start below 500 ft bgs at or near the Well 7A proposed site. Well 3A was constructed in 1996 to a total depth of 1,300 ft bgs, with perforations from 580 and 1,280 ft bgs. Well 3A was constructed with 3/8-inch wall, 20-inch diameter carbon steel (i.e. mild steel) casing to 398 ft bgs then reduced to 5/16-inch wall, 16-inch diameter casing, with 0.065-inch slot width Ful-Flo perforations. Anaheim Well A-49 is constructed to a total depth of 1,480 ft bgs with perforations from 580 to 1,450 ft bgs. Because

the proposed Well 7A would be located in proximity to Well 3A, available pumping data from that well was used to help evaluate pumping characteristics of the new well. The proposed Well 7A will be used as a primary supply. Based on the data from Well 3A, it is reasonable to expect a design discharge rate on the order of 3,225 to 7,260 AFY for the new Main Plant Well 7A if constructed with perforations from approximately 550 to 1,370 ft bgs. However, it is emphasized that the final discharge rate for the Main Plant Well 7A will be based on site-specific conditions and may be different. Upon completion of well construction, two separate pumping tests will be performed on Well 7A. Once the constant rate test is complete and the data analyzed, TH&Co will submit a letter report summarizing the results of the pumping tests (including total volume of water discharged from the well) and providing a basis for determining the long-term discharge rate and pump setting. Groundwater levels are managed within a safe basin operating range to protect the long-term sustainability of the OC Basin and to protect against land subsidence. OCWD regulates groundwater levels in the OC Basin by regulating the annual amount of pumping (OCWD, Groundwater Management Plan 2015 Update, June 2015). There are no known adverse impacts to third parties that need to be monitored or mitigated.

Figure 6 – Wells on Main Plant Site



New Water Marketing Tool or Program. Not applicable.

Metering/Water Measurement Projects. Not applicable.

Environmental/Wildlife Projects. No species will be adversely affected by the project.

Evaluation Criterion B—Drought Planning and Preparedness

The City's efforts to address drought and drought planning are contained throughout the City of Fullerton's 2015 Urban Water Management Plan (UWMP). Section 5 - Water Shortage Contingency Plan of the UWMP provides a focus on drought planning and is attached as Appendix A. Referenced is Metropolitan's Water Surplus and Management Plan which provides regional context. The Well 7A Replacement Project is on The OC Plan Project List, which is included as a separate chapter within the OWOW Plan (shared goals for the Santa Ana River Watershed).

- **Explain how the applicable plan addresses drought.**

The City of Fullerton has a history of planning and preparing for drought periods and its consequences. The City developed a local Urban Water Management Plan in 2015, and Section 5 of this document addresses plans and policies for possible water supply shortages that the City and the Metropolitan Water District of Southern California (Metropolitan) have in place to respond to events including catastrophic interruption and reduction in water supply. As a member agency of Metropolitan, the City's plans are consistent with and rely on Metropolitan Water District's (MWD) Water Surplus and Drought Management Plan. In the event of a water shortage, City Council implements the appropriate water conservation stage by resolution. As part of the water supply management strategy, the City's Water Supply Shortage Conservation Plan (WSSCP) was established to provide procedures, rules and regulations for mandatory conservation to minimize the effect of a water supply shortage emergency on the City's water customers.

The City also participated in the preparation of the North and Central Orange County Watershed Management Area Integrated Regional Water Management (IRWM) Plan (The OC Plan) to identify and implement water management solutions on a regional scale. Agencies, organizations, and stakeholders collaborated to identify water resource needs, develop goals to improve water resource management and to evaluate projects for increased regional self-reliance and improved quality of life in Orange County.

Multiple Stakeholder Input. Recognizing that close coordination among other relevant public agencies is key to the success of its UWMP, the City worked closely with other entities such as surrounding cities and Metropolitan to develop and update this planning document. The City also encouraged public involvement by holding a public hearing for residents to learn and ask questions about their water supply in addition to the City's plans for providing a reliable, safe, high quality water supply.

- **Drought plan includes consideration of climate change impacts to water resources.**

The City's UWMP discusses how climate change impacts to the Colorado River Supplies (UWMP Section 3.2.1) and State Water Project Supplies (UWMP Section 3.2.2) affect the City. The UWMP (Section 3.6.2.4) specifically addresses climate change impacts and areas of concern.

- **How is your proposed drought resiliency project is supported by an existing drought plan?**

The proposed construction of Well 7A responds to the City's UWMP Section 7.1, "Replacement of older wells with new, more efficient wells will increase the capacity of existing booster stations and reduce water waste so the City can meet projected demands with their facilities and distribution system more efficiently." In addition, Well 7A is specifically named in The OC Plan Project List and therefore incorporated into the regional OWOW as well. The project will implement the following The OC Plan goals:

- Achieve resilient water resources through innovation and optimization.
- Ensure high quality water for all people and the environment.
- Educate and build trust between people and organizations.

The City's Water Supply Shortage Conservation Plan is included in the UWMP as Appendix D. The City is committed to policy principles that allow for sustainable management of scarce water resources viewed in terms of future climate change impacts. Water supplies in the City and at the source of Fullerton's water are expected to be in a state of shortage during drought conditions. During these times, the City has plans for maximum beneficial use, and prevention of waste and unreasonable uses to serve the interests of the people and for the public welfare.

The proposed project resides in the Santa Ana River Watershed, Southern California's largest watershed covering nearly 3,000 square miles and home to more than six million people. In 2012, BOR completed the Santa Ana River Watershed Basin Study in collaboration with the Santa Ana Watershed Project Authority (SAWPA), of which Fullerton is a member agency. The purpose of the Study was to incorporate climate change into the region's water projection and identify potential adaptation strategies for dealing with drought conditions. The goals of the study included: incorporating existing regional and local planning studies; sustaining regional water resources management planning; ensuring a collaborative approach; using science and technology to assess climate change and greenhouse emissions affects, watershed adaptation planning; and expanding outreach to water uses and stakeholders.

- **Does the drought plan identify the proposed project as a potential mitigation?**

The project is identified as a potential mitigation action.

- **Does the proposed project implement a goal or need identified in the drought plan?**

The project specifically addresses a challenge with adequate, reliable water supply listed on page 1-20 of The OC Plan, "Environmental constraints such as drought and Delta pumping restrictions attributed to importing water into the Region are affecting the reliability of imported water supply. Therefore, one objective for the Region is to meet the projected increase in water demands with consideration of cost-effective strategies, such as increasing

local water supplies, sustainably managing groundwater resource, and maximize water use efficiently."

- **Describe how the proposed project is prioritized in the referenced drought plan?**

Section 3.4 of the UWMP presents existing and projected water supplies through 2040 for Fullerton (see Figure 7). The proposed Well 7A Replacement Project is necessary to meet these projections.

Figure 7 – Fullerton Projected Water Supplies (AFY)

Retail: Water Supplies — Projected						
Water Supply	Additional Detail on Water Supply	Projected Water Supply				
		2020	2025	2030	2035	2040
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Groundwater	Orange County Groundwater Basin	18,689	20,063	20,201	20,195	20,224
Purchased or Imported Water	Metropolitan	8,010	8,598	8,657	8,655	8,667
	Total	26,699	28,661	28,858	28,850	28,891

The proposed drought resiliency project, to drill Well 7A that penetrate existing deep aquifers to capture clean potable water for city residents and businesses, is supported by the UWMP. As stated in Section 2.4 of the UWMP "Projected Water Supply," the Plan directly identifies the Project as part of its mitigation and response strategy, "The City recognizes the need to identify, support and implement local water supply projects to augment imported supplies and help drought proof the Municipal service area…overall groundwater supply reliability is expected to increase through the implementation of planned improvements to its groundwater facilities, WRD's Goldsworthy Desalter expansion, through continued access to imported water, and through continued and augmented use of recycled water." The project helps implement the City's goal to reduce their dependence on imported water.

The City relies on a combination of imported water and local groundwater to meet its water needs. The City works together with two primary agencies, Metropolitan and OCWD to ensure a safe and reliable water supply that will continue to serve the community in periods of drought and shortage. The sources of imported water supplies include the Colorado River and the SWP provided by Metropolitan. The City's main source of water supply is groundwater from the Lower Santa Ana River Groundwater Basin, also known as the OC Basin. Currently, OCWD has set its BPP at 75% resulting in the City's goal of securing 75% of its water demand from groundwater supplies and 25% from imported water supplies. Historically, local groundwater has been the cheapest and most reliable source of supply for the City. The City relies on approximately 18,500 AFY of groundwater from the OC Basin. The OC Basin has historically provided over 300,000 AFY of groundwater to residents in Orange County.

