VanderWerff Well Construction Project

WaterSMART: Drought Response Program Grant Proposal

by East Orange County Water District

Funding Group I

Bureau of Reclamation – WaterSMART Grants:

Drought Response Program for Fiscal Year 2021

BOR-DO-20-F002

Prepared for:

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Background Data and Project Location

Background Data

Created in 1961, the East Orange County Water District encompasses an area of approximately 10,000 acres and functions as a wholesale water supplier ("Wholesale Zone"), a retail water supplier ("Retail Zone") and a retail wastewater operator ("Sewer Zone"). The District's ervice area encompasses 10,000 acres and is located adjacent to the foothill area of northeastern Orange County (Figure 1).

Figure 1. EOCWD Service Area

EOCWD operates under the County Water District Law, which is contained in Division 12 of the California Water Code, Sections 30000 - 33901. An independent special district, EOCWD is governed by a Board of Directors elected to four-year terms by the voters within the District. The Wholesale Zone serves part of the cities of Tustin and Orange, parts of the Irvine Ranch Water District and Golden State Water Company, and the entire EOCWD Retail Zone.

In July of 1985, EOCWD assumed the operations of the County of Orange's Waterworks District No. 8 (OWWD#8), which until that time had been one of the District's sub agencies (it should also be noted that OWWD#8 acquired the water system in 1951 from the El Modena Mutual Irrigation

Company). Upon acquisition of this water system, it was named the District's "Retail Zone" to distinguish it from the wholesale operation.

The District also acquired the local wastewater distribution system in 2016 from Orange County Sanitation District. The Sewer Zone is comprised of 175 miles of sewer pipelines that vary in size from 8"- 30" and serve a population of approximately 75,000 through 19,000 lateral connections.

Source of Water Supply and Water Rights

The EOCWD Retail Zone obtains water from two water sources: treated imported water from the Metropolitan Water District of Southern California's (MWD's) Diemer treatment plant via the District's Wholesale Zone, and groundwater from the Orange County Water District Groundwater Basin. As a member of OCWD, the District has a right to pump a safe percentage of its demand annually, however, currently both of EOCWD's groundwater producing wells are offline due to PFAS related contamination concerns. As a result, the District has been 100% reliant on imported water since May 11, 2019. The imported water is primarily derived from the Colorado River Project and the State Water Project.

Current and Projected Water Demand/Use

The current average water demand over the past six years for the retail customers served by EOCWD is approximately 830 acre-feet per year (AFY). The Retail Zone is characterized by large residential lots and up until 2019, this area was considered largely built out. Projected water demand is expected to increase as unanticipated additional development is occurring due to the State's 2019 adoption of SB13, AB68 and AB 881, which provide that up to four Accessory Dwelling Units (ADUs) can be added to a property without local land planning authority approval. Some of the additional demand will be offset in a concurrent reduction in landscape irrigation, but it is unknown whether it will be a one-to-one or some other fractional tradeoff.

The Retail Zone's water demand is approximately 96% residential and 4% commercial/industrial/ institutional (including dedicated landscape irrigation). Over the past four years, the District's water demand has decreased by an average of 33% despite increasing population due customer effort in response to requests for continued conservation after the 2015-2016 Drought. This level of conservation is expected to continue and may increase further as the indoor and outdoor conservation requirements mandated in SB606 and AB1668 are implemented. Although the District has already met its SB7x-7, 20% water demand reduction (from a historical baseline) by 2020, as noted above, we don't yet fully understand what this may mean in terms of water demand in the near term. The District is in the process of commencing the preparation of our 2020 Urban Water Management Plan where we anticipate having our consultant include a focused look at this issue.

Historic 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.