Evaluation Criterion C—Severity of Drought Impacts addressed by the Project

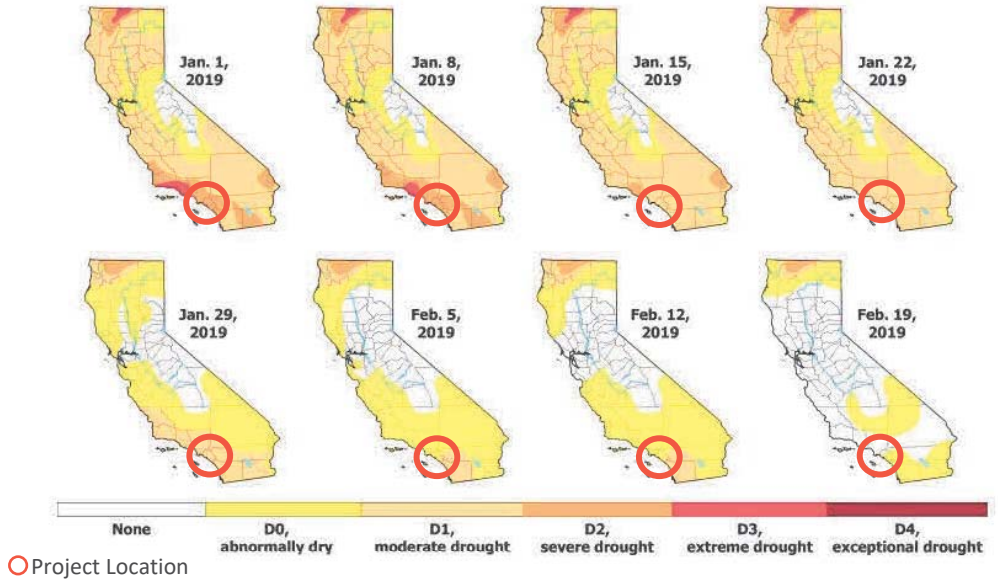
The City is located within the South Coast Air Basin (SCAB) that encompasses all of Orange County, and the urban areas of Los Angeles, San Bernardino, and Riverside counties. The SCAB

climate is characterized by Southern California's "Mediterranean" climate: a semi-arid environment with mild winters, warm summers and moderate rainfall.

Local rainfall has limited impacts on reducing demand for the City. Water that infiltrates into the soil may enter groundwater supplies depending on the local geography. However, due to the large extent of impervious cover in Southern California, rainfall runoff quickly flows to a system of concrete storm drains and channels that lead directly to the ocean. OCWD is one agency that has successfully captured stormwater along the Santa Ana River and in recharge basins for years and used it as an additional source of supply for groundwater recharge. Metropolitan's water supplies come from the State Water Project (SWP) and the Colorado River Aqueduct (CRA), influenced by climate conditions in Northern California and the Colorado River Basin, respectively. Both regions have been suffering from multi-year drought conditions with record low precipitation which directly impact water supplies to Southern California.

Drought conditions continue to be a critical issue for the State of California's water supply. Climate data demonstrates that California has experienced several periods of severe drought: 1928-1934, 1976-1977, 1987-1991, 2007-09, and most recently 2013-16 resulting in significant impacts to the State's water supplies, with the years 2012-15 representing the driest in California's recorded history. By late 2016, drought conditions covered more than 80% of California, and about 20% of the state was in the worst category: exceptional drought. An atmospheric river that formed over the Pacific Ocean in early 2017, sending storm after storm after storm toward the West Coast, officially ended the drought. The winter of 2017-18, however, was unusually dry, and drought conditions were present statewide throughout 2018. The droughts were not as severe as in 2016 — none of the state entered that "exceptional" drought category. Currently, California has received heavier than average rains throughout January and February 2019. The Drought Monitor shows that as of Feb. 19, less than 4% of the state is in drought.

Figure 8 – Drought Monitor Report



Project Location
Source: https://droughtmonitor.unl.edu/

Evaluation Criterion D—Project Implementation

Describe the implementation plan of the proposed project. The proposed project is part of one phase of a multi-phase project. The construction of Well 7A consists of two primary phases: Phase I: Well Drilling and Phase II: Well Equipping. The City is in the process of completing design for the drilling of Well 7A (which is not included as part of this project). The project being proposed is for Phase II: Well Equipping, which will commence after the grant agreement is signed. The following details the scope of work, major tasks, deliverables, and a project schedule (Figure 9) for the construction phase only. A detailed Project Schedule was prepared for the project by Thomas Harder & Co as of January 25, 2019 as is included as Appendix D.

Project Tasks. The following defines the major tasks for completion of this proposed project:

Figure 9 – Proposed Project Schedule

Task	Major Task	Month of Completion	2019			2020				2021		
			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
1.0	Execute Grant Agreement	10/19			X							
	Phase I – Well Drilling (not included in grant request)											
	Completion of Final Design	04/19	X									
2.0	Environmental Documentation, Permits, and Approvals	05/19	X									
	Start of Construction	10/19			X							
	End of Construction	03/20				X						
3.0	Phase II – Well Equipping											
3.1	Preliminary Design Report	05/20	X									
3.2	Completion of Final Design	11/20							X			
3.3	Well Equipping Construction	01/21-07/21								X	X	X
3.4	Well pumping tests	06/21									X	
3.5	End of Construction	07/21										X
4.0	Grant Administration, Reports, Reimbursements				X	X	X	X	X	X	X	X

Task 1.0: Execute Grant Agreement – The City will meet with the BOR to review and finalize a project schedule, deliverables, and execute a grant agreement.
Deliverables: Executed grant agreement.

Task 2.0: Environmental Documentation, Permits, and Approvals – Environmental documentation meeting the requirements of CEQA and NEPA may have been prepared for the proposed project prior to the grant agreement. The City anticipates a negative declaration for CEQA. Permits and approvals for the project (listed below) will be obtained.
Deliverables: Completion of environmental documents, permits, and approvals.

Task 3.0: Phase II – Well Equipping
Task 3.1: Completion of Preliminary Design Report for well equipping
Task 3.2: Completion of final designs for well equipping
Task 3.3: Start of Construction - Contractor mobilization; site work; installation of pump, motor, column assembly, electrical improvements, site piping, and chemical feed system; and inspections.
Task 3.4: Well pumping tests
Task 3.5: End of Construction - Demobilization and site close-out.
Deliverable: Well pumping tests and Well 7A in operation

Task 4: Grant Administration, Reports, Reimbursements
Deliverables: Semi-annual status report, request(s) for reimbursements, final project report and notice of completion.

Describe any permits that will be required, along with the process for obtaining such permits.
Required Permits necessary for drilling and equipping Well 7A:

- CEQA and NEPA – The City plans to file a notice of exemption for this project.
- City of Anaheim construction permit – A well construction permit will be required from the City of Anaheim. The City's Consultant will: coordinate with the Environmental Services Division and verification document signed by a state certified hydrogeologist that the new well will not negatively impact an existing well; and with City of Anaheim inspector(s) during drilling and abandoning activities. For pipeline assessment activities, Consultant shall coordinate with the City of Anaheim Public Works department as necessary. The drilling contractor will apply for this permit. The Preliminary Design Report will be appended to the well permit application for review and comment by the City of Anaheim. The Project Manager has had an initial consultation with Anaheim. No concerns are anticipated.
- National Pollutant Discharge Elimination System (NPDES) permit– The City will acquire a Discharge Permit from the Regional Water Quality Control Board, Santa Ana Region (RWQCB). The City will review and submit the Consultant prepared permit application.
- State Well Number – A California Department of Water Resources (CDWR) driller's log and well number will be obtained and provided by the drilling contractor after the well has been constructed and tested.
- Orange County Flood Control District (OCFCD) – The City will obtain an OCFCD Encroachment Permit in order to discharge water into the storm drain. The permit will be incorporated into the Technical Specifications and Bid Documents.