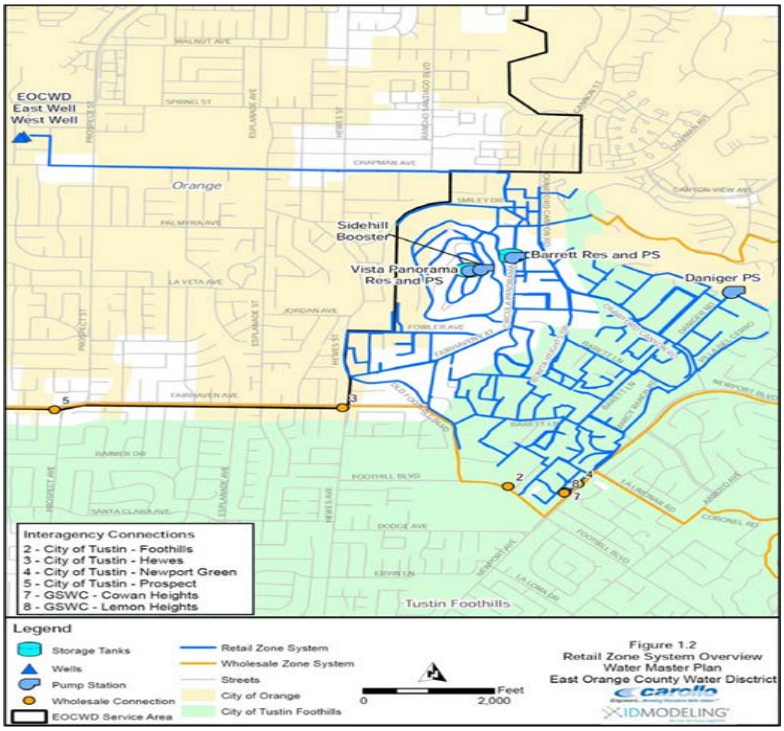
Retail Zone Facilities

Included among the Retail Zones assets are the following specific facilities:

- Two domestic potable water wells (constructed in 1926 and 1948 respectively) including pumps and related equipment
    - ***Currently offline due to concerns with (per- and polyfluoroalkyl substances) PFAS contamination***
- An on-site chlorine generator (at the wells)
- Three storage reservoirs including a 0.25 MG steel tank, a 0.1 MG concrete reservoir and a 1.5 MG capacity ownership in the Wholesale Zone's 11.5 MG Reservoir
- A hydro-pneumatic tank
- Three pump stations including one located at the 0.25 MG reservoir site; a second one located at the 0.1 MG reservoir site; and a third fire pump station that is activated during high flow conditions
- Approximately 25 miles of transmission and distribution piping varying in diameter from 6-inches to 16-inches including miscellaneous underground vaults and appurtenances
- Two connections to the District's Wholesale Zone system
- An emergency connection to the City of Orange water system
- 1,215 water meter connections to retail customers
- An administrative office building, warehouse, and a corporation yard, all located in the City of Orange.

The location of the specific Retail Zone water facilities is shown in Figure 2.

Figure 2: EOCWD Retail Zone Facilities



District Facilities Summary

Retail Zone

- Serves population of 3,300
- Provides water to 1,200 metered customer connections
- 2 million gallons per day maximum capacity
- 25 miles of distribution pipes ranging from 6”-16” in diameter
- 1 disinfection facility
- 3 reservoirs with storage capacity of 1.85 million gallons
- 3 pump stations
- 2 inactive wells
- 2 connections to imported water system (Wholesale Zone)
- 1,215 service connections/meters
- 1 emergency interconnection with another agency
- 85 backflow preventers
- Water Data Validity Score 66 out of 100 with total volume loss of 19.42 AFY (CY 2018)

Wholesale Zone

- Serves population of 90,000
- Provides water for 5 agencies through 15 metered connections
    - City of Orange
    - City of Tustin
    - Golden State Water Company
    - Irvine Ranch Water District
    - EOCWD Retail Zone
- 17 million gallons per day maximum capacity
- Average of 5,000 AFY total water demand by retail customers
- 13 miles of distribution pipelines ranging from 12”-27” in diameter
- 3 reservoirs with storage capacity of 19 million gallons
- 1 pump station
- 1 booster disinfection facility
- 3 active treated water MET connections
- 1 inactive untreated water MET connection
- 15 service connections/meters
- 2 emergency interconnections with other agencies