Identify and describe any engineering or design work performed specifically in support of the proposed project. A Preliminary Design Report- Destruction Well 7 and Construction Well 7, January 25, 2019 has been prepared for the City of Fullerton by Thomas Harder & Company. The purpose for this preliminary design report is to outline the basic design criteria that will be incorporated into the Technical Specifications to be used, in part, as a basis for obtaining bids to drill and construct Well 7A. The preliminary design recommendations are based on the current understanding of the hydrogeology of the area from existing data obtained from the City and

Orange County Water District (OCWD). The final design for the well will be refined based on site-specific data collected from the pilot borehole of Well 7A.

Describe any new policies or administrative actions required to implement the project.
The City Council will be presented with a Resolution on April 16, 2019 to authorize submission of this application. A draft copy of the resolution is included in Appendix C. An executed copy will be sent to the Reclamation prior to April 27, 2019.

Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office? The environmental compliance estimate of $1,050 is based on prior applications of similar scope.

Evaluation Criterion E—Nexus to Reclamation

How is the proposed project connected to a Reclamation project or activity?
Fullerton receives approximately 25% of its water from the Metropolitan Water District of Southern California, which imports water from the Colorado River Project (BOR facility) and the State Water Project. The proposed project will 1) increase the reliability of local water supplies; 2) achieve optimization in the City's water system; 3) mitigate impacts caused by drought; and 4) build trust with residents by taking this proactive approach. The project does not directly benefit any tribes. The project is not located on Reclamation project lands, does not involve Reclamation facilities, and is not located in a basin with BOR projects. The proposed project will not increase water production to the Santa Ana River Watershed Basin.

Evaluation Criterion F—Department of the Interior (DOI) Priorities

The proposed project supports two DOI priorities. 1) Creating a conservation stewardship legacy second only to Teddy Roosevelt by utilizing science to identify best practices to manage land and water resources and adapt to changes in the environment. The proposed project implements a low-impact and cost-effective design to use local groundwater near the source - recognized as a best management practice by local, regional, state and federal water authorities. 2) Modernizing infrastructure, by supporting the White House Public/Private Partnership Initiative to modernize infrastructure and prioritize infrastructure needs to highlight construction. Using a combination of local and Federal funds the project will replace/modernize insufficient, undersized, and poor performing systems which produced contaminated water. The new Well 7A has an approximate life cycle of 50 years.

End 20-page limit

Project Budget

Funding Plan and Letters of Commitment

The total cost of the project is estimated at $2,960,067. The City will complete planning, design, environmental documents, and permitting prior to the grant agreement. These costs are reflected in the total project budget, but not included as part of the grant request.

The City has secured non-federal funding of $1,600,000 through California Proposition 84 funds for the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP). An email with Orange County Water District (OCWD)'s SARCCUP commitment is below. OCWD is administering the SARCCUP program. The City will provide a share of $1,060,067, that was approved with the annual budget as a capital improvement project by the City Council on June 5, 2018. The City is requesting $300,000, and 11% share from the Reclamation (see Figure 10). Funding from OCWD will be received on a reimbursement basis from July 2019 through June 2020.

Describe how the non-Federal share of project costs will be obtained.

The City of Fullerton is one of five member agencies of the Santa Ana Watershed Project Authority (SAWPA) that is participating in a regional groundwater banking program known as the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP). This program will provide a collaborative, watershed-scale approach toward long-term groundwater basin management, replenishment and water transfers, allowing the five agencies to collectively plan for extended dry periods while also conducting habitat restoration and assisting with the development of regional long-term water use efficiency programs.

SARCCUP is a $100 million program developed by the five member agencies of SAWPA: EMWD, Western Municipal Water District, Inland Empire Utilities Agency, Orange County Water District (OCWD) and San Bernardino Valley Municipal Water District (Valley). SAWPA received more than $55 million in California Proposition 84 funding that will be dedicated toward the program. Phase I of SARCCUP will develop 180,000 acre-feet of storage in four groundwater basins. During wet years, agencies may purchase additional imported water from the Metropolitan Water District of Southern California (MWD) and recharge the water into local groundwater basins. Supplies would be used for extraction during dry periods, such as prolonged droughts.

Confirmation of SARCCUP Funding Commitment

Confirmation of SARCCUP Funding Commitment

From: Hutchinson, Adam
Sent: Wednesday, March 13, 2019 5:32 PM
To: avalenzuela@tustinca.org; Grisso, Michael <MGrisso@tustinca.org>; Jerry Mendzer - East Orange County Water District (jmendzer@eocwd.com) <jmendzer@eocwd.com>; Lisa Ohlund (lohlund@eocwd.com) <lohlund@eocwd.com>; Phil Lauri, P.E. <phill@mesawater.org>; Tiffany Foo <TFoo@cityoffullerton.com>
Cc: Kennedy, John <jkennedy@ocwd.com>; Woodside, Greg <gwoodside@ocwd.com>
Subject: SARCCUP Schedule

To SARCCUP Well Participants,
We are excited to begin working with all of you to bring grant funding to Orange County to help you construct additional production wells. These wells will be an important part of the conjunctive use element of SARCCUP.

I will arrange a meeting with all of you in the near future to discuss the details. Given that this is part of a Proposition 84 grant, there are numerous requirements that must be followed, such as Labor Compliance, prevailing wages, CEQA coverage, etc.

As for the overall schedule, the wells should be completed and work finished by Sept. 2021. For now, the critical path item is CEQA coverage for all your projects as we have to amend the EIR for SARCCUP before we begin getting reimbursements from DWR.

Please let me know if there are others that should be invited to a kickoff meeting on this project. Once I get all the names, I will set up the meeting.

Also let me know if there are others that should be included in future emails regarding this project.

Regards,
Adam

Adam Hutchinson, PG, CHG
Recharge Planning Manager

Orange County Water District
18700 Ward Street, Fountain Valley, CA 92708
tel: (714) 378-3214
fax: (714) 378-3373
email: ahutchinson@ocwd.com

Confirmation of SARCCUP Funding Commitment (continued)

From: Hutchinson, Adam [mailto:ahutchinson@ocwd.com]
Sent: Wednesday, March 20, 2019 3:34 PM
To: avalenzuela@tustinca.org; Grisso, Michael <MGrisso@tustinca.org>; Jerry Mendzer - East Orange County Water District (jmendzer@eocwd.com) <jmendzer@eocwd.com>; Lisa Ohlund (lohlund@eocwd.com) <lohlund@eocwd.com>; Phil Lauri, P.E. <phill@mesawater.org>; Tiffany Foo <TFoo@cityoffullerton.com>; Sonny Tran <stran@cityoforange.org>; Jose Diaz <jdiaz@cityoforange.org>; Jeff Smyth <jsmyth@eocwd.com>
Cc: Kennedy, John <jkennedy@ocwd.com>; Woodside, Greg <gwoodside@ocwd.com>
Subject: RE: SARCCUP Schedule

All,
We regret making an error in assuming that the City of Orange participated in the MWD CUP project. To be consistent with our approach of distributing grant funding to those agencies that did not receive MWD CUP funds, we will apportion the approximately $8M of funding we hope to receive among five agencies for $1.6M per agency. There is the potential for increasing grant funding if we are able to shift more SARCCUP storage to the OCWD Basin. If we are successful in obtaining this additional funding, it would be equally distributed among the five agencies.

We welcome the City of Orange to this program.

Regards,
Adam

Adam Hutchinson, PG, CHG
Recharge Planning Manager

Orange County Water District
18700 Ward Street, Fountain Valley, CA 92708
tel: (714) 378-3214
fax: (714) 378-3373
email: ahutchinson@ocwd.com

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

The budget proposal includes project costs that may be incurred prior to award.

A. Salaries and Wages and Fringe Benefits – costs may be incurred for approximately 3 months (July 1 – September 30, 2019) related to planning, design, and procurement of consultants and contractors. The amount is yet to be determined.
B. Environmental documents, permitting, and approvals – costs of approximately $1,050 may be incurred prior to grant award in order for the project to be ready for construction by October 2019.

C. Pre-design, design drawings, technical specifications, and bid assistance may be completed by consultant(s) prior to grant award. Estimated cost for these services for Phase I: Well Drilling is $94,500; and Phase II: Well Equipping is $361,990 for a total of approximately $456,490.
D. Procurement of construction and drilling contractor is anticipated to be completed prior to grant award. Anticipated cost is $4,000 for procurement advertising.