Sewer Collection System

- Serves population of 75,000
- 175 miles of pipeline ranging from 6”-30” in diameter
- Approximately 6 million gallons per day collected
- 0 pump stations
- 19,000 lateral connections/customers

Technical Proposal and Evaluation Criteria

Executive Summary

Date:	August 5, 2020
Applicant Name:	East Orange County Water District
City:	Orange
County:	Orange
State:	California

Project Summary: East Orange County Water District (EOCWD, District) requests $500,000 toward the drilling and construction of a new potable water well with high capacity pumps, motors, discharge piping, and electrical equipment. **The proposed project will supplement local drinking water supplies and is estimated to produce approximately 625 acre feet per year (AFY) of potable water for our retail water customers, or up to 2,900 AFY when used for drought protection/conjunctive use Over the 75-year life of the well, it would have the potential to produce a total average demand of 46,875 AF and up to 217,500 AF, if used for drought protection/conjunctive use at maximum capacity over the 75-year life of the well.**

The new well, known as the VanderWerff Well, will produce approximately 75% of the District's annual average demand of 830 AFY. The proposed project will supplement local drinking water supplies and will ultimately replace a circa 1926 non-operating well (West Well) with known contaminants. The goals of this project are to: 1) improve access to reliable sources of local water supplies; 2) mitigate impacts caused by drought; and 3) pump daily water demands during off-peak power thus lessening demand on the electrical grid; 4) reduce imported water demands, and 5) show customers that we are providing them with high quality safe drinking water.

For the past year, we have been unable to fully access our groundwater supply due to groundwater contaminants and ultimately, poor water production from the 1926 West Well, whose production has fallen to below 450 gpm. We have an existing 1948 East Well, but it's production has fallen below 1,000 gpm and is also shut down due to groundwater contamination. The Project proposes to construct a new 1,500-1,800 gpm well and water treatment system (not part of this grant request) that will provide the five benefits enumerated in the prior paragraph.

In 2019 the District took both groundwater producing wells offline due after testing positive for PFAS contamination above the Notification Level. As a result, the vast percentage of water that has been delivered to our retail customers has been imported water from the State Water Project or the Colorado River Aqueduct.

Therefore, the groundwater production percentage of the District falls short of the Basin Production Percentage (BPP) OCWD has set over the past few years because the District has had

wells shut down due to water quality issues and the poor pumping performance. The new VanderWerff Well will increase the capacity to draw from the local aquifer and reduce dependency on imported supplies, which are more expensive and sensitive to drought conditions. Additionally, during times of drought and plentiful water, the well can be operated conjunctively for the benefit of all groundwater producers by pumping stored water in excess of the BPP. EOCWD has historically been able to participate in this program, but under the current operating scenario, may not be able to without the VanderWerff well.

Project Timeline: The project is scheduled to start by September 2020 (not grant related) and be completed by September 2022.

Location: This project is not located on a Federal facility and is anticipated to reduce the District's demand on the Boulder Canyon Project and the Parker-David Projects, as well as indirectly reducing demand on the Central Valley Project through reduced Delta imports; all of these projects are Reclamation facilities.

The Project is in Orange County, California within the service area of EOCWD. The District is bounded to the west by the 55 Freeway, to the south by Dyer Road, to the east by Jamboree Road and to the north by Santiago Canyon Road. It encompasses approximately 10,000 acres with 50% in the unincorporated area of the County and 50% within the city limits of Orange and Tustin.