Figure 10 – Total Project Cost Table	
Source	**Amount**
Costs to be reimbursed with the requested Federal funding	$300,000
Costs to be paid by the applicant	$1,060,077
Costs to be reimbursed with OCWD SARCCUP funds via Proposition 84	$1,600,000
Total Project Cost	**$2,960,077**

Figure 11 – Summary of Non-Federal and Federal Funding Sources		
Funding Sources	**% of Total Cost**	**Amount**
Non-Federal: Orange County Water District	54%	$1,600,000
Non-Federal: City of Fullerton	36%	$1,060,077
Non-Federal Subtotal	90%	$2,660,077
Federal: Reclamation Funding Requested	10%	$300,000
Total Project Cost	**100%**	**$2,960,077**

Budget Proposal

Fullerton Well 7A Construction Project						
Budget Item Description	**Computation**			**Total Cost**	**Reclamation Funding Request**	**Non-Federal Funding**
	$/Unit	**Unit**	**Quantity**			
Salaries and Wages						
Engineering Manager (4 hour per week for 24 months)	$ 50.75	Hour	416	$ 21,113	$ -	$ 21,113
Water Systems Manager (1 hour per week for 24 months)	$ 69.32	Hour	104	$ 7,209	$ -	$ 7,209
Public Works Director (1 hour every 2 weeks for 24 months)	$ 93.75	Hour	104	$ 9,750	$ -	$ 9,750
Account Clerk III	$ 23.59	Hour	20	$ 472	$ -	$ 472
Accounting Supervisor	$ 47.75	Hour	10	$ 478		$ 478
Subtotal Salaries				**$ 39,021**	**$ -**	**$ 39,021**
Fringe Benefits						
Engineering Manager	38%	Percent	$ 21,113	$ 8,023	$ -	$ 8,023
Water Systems Manager	38%	Percent	$ 7,209	$ 2,740	$ -	$ 2,740
Public Works Director	38%	Percent	$ 9,750	$ 3,705	$ -	$ 3,705
Accountant	38%	Percent	$ 472	$ 179	$ -	$ 179
Accounting Manager	38%	Percent	$ 478	$ 181	$ -	$ 181
Subtotal Fringe				**$ 14,828**	**$ -**	**$ 14,828**
Materials and Supplies						
Phase I: Well Drilling						
Total Well Drilling				$ 541,902		$ 541,902
Phase II: Well Equipping						
Pump, Motor, Column Assembly	$ 255,000	LS	1	$ 255,000	$ 250,000	$ 5,000
Electrical Improvements	$ 355,000	LS	1	$ 355,000	$ 50,000	$ 305,000
Site Work	$ 120,000	LS	1	$ 120,000	$ -	$ 120,000
Site Piping	$ 150,000	LS	1	$ 150,000	$ -	$ 150,000
Chemical Feed System	$ 105,000	LS	1	$ 105,000	$ -	$ 105,000
Procurement Advertising for DBE/MBE				$ 4,000	$ -	$ 4,000
Total Well Equipping				$ 989,000	$ 300,000	$ 689,000
Subtotal Materials and Supplies				**$ 1,530,902**	**$ 300,000**	**$ 1,230,902**
Contractual						
Phase I: Well Drilling						
Total Consultant Services				$ 182,025	$ -	$ 182,025
Total Contractor Services				$ 540,750	$ -	$ 540,750
Phase II: Well Equipping						$ -
Consultant Services						$ -
Pre-design	$ 42,500	LS	1	$ 42,500		$ 42,500
Design and Bid Assistance	$ 320,000	LS	1	$ 320,000		$ 320,000
Construction and Inspection Services	$ 185,000	LS	1	$ 185,000		$ 185,000
Total Consultant Services				$ 547,500	$ -	$ 547,500
Contractor Services						$ -
Mobilization	$ 50,000	LS	1	$ 50,000		$ 50,000
Total Contractor Services				$ 50,000	$ -	$ 50,000
Subtotal Contractual				**$ 1,320,275**	**$ -**	**$ 1,320,275**
Environmental						
NEPA				$ 1,000		$ 1,000
CEQA Permitting				$ 50		$ 50
CEQA Monitoring & Mitigation						$ -
Subtotal Environmental				**$ 1,050**		**$ 1,050**
Total Direct Costs				$ 2,906,077	$ 300,000	$ 2,606,077
Indirect Cost Rate						**$ -**
Total Project Costs				**$ 2,906,077**	**$ 300,000**	**$ 2,606,077**
Percentage Contribution by Funding				**100%**	**10%**	**90%**

Budget Narrative

Salaries and Wages – Total salaries and wages for the proposed project are $39,022 for the following staff:

A. Engineering Manager (Project Manager), Tiffany Foo, P.E. – It is estimated that the Engineering Manager, who will serve as the Project Manager, will work approximately four hours per week for 24 months. The Manager will be responsible for project oversight with the staff and consultants, and all internal and external communications with stakeholders and the public. Hourly wage is $50.75 x 416 hours = $21,113.
B. Water Systems Manager – It is estimated that the Water Systems Manager will work 1 hour per week for 24 months. The Systems Manager will be responsible for managing various tasks associated with the proposed project. Hourly wage is $69.32 x 104 hours = $7,209.
C. Director of Public Works, Meg McWade – The Director will work on the project approximately 1 hour every two weeks for 24 months. The Director will report to the City Manager, execute contracts, and provide department oversight for the project. Hourly wage is $93.75 x 52 hours = $9,750.
D. Account Clerk III – It is estimated that the Account Clerk will work approximately 20 hours over the project period assisting with payment processing and grant management reporting. Hourly wage is $23.59 x 20 hours = $472.
E. Accounting Supervisor – The Accounting Supervisor will work approximately 10 hours over the project period supervising the Account Clerk and ensuring accuracy of reporting. Hourly wage is $47.75 x 10 hours = $478.

Fringe Benefits – The approximate total fringe benefits are $14,828 for the staff identified above. Fringe benefits typically include retirement, vacation, sick leave, health and life insurance, disability and workman's compensation insurance, etc. Fringe benefits are approximated for the purposed of this estimated budget at 38% per employee:

A. Engineering Manager, Tiffany Foo = $8,023
B. Water Systems Manager = $2,740
C. Director of Public Works, Meg McWade = $3,705
D. Account Clerk III = $179
E. Accounting Supervisor = $181

Travel – None.

Equipment – None.

Materials and Supplies – The City will hire a qualified Contractor to complete the construction phase of the project. Total construction materials and supply costs are estimated at $1,530,902.

- Phase II: Well Equipping at $989,000 and includes pumps, motor, column assembly, electrical improvements, site work, site piping, chemical feed system, and procurement for advertising for Disadvantage Business Enterprise and Minority Business Enterprise.

Contractual/Construction – The City will hire qualified Consultant(s) and construction Contractor(s). Contractors and Consultants will be selected using the City's procurement process. The City's established procurement process is in alignment with the federal procurement requirements. This process is also required by OCWD, the other non-federal funding source. The total contractual and construction costs sans materials and equipment are estimated at $1,320,275.

Phase II: Well Equipping Consultant services are estimated at $547,500 and include pre-design, design and bid assistance, and construction and inspection services; and Contractor services at $50,000 includes mobilization.

Third-Party In-Kind Contributions – None.

Environmental – Costs to ensure environmental compliance are estimated at $1,050 and include costs for NEPA compliance ($1,000), and CEQA permitting ($50).

Indirect Costs – No indirect costs are included in this budget.

Total Costs – The proposed project total cost is approximately $2,960,077.

Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment?
The proposed project will construct a new well structure. The City is required to implement all avoidance and mitigation measures in compliance with the City of Anaheim. Residential neighborhoods are located adjacent to the project site on both the north and west sides (see Figure 2). In order to minimize noise impacts to residential areas, the drilling contractor will be required to implement the noise suppression measures including: constructing 24-ft tall sound walls along all sides of the drilling site (see Figure 4); equipping all internal combustion engines with critical residential silencers (mufflers); shielding noise-producing equipment; and conducting operations in the most effective manner to minimize noise. All drilling, well construction, and testing activities will need to comply with the noise ordinance of the City of Anaheim.