It is anticipated that the VanderWerff well will be located at 210 N. McPherson Road, Orange, California across the street from the District's Administration and Operations Facilities; latitude 33º78' N and longitude 117º 82' W The property totals 11,580 sq. ft. is vacant and was formerly used to house the District's sewer trucks and a small administration building. The property is immediately adjacent to a storage facility with apartments located across the street, as well as the aforementioned administrative and operations facilities of the District.

The recommended location for the VanderWerff Well was determined based upon:

- Proximity to nearby production wells and infrastructure.
- Drilling rig access
- Adequate space to drill the well and equip it
- Adequate space for PFAS treatment system, backup power and chemical storage facility.
- Proximity to the storm drain catch basin
- District owns fee title to the property.

In consideration of these criteria, the best location for the VanderWerff well is in the Northeast area of the property. It is the furthest point away from the two existing wells across the street; there is adequate room to drill and construct the well – rig access is good and better than the alternate studied well site. It can also be easily connected to the existing distribution pipeline.

Past Working Relationship with the Bureau of Reclamation

The District imports, on average, 21-25% of its retail water supply from the Colorado River Project (a Reclamation Project) and State Water Project through purchases from the Metropolitan Water District of Southern California.

Technical Project Description

The major project milestones include:

- Phase I - Well Drilling
  - Completion of Final Design
  - Complete Mitigated Negative Declaration for New Well
  - Construction
- Phase II - Well Equipping
  - Completion of Preliminary Design
  - Completion of Final Design Report
    - Construction

The District will construct a new municipal well, the VanderWerff Well, across from the District's administrative and operations center, which will be designed and constructed to produce the highest quality of potable water possible in accordance with all federal, state, and local regulations. The VanderWerff Well will be used to supply potable water to the District's distribution system. The well will be completed to a depth of between 750-800 feet and will be equipped with a new vertical turbine pump that produces between 625-2,900 AFY without impacting the production of the other active wells near this site. The well will be located in the northeast portion of the 210 N. McPherson property as shown in Figure 2. This location was selected to minimize pumping interference from the existing East Well. The VanderWerff Well will be in an open-air facility enclosed with fencing and a gate system.

Figure 3: McPherson Well Site A (VanderWerff Well)

The preliminary well design of the VanderWerff Well, shown in Figure 3 , 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
- 20-inch diameter HSLA steel perforated casing
- Perforations consisting of horizontal louvers with 0.09-inch slots
- One 2-inch diameter mild steel sounding tube connecting to the blank casing
- One 3-inch diameter mild steel gravel feed tube
- A 50-ft deep conductor casing and sanitary seal.
- One 2-inch diameter air vent pipe.
- An annular sand-cement seal to prevent migration of groundwater with poor water quality downward through the annulus.

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.