Threatened or Endangered Species. We do not believe there are any threatened or endangered species on or near the project site. The site is already developed and is not a designated critical habitat. The project will not have any negative impact on threatened species or habitat.

Wetlands or Surface Waters Inside the Project Boundary. There are no wetlands or other surface waters inside the project boundaries.

Water Delivery System Construction. Since the formation of the City's Water Utility in 1906, millions of dollars of water facilities have been installed.

Modifications of or Effects to an Irrigation System. This project will not require any modifications to or effects on individual features of the irrigation such as headgates, canals, or flumes.

National Register of Historic Places. No buildings are eligible for listing on the National Register of Historic Places located within the proposed project area.

Archeological Sites. There are no known archeological sites in the proposed project area.

Effect in Low Income or Minority Populations. The proposed project will not have a disproportionately high and adverse effect on low income or minority populations. The project is located within and will serve a Severely Disadvantaged Community as documented by the Department of Water Resources Disadvantaged Communities (DAC) Mapping Tool. The project will ensure more water reliability for low-income and minority populations in the City's service area. There are no negative impacts of the proposed project for the DAC and no land use impacts.

Access to Indian Sacred Sites or Impact on Tribal Lands. The proposed project will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

Noxious Weed or Invasive Species. The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

Required Permits or Approvals. The City may obtain final CEQA and NEPA clearance prior to October, 2019, the start of the grant period.

- City of Anaheim Well Construction Permit – The City's Project Manager has had an initial consultation with Anaheim. Anaheim does not anticipate any concerns with issuing a construction permit.
- Discharge Permit – The City will need to acquire a National Pollutant Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board, Santa Ana Region (RWQCB). The City will originate the permit application.
- State Well Number – A California Department of Water Resources (CDWR) driller's log and well number will be obtained and provided by the drilling contractor after the well has been constructed and tested.
- Orange County Flood Control District – The City will obtain an Orange County Flood Control District (OCFCD) Encroachment Permit in order to discharge water into the storm drain. The permit will be incorporated into the Technical Specifications and Bid Documents.

Appendices.

A. **Drought Plan.** Relevant pages from the following plans are provided in Appendix A:
    1. The City of Fullerton, Urban Water Management Plan, Section 5, Water Shortage Contingency Plan related to drought planning; and
    2. The OC Plan, Integrated Regional Water Management for the North and Central Orange County Watershed Management Areas goals and project list.
B. **Letters of Support.** The City is pleased to provide letters of commitment and project support, included in Appendix B, from the following agencies:
    1. Santa Ana Watershed Authority
    2. Orange County Water District
    3. Orange County Board of Supervisors
C. **Resolution.** A draft of the official resolution, see Appendix C, has been submitted to the City Clerk for inclusion on the April 16, 2019 City Council Agenda. The official resolution will be submitted to BOR within 30 days of the due date (by April 27, 2019).
D. **Proposed Project Schedule**. The complete project schedule showing all phases and tasks is included for reference and demonstrates the level of pre-planning completed.

Appendix A. Drought Plans

1. City of Fullerton – Urban Water Management Plan (excerpts)
2. The OC Plan – Integrated Regional Water Management for the North and Central Orange County Watershed Management Areas (excepts)

2015

URBAN WATER MANAGEMENT PLAN

FINAL

November 2017 Amendment

5 WATER SHORTAGE CONTINGENCY PLAN

5.1 Overview

In connection with recent water supply challenges, the State Water Resources Control Board found that California has been subject to multi-year droughts in the past, and the Southwest is becoming drier, increasing the probability of prolonged droughts in the future. Due to current and potential future water supply shortages, Governor Brown issued a drought emergency proclamation on January 2014 and signed the 2014 Executive Order that directs urban water suppliers to implement drought response plans to limit outdoor irrigation and wasteful water practices if they are not already in place. Pursuant to California Water Code Section 106, it is the declared policy of the state that domestic water use is the highest use of water and the next highest use is irrigation. This section describes the water supply shortage policies Metropolitan and the City have in place to respond to events including catastrophic interruption and reduction in water supply.

5.2 Shortage Actions

5.2.1 Metropolitan Water Surplus and Drought Management Plan

Metropolitan evaluates the level of supplies available and existing levels of water in storage to determine the appropriate management stage annually. Each stage is associated with specific resource management actions to avoid extreme shortages to the extent possible and minimize adverse impacts to retail customers should an extreme shortage occur. The sequencing outlined in the Water Surplus and Drought Management (WSDM) Plan reflects anticipated responses towards Metropolitan's existing and expected resource mix.

Surplus stages occur when net annual deliveries can be made to water storage programs. Under the WSDM Plan, there are four surplus management stages that provides a framework for actions to take for surplus supplies. Deliveries in DVL and in SWP terminal reservoirs continue through each surplus stage provided there is available storage capacity. Withdrawals from DVL for regulatory purposes or to meet seasonal demands may occur in any stage.

The WSDM Plan distinguishes between shortages, severe shortages, and extreme shortages. The differences between each term is listed below.

- Shortage: Metropolitan can meet full-service demands and partially meet or fully meet interruptible demands using stored water or water transfers as necessary.
- Severe Shortage: Metropolitan can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation.
- Extreme Shortage: Metropolitan must allocate available supply to full-service customers.

There are six shortage management stages to guide resource management activities. These stages are defined by shortfalls in imported supply and water balances in Metropolitan's storage programs. When Metropolitan must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Figure 5-1 gives a summary of actions under each surplus and shortage stages when

an allocation plan is necessary to enforce mandatory cutbacks. The goal of the WSDM Plan is to avoid Stage 6, an extreme shortage.

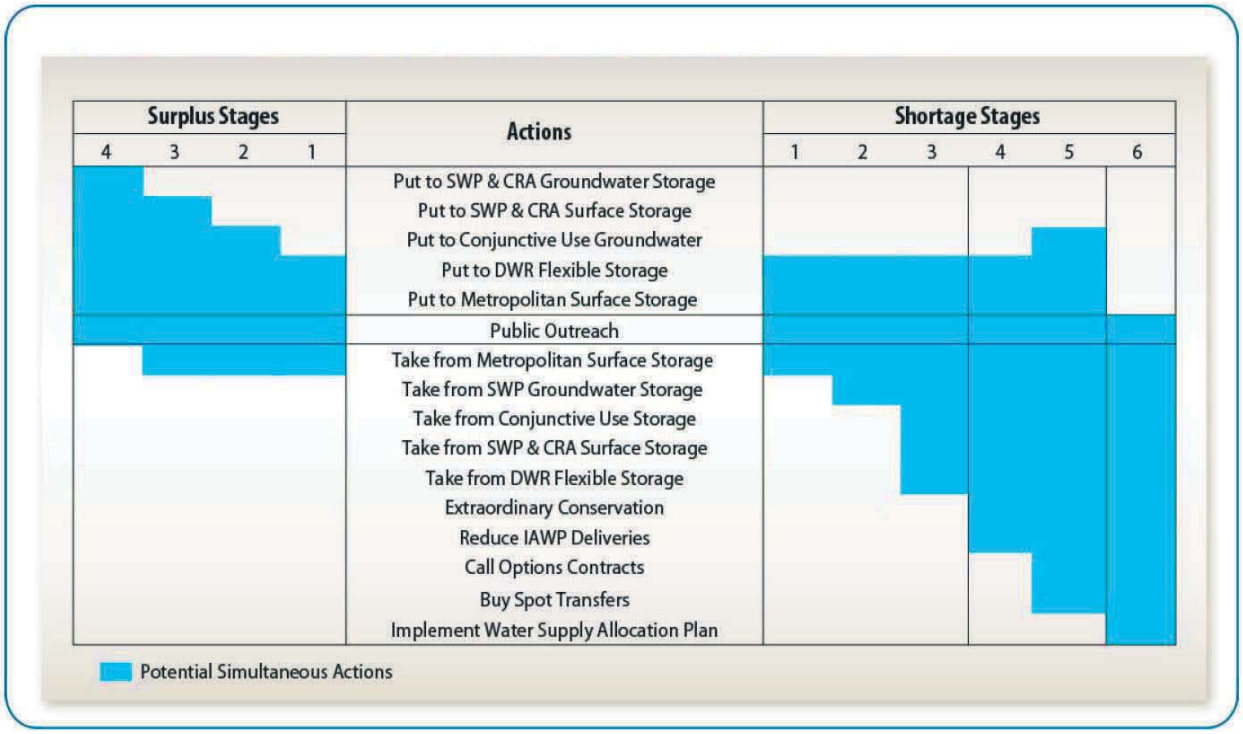


Figure 5-1: Resource Stages, Anticipated Actions, and Supply Declarations

Metropolitan's Board of Directors adopted a Water Supply Condition Framework in June 2008 in order to communicate the urgency of the region's water supply situation and the need for further water conservation practices. The framework has four conditions, each calling increasing levels of conservation. Descriptions for each of the four conditions are listed below:

- Baseline Water Use Efficiency: Ongoing conservation, outreach, and recycling programs to achieve permanent reductions in water use and build storage reserves.
- Condition 1 Water Supply Watch: Local agency voluntary dry-year conservation measures and use of regional storage reserves.
- Condition 2 Water Supply Alert: Regional call for cities, counties, member agencies, and retail water agencies to implement extraordinary conservation through drought ordinances and other measures to mitigate use of storage reserves.
- Condition 3 Water Supply Allocation: Implement Metropolitan's WSAP

As noted in Condition 3, should supplies become limited to the point where imported water demands cannot be met, Metropolitan will allocate water through the WSAP (Metropolitan, 2015 Final UWMP, May 2016).

5.2.2 Metropolitan Water Suppl y Allocation Plan

Metropolitan's imported supplies have been impacted by a number of water supply challenges as noted earlier. In case of extreme water shortage within the Metropolitan service area is the implementation of its WSAP.

Metropolitan's Board of Directors adopted the WSAP in February 2008 to fairly distribute a limited amount of water supply and applies it through a detailed methodology to reflect a range of local conditions and needs of the region's retail water consumers.

The WSAP includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering an allocation. Metropolitan's WSAP is the foundation for the urban water shortage contingency analysis required under Water Code Section 10632 and is part of Metropolitan's 2015 UWMP.

Metropolitan's WSAP was developed in consideration of the principles and guidelines in Metropolitan's 1999 WSDM Plan with the core objective of creating an equitable "needs-based allocation". The WSAP's formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of Metropolitan supplies of up to 50 percent. The formula takes into account a number of factors, such as the impact on retail customers, growth in population, changes in supply conditions, investments in local resources, demand hardening aspects of water conservation savings, recycled water, extraordinary storage and transfer actions, and groundwater imported water needs.

The formula is calculated in three steps: 1) based period calculations, 2) allocation year calculations, and 3) supply allocation calculations. The first two steps involve standard computations, while the third step contains specific methodology developed for the WSAP.

Step 1: Base Period Calculations – The first step in calculating a member agency's water supply allocation is to estimate their water supply and demand using a historical based period with established water supply and delivery data. The base period for each of the different categories of supply and demand is calculated using data from the two most recent non-shortage fiscal years ending 2013 and 2014.

Step 2: Allocation Year Calculations – The next step in calculating the member agency's water supply allocation is estimating water needs in the allocation year. This is done by adjusting the base period estimates of retail demand for population growth and changes in local supplies.

Step 3: Supply Allocation Calculations – The final step is calculating the water supply allocation for each member agency based on the allocation year water needs identified in Step 2.

In order to implement the WSAP, Metropolitan's Board of Directors makes a determination on the level of the regional shortage, based on specific criteria, typically in April. The criteria used by Metropolitan includes, current levels of storage, estimated water supplies conditions, and projected imported water demands. The allocations, if deemed necessary, go into effect in July of the same year and remain in effect for a 12-month period. The schedule is made at the discretion of the Board of Directors.

Although Metropolitan's 2015 UWMP forecasts that Metropolitan will be able to meet projected imported demands throughout the projected period from 2020 to 2040, uncertainty in supply conditions can result

in Metropolitan needing to implement its WSAP to preserve dry-year storage and curtail demands (Metropolitan, 2015 UWMP, May 2016).

5.2.3 City of Fullerton

The City's Water Supply Shortage Conservation Plan (WSSCP) was established to provide procedures, rules and regulations for mandatory conservation to minimize the effect of a water supply shortage emergency on the City's water customers. The City Council will vote to implement the WSSCP if it finds and determines one or more of the following: a shortage could exist due to increased demand or limited supplies; storage or distribution facilities of the City become inadequate; a major local or regional supplier experiences a major failure or contamination; or the City's wholesale water providers call for an allocation of water supply combined with a penalty rate and/or extraordinary water conservation measures. When a water shortage appears imminent, the City Manager shall notify the City Council and recommend holding a public hearing to determine whether a shortage exists and determine the appropriate phase of the water supply shortage.

There are four shortage phases and supply conditions. The water supply conditions for the phases to be implemented include:

- Increased demand or limited supply
- Distribution or storage facilities of the City become inadequate
- A major failure or contamination of the supply
- Shortage
- Failure of storage and/or distribution facilities of Metropolitan, OCWD, and/or the City occurs
- The City's whole sale water providers, Metropolitan and OCWD, call for an allocation of water supply combined with an allocation penalty rate
- Other extraordinary water conservation measures

A summary of the stages of water shortage is displayed in Table 5-1 (Fullerton, Municipal Code Chapter 12.06, 2008).

Table 5-1: Stages of Water Shortage Contingency Plan

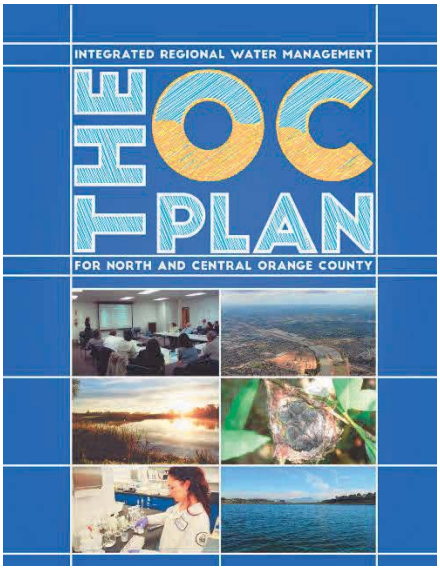
Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction[1]	Water Supply Condition
1	Up to 10 %	The City may determine that a Phase I "Mild Water Shortage" exists when there is reasonable probability that the City will not be able to meet all of the water demands of its customers or the City's wholesale water providers call for a water supply reduction as described in the City's Ordinance No. 3118, Phase I Water supply shortage.
2	Up to 20 %	The City may determine that a Phase II "Moderate Water Shortage" exists when there is an increase in demand or a decrease in supplies, a distribution or storage facilities of the City become inadequate, a major failure or contamination of the supply, storage, and/or distribution facilities of Metropolitan, OCWD, or the City occurs, or the City's wholesale water providers call for a water supply reduction of up to 20% in aggregate as described in the City's Ordinance No. 3118, Phase II Water supply shortage.
3	Up to 30 %	The City may determine that a Phase III "Severe Water Shortage" exists when due to a prolonged drought or other water supply conditions, a water supply shortage or threatened shortage exists and a water demand reduction is necessary to make more efficient use of water as an appropriate response to existing water conditions, or when the City's wholesale water providers call for a water supply reduction of up to 30% in aggregate as described in the City's Ordinance No. 3118, Phase III Water supply shortage.
4	31 - 50%	The City may determine that a Phase IV "Water Shortage Emergency" exists when there is a water shortage emergency due to a prolonged drought, a declared "State of emergency" or other water supply conditions and that a significant reduction in water demand is necessary to maintain sufficient water supplies for public health and safety or the City's wholesale water providers call for a water supply reduction of 31% or greater in aggregate as described in the City's Ordinance No. 3118, Phase IV Water shortage emergency.
[1] One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		

5.3 Three-Year Minimum Water Supply

As a matter of practice, Metropolitan does not provide annual estimates of the minimum supplies available to its member agencies. As such, Metropolitan member agencies must develop their own estimates for the purposes of meeting the requirements of the Act.

Section 135 of the Metropolitan Water District Act declares that a member agency has the right to invoke its "preferential right" to water, which grants each member agency a preferential right to purchase a percentage of Metropolitan's available supplies based on specified, cumulative financial contributions to Metropolitan. Each year, Metropolitan calculates and distributes each member agency's percentage of preferential rights. However, since Metropolitan's creation in 1927, no member agency has ever invoked these rights as a means of acquiring limited supplies from Metropolitan.

THE OC PLAN



Integrated Regional Water Management for the North and Central Orange County Watershed Management Areas

March 2018

Table 3-3: Statewide Resource Management Strategies Relevant to North and Central OC IRWM Region

2013 California Water Plan Resource Management Strategies	North and Central OC IRWM Plan Objectives														
	1 - Water Supplies		2 - Water Quality		3 - Ecosystems and Habitat		4 - Flood Management		5- Quality of Life			6 - Address Climate Change			Not Applicable to Region
Management Objectives - RMS	WS-1	WS-2	WQ-1	WQ-2	ECO-1	ECO-2	FM-1	FM- 2	QL-1	QL-2	QL-3	ACC-1	ACC-2	ACC-3	
Outreach and Engagement	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
Water and Culture	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
Water-Dependent Recreation			√	√	√	√		√	√	√	√		√	√	
Other Strategies															
Crop idling, dewvaporation/ atmospheric pressure desalination, fog collection, irrigated land retirement, rainfed agriculture, snow fences, and waterbag transport/storage technology															√

3.3 Water Management Issues

The following presents the primary issues that provided the foundation for establishing the regional Goals and Objectives in Sections 3.4 and 3.5:

Demand for potable water exceeds local water supplies; therefore, supplemental water is needed.

b. Although the Region has made great strides in water conservation and management, there is still a gap between local demand for potable water and local supplies and expanded use of recycled water.

c. Continuing awareness and education of the significance of imported water reliability to the Region is vital.

d. – residential and commercial structures, the demand for potable water to fight Local water suppliers maintain capacity in storage for fire suppression.

The OC Plan stakeholders identified six connected goals within the Region in **Figure 3-1:**

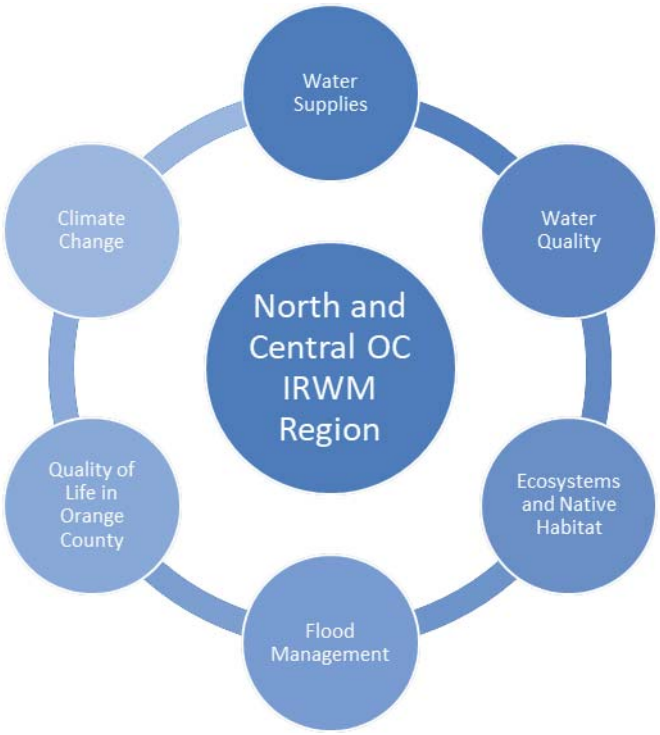


Figure 3-1: The OC Plan Goals

The desired outcomes in The OC Plan regional goals include the following:

GOAL 1. Provide Adequate and Reliable Water Supplies

d local potable and recycled water supplies, maximized water conservation and water use efficiency groundwater resources, and optimized operation of water systems and use of imported water.

Outcome: Protected and improved water supply reliability.

GOAL 2. nd Enhance Water Quality

for all communities in the R through improved and sustained water quality.

roved water quality within the Region consistent with the Santa Ana Region Basin Plan.

Agency	Project Title	Primary Project Goal	Project Description	Project Status	Completion Date	Project Total Cost	Potential Regional Project
City of Anaheim	Modjeska Park Detention Basin	Flood Management	Creation of a detention basin in Modjeska Park to address flood management, while also providing an opportunity to infiltrate some storm water into the ground water basin, addressing water quality, and allow the opportunity to include recreational ameniti	In Design	March, 2021	$3,200,000	Yes
City of Anaheim	Boysen Park Detention Projects	Flood Management	Installation of underground chambers to capture stormwater runoff from parking lot and for treatment and infiltration, and/or reconstruction of the park to lower areas and connect to the top of a County storm drain box to allow peak flow to drain to the p	Planning	2022	$2,000,000	Yes
City of Anaheim	Anaheim Hills Golf Course Constructed Wetland	Water Quality	A future reconfiguration of the Anaheim Hills Golf Course to include a constructed wetland water feature as well as a water reclamation system.	Planning	2022	$3,000,000	Yes
City of Cypress	Installation of Automatic Rectrable Screens at Various Catch Basin Locations	Water Quality	Installation of automatic retractable screens at various catch basins throughout the city.	Planning	F Y 2018/2019	$18,200	No
City of Fullerton	West Coyote Hills Land Acquisition and Protection	Ecosystems and Nativ	Acquire open space	Shovel Ready	December 2020	$34,000,000	Yes
City of Fullerton	Main Plant Water Well #7 Replacement	Water Supply	Drill new large capacity well	Planning	December 2020	$4,000,000	No
City of Huntington Beach	Trash Removal Project - Phase I	Water Quality	Design and installation of trash/debris removal device (Contech CDS unit)	Planning	2020	$200,000	No
City of Huntington Beach	Trash Removal Project - Phase II	Water Quality	Design and installation of trash/debris removal device (Contech CDS)	Planning	2021	$200,000	No
City of Newport Beach	San Diego Creek Diversion/Trash Removal Project	Water Quality	This project would mirror the Santa Ana-Delhi Channel Diversion project to (1) capture all dry weather trash and trash from a first flush storm, and (2) divert nuisance flows to OCSD for eventual use in the Groundwater Replensishment System.	Planning	7/1/2023	$10,000,000	Yes
City of Orange	Orange Trash Capturing Devices	Water Quality	Install trash capturing devices citywide to meet state Trash Provision requirements	Planning	2028	$2,500,000	No
City of Santa Ana - Public Works Department	City of Santa Ana street drainage and water quality improvement project	Water Quality	The City of Santa Ana street improvement focuses on water quality and drainage issues with an emphasis on capture and reuse opportunities.	Planning	2024	$30,000,000	Yes
City of Tustin	Citywide Installation of Catch Basin BMPs and/or CDS units	Water Quality	Installation of catch basin inserts and screens such as CPS units citywide	Shovel Ready	ongoing	$200,000	Yes
City of Tustin	Irvine Boulevard Storm Drain Improvements	Flood Management	Add several catch basins to eliminate flooding on Irvine Boulevard	Planning		$7,800,000	No
City of Tustin	Newport Avenue Extension	Flood Management	Extend Newport Avenue from Edinger to Sycamore	Planning			Yes
City of Tustin	Emergency Operations Center and City Corporate Yard	Water Quality	Construct new parking lot with swales and modular wetland and solar panels.	Planning		$15,830,418	No

Appendix B. Letters of Project Commitment and Support

1. Santa Ana Watershed Authority
2. Orange County Water District
3. Orange County Board of Supervisors

Santa Ana Watershed Project Authority
OVER 50 YEARS O INNOVATION, VISION, AND WATERSHED LEADERSHIP

March 13, 2019

Darion Mayhorn
Bureau of Reclamation
Policy and Administration
Mail Code: 84-51000
P.O. Box 25007
Denver, CO 80225

RE: BOR WaterSMART Drought Response Program
Drought Resiliency Projects for Fiscal Year 2019
Fullerton, CA Application for Main Plant Water Well #7A

Dear Mr. Mayhorn:

On behalf of the Santa Ana Watershed Project Authority (SAWPA), I am pleased to offer support for the City of Fullerton's Main Plant Water Well #7A Construction Project for the Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2019.

The Santa Ana River Watershed is facing threats to water supply and quality not only because of the past drought, but also because of climate change, growing demands on the Colorado River, and the Sacramento-San Joaquin Delta vulnerability. Through the collaboration and development of regional partnerships, we'll respond to these challenges and create a sustainable Santa Ana River Watershed. Our vision is a drought-proofed, salt balanced Watershed that will support economic and environmental viability by the year 2030.