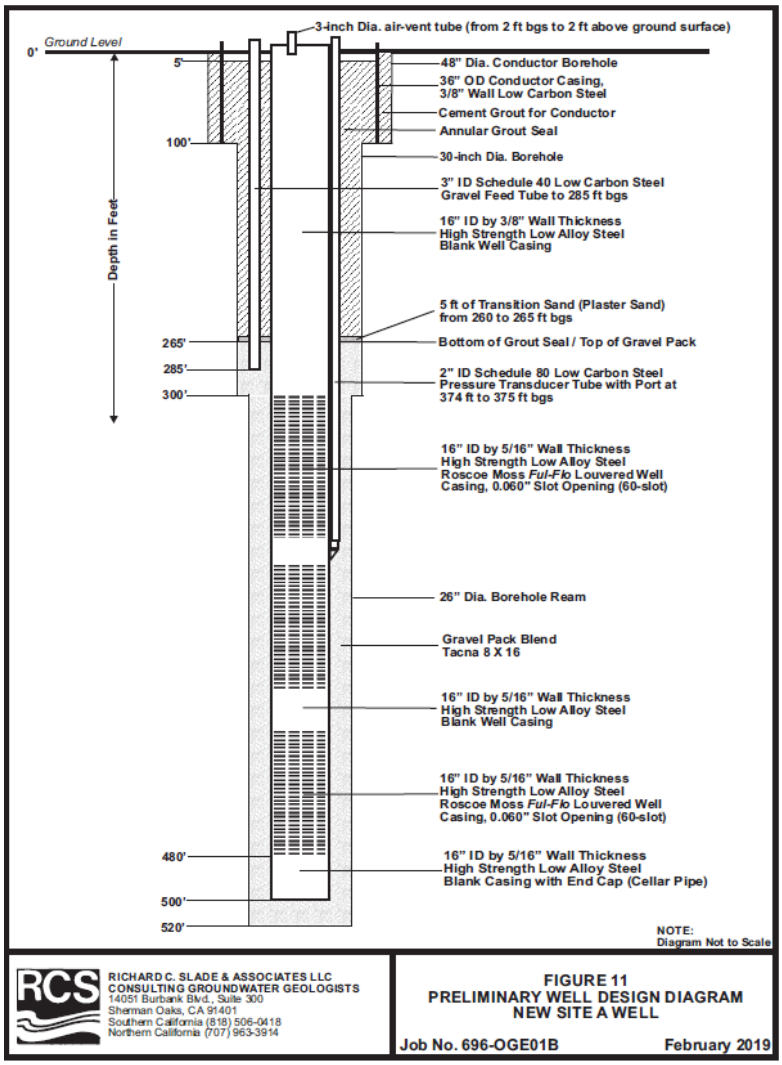


Figure 3: Well Design

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)

Performance Measures

The proposed project has been designed to achieve specific performance and sustainability measures that include the following:

Water Supply Reliability. The District will measure performance by the reliability to efficiently and consistently deliver an annual average of 625 AFY of water (or up to 2,900 AFY during conjunctive use periods) through the new well. The proposed project will increase the reliability of the current water supply by replacing a currently non-operable, declining performance well, and providing an additional water source for the District's 1,200 customers. Water supplies will be measured by the total volume of water flowing through the structures. The District will utilize pre- and post-project water calculations to evaluate the project performance. Post-project performance will be measured by documenting the amount of time each pump motor operates, and the total volume of water discharged. The District will compare pre-project 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 District. 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 between 625 to 2,900 AFY, helping to improve operational efficiency and save the District money in operating a well structure that bolsters sustainability. Temperature and pH will also be measured in the field.

Evaluation Criterion A – Project Benefits

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

The project will build long-term resilience to drought by diversifying EOCWD's water supply portfolio. Currently, EOCWD is 100% reliant on imported water supplies due to the shutting down of its two groundwater production wells. The construction of a new well would decrease the District's dependence on drought vulnerable imported water supplies and continue to work on maximizing the use of local groundwater resources. Local groundwater is a major resource that the District is fortunate to have. However, without the proposed new well, EOCWD does not have access to these local reliable supplies.

California's water conservation and management tools for the State Water Project and the Colorado River are based on the assumption that individual regions and water suppliers become more self-sufficient by investing in best practices such as water conservation, water-use efficiency, water recycling, and groundwater supply and management.

Creation of the proposed new well will allow the District to be more self-sustainable and resilient during dry periods when imported water is not readily available. The proposed well is expected to have a useful life of 75 years and will be an integral part of EOCWD's useful assets and potable water system.

Will the project make additional water supplies available?

Yes. The new VanderWerff Well will ultimately replace a well which has declined in production capacity and that is currently inoperable due to contamination. The West Well is offline due to PFAS contamination and production has declined from 500 GPM to 350 GPM. The VanderWerff Well will be capable of producing 1,500-1,800 GPM (actual production will be determined during development of the well) of high-quality potable groundwater. At a time when water supply diversification is critical to the long-term success and ability to combat droughts, EOCWD needs to be able to access local water supplies as well as imported supplies to sustainably meet the long-term needs of the Retail and Wholesale Zone. With the completion of the VanderWerff Well, EOCWD will be able to make groundwater supplies available for its customers and will provide additional resilience to drought for the region.