In an effort to address these challenges, SAWPA, its member agencies – including the City of Fullerton, and watershed stakeholders continue to work together under the integrated regional water management plan described as One Water One Watershed (OWOW). The OWOW Plan describes shared goals for the Santa Ana River watershed, and the strategies most needed to achieve those goals. The OWOW Plan also serves as the Integrated Regional Water Management (IRWM) Plan for the Santa na funding region. The IRWM Program, administered by the California Department of Water Resources, supports regional planning and competitive implementation grants drawn from general obligation bond proceeds.

Fullerton's Main Plant Water Well #7A Construction Project is included in the OWOW Plan Update 2018 and will help achieve the following Plan goals:

- Achieve resilient water resources through innovation and optimization
- Ensure high quality water for all people and the environment
- Educate and build trust between people and organizations

11615 Sterling Aven e, Riverside, CA 92503 | 951.354.4220 | www.sawpa.org

The City of Fullerton's Well #7A construction project will enable the City to activate a new well that will be capable of pumping water from a much deeper groundwater zone free from industrial solvents and other contaminants. The proposed project is essential for achieving greater levels of water supply and reliability. By ensuring reliable water supplies in advance of a crisis, water purveyors throughout the region will be able to respond to an emergency drought situation much more quickly, thereby enabling a more efficient response to address and mitigate the economic and environmental costs of hauling emergency water.

Thank you for the opportunity to provide this letter of support for the City's important grant application. I hope you agree this project is worthy of funding as it is directly aligned with the goals of SAWPA and the Bureau of Reclamation.

Sincerely,

Richard E. Haller, P.E., ENV SP
General Manager

ORANGE COUNTY WATER DISTRICT

ORANGE COUNTY'S GROUNDWATER AUTHORITY

March 20, 2019

Mr. Darion Mayhorn
Bureau of Reclamation
Mail Code: 84-51000
P.O. Box 25007
Denver, CO 80225

RE: Letter of Support Fullerton Main Plant Water Well 7A Drought Resiliency Projects for Fiscal Year 2019

Dear Mr. Mayhorn:

The Orange County Water District (OCWD) is pleased to support funding opportunities for the City of Fullerton's Main Plant Water Well 7A Construction Project and grant application for the Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects.

The City of Fullerton receives its local well water from the Coastal Plain of Orange County groundwater basin, which is managed by OCWD. As a member agency of OCWD, the Fullerton City Council appoints a representative to serve as one of OCWD's 10 board members. OCWD's mission to provide an adequate, reliable, high-quality water supply at the lowest reasonable cost in an environmentally responsible manner. To accomplish this, OCWD manages and replenishes the basin, ensures water reliability and quality, prevents seawater intrusion, and protects Orange County's rights to Santa Ana River water. The 270-square-mile basin provides approximately 75 percent of the water supply to more than 2.5 million residents in north and central Orange County.

There are five member agencies of the Santa Ana Watershed Project Authority (SAWPA) that are participating in a regional groundwater banking program known as the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP). This program, partially funded with a Proposition 84 grant, will provide a collaborative, watershed-scale approach toward long-term groundwater basin management, replenishment and water transfers, allowing the five agencies to collectively plan for extended dry periods while also conducting habitat restoration and assisting with the development of regional long-term water use efficiency programs. One key element of SARCCUP is banking 36,000 acre-feet of water in the Orange County groundwater basin to be used during dry years. To extract this water, OCWD is working to provide grant funding to assist several groundwater producers in constructing additional production wells to remove this banked water during dry periods.

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

OCWD is considering funding the City of Fullerton's additional production well, Well 7A. The City's proposed project will replace Well 7, which has not been consistently online since April 2014 due to poor water quality and production, with a newly constructed well, Well 7A. Well 7A will also be located at the City's Main Plant and will be designed and constructed to produce the highest quality potable water possible in accordance with all federal, state, and local regulations.

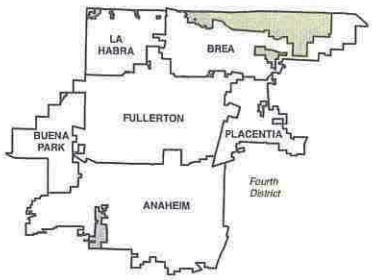
In addition to providing increased system reliability for the City, well 7A, if part of SARCCUP, will be used to extract banked SARCCUP water in the groundwater basin to meet overall demands during dry years. OCWD is committed to sound planning for our regional water supplies. Continued growth in our region elevates the importance of integrated water management and water banking to be ready for the inevitable dry years ahead. We encourage your partnership and funding to help us accomplish this much needed project.

Sincerely,

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

DOUG CHAFFEE
ORANGE COUNTY BOARD OF SUPERVISORS
SUPERVISOR, FOURTH DISTRICT

ORANGE COUNTY HALL OF ADMINISTRATION
333 W. SANTA ANA BLVD.
SANTA ANA, CALIFORNIA 92701
PHONE (714) 834-3440 FAX (714) 834-2045
doug.chaffee@ocgov.com
bos.ocgov.com/fourth



March 13, 2019

Bureau of Reclamation
Policy and Administration
Attn: Mr. Darion Mayhorn
Mail Code: 84-51000
P.O. Box 25007
Denver, CO 80225

RE: City of Fullerton's Application for the BOR Drought Response Grant Program

Dear Mr. Mayhorn:

I am pleased to support the City of Fullerton's application requesting funding for replacing Well 7 with a newly constructed Well 7A. It is my understanding that the project will increase the City's water supply and resiliency to drought. Identifying and securing additional local water sources supports drought planning efforts and improves the City's ability to continue to deliver water to Fullerton residents and its regional neighbors during times of low water supply. It will also help reduce our region's overall reliance on imported water sources which face multi-jurisdictional demands.

The project will mitigate the need for costly emergency water hauling should a water emergency arise. I wholeheartedly support the project and recognize the value of this project and its multiple benefits, which include:

- Regional resiliency to drought;
- Increasing the reliability/flexibility of water supplies; and
- Avoiding the need for emergency response actions, such as water hauling.

I know that grant funding will be critical to enable the City of Fullerton to implement this project. I trust you will favorably consider helping fund this project.

Sincerely,

Doug Chaffee

Supervisor Doug Chaffee
Orange County Board of Supervisors, 4th District

Appendix C. Resolution

DRAFT: For City Council Approval on April 16, 2019
City to provide executed copy with application due March 27, 2019, or no more than 30 days after deadline.

RESOLUTION NO. 19-03-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FULLERTON, CALIFORNIA, SUPPORTING AN APPLICATION TO THE DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION FOR THE WATERSMART GRANTS: DROUGHT RESILIENCY PROJECTS FOR FISCAL YEAR 2019 FOR WELL #7A CONSTRUCTION

WHEREAS, the Public Works Department has submitted an application for federal funding from the United States Department of the Interior, Bureau of Reclamation ("Reclamation") to assist in the funding of the Drought Resiliency Project; and

WHEREAS, the funding opportunity is provided by Reclamation through their Grant Program entitled "WaterSMART Grants: Drought Resiliency Projects for Fiscal Year 2019" ("Grant"); and

WHEREAS, the Well #7A Construction ("Project") is expected to produce an average of 4,850 acre-feet per year of drinking water to supplement local drinking water supplies; and

WHEREAS, the City of Fullerton ("City"), if selected for Grant award, will accept the Grant and enter into an agreement with Reclamation to carry out the Project.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF FULLERTON HEREBY RESOLVES AS FOLLOWS:

1. The City Council has reviewed and supports the Grant application for the Project.

2. The City of Fullerton will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

3. The City of Fullerton certifies that it is capable of providing the amount of funding specified in the funding plan related to the Grant application.

4. The City Manager is authorized to enter into any agreement related to the Grant.

ADOPTED BY THE FULLERTON CITY COUNCIL ON APRIL 2, 2019.

DRAFT: For City Council Approval on April 2, 2019
City to provide executed copy with application due March 27, 2019, or no more than 30 days after deadline.

_____
Jesus Silva, Mayor

ATTEST

_____
Lucinda Williams, City Clerk

Date: _____