If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years. What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?

The new VanderWerff Well will be capable of producing 1,500-1,800 gallons per minute or greater (actual production will be determined during development of the well), and yield between 625 – 2,900 AFY. The average annual benefit of the Well over a 10 year period is estimated to be 852 AFY, assuming that one year out of every 10 years, the well is used for conjunctive use purposes to draw stored water out and reduce imported supplies. The percentage of total water supply that the new VanderWerff Well will represent is 75-100%.

After the Well is constructed, EOCWD customers will benefit from a local, high-quality water source that is cost-efficient. The significance of this new source of water is extremely important as the District moves toward our goal of less dependence on imported water. The instability of imported water supplies is increasing, and the need for local, high-quality water for potable use is more important than ever before. This project will produce potable, high-quality water that is currently not available to our residents because the two existing groundwater producing wells are offline.

Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)?

By adding the VanderWerff Well, 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 District'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 District to meet dry period needs, thereby improving water supply management for the District's groundwater banking and management program. Since the water is a new local supply and is delivered directly into one of the District'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 the VanderWerff Well will be high and protective of water quality. 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.

Wells.—What is the estimated capacity of the new well(s), and how was the estimate calculated?

The anticipated capacity of the proposed VanderWerff Well is 650-2,900 AFY. This estimate is based on existing well pumping rates described below. Santiago Creek is the primary drainage for the northwest portion of the Santa Ana Mountains and ultimately drains into the Santa Ana River. Water from Santiago Creek is impounded by Santiago Dam (owned by the Serrano Water District and the Irvine Ranch Water District) and Villa Park Dam, a flood control facility (owned by the County of Orange Orange). Orange County Water District's (OCWD's) Santiago Basins are located downstream of Villa Park Dam. These former gravel pits contain a large percentage of the storage capacity within OCWD's recharge system. During average rainfall conditions, the District captures and recharges an estimated 50,000 to 70,000 AFY of storm flow, with much of this recharge taking place in the Santiago Basins. OCWD seeks to recharge as much water possible in the Santiago Basins subject to various operational constraints and limitations on the amount of available recharge water. Despite this, District wells with perforations between 300-330 ft. below ground surface (bgs) have experienced low groundwater levels when the amount of groundwater in storage declines; the VanderWerff well will have a deeper perforation interval than the existing District wells (520 ft. bgs) to limit the effects of fluctuating groundwater levels.

In order to evaluate the feasibility of a new well at either the District's 210 N. McPherson or 185 N. McPherson sites (185 N. McPherson hosts the existing wells as well as the District's administrative and operations functions), the District retained Richard C. Slade & Associates, a groundwater geological firm located in Sherman Oaks, California to examine the hydrogeologic conditions at and near the two proposed wells sites referenced above. The report is included as an attachment.

There are two, non-operational wells on the 185 N. McPherson Site: the 1948 East Well and the 1926 West Well. There are also two active production wells within one mile of the two sites: one is owned by the City of Orange and the other by the Irvine Ranch Water District. There are no surface water supplies nearby.

The proposed VanderWerff Well would be located in proximity to the existing wells (approximately 200 feet away). With a new well at 210 N. McPherson, the additional water level drawdown at the existing West Well could range from 4.6 ft after one day of continuous pumping, to 7.5 ft after 365 days of continuous pumping (or 3.1 ft to 6.0 ft with the higher storativity value), while the new well is pumping. With a new well at 210 N. McPherson, then the additional amount of water level drawdown that could be induced on water levels at the existing East Well might range from 4.4 ft after one day of pumping, to as much as 7.3 ft after 365 days of continuous pumping by that future well (or 2.9 ft to 5.8 ft with the higher storativity value), while the new well is pumping. Both of these scenarios would further reduce the performance and production of these wells, creating further unreliability, increased pumping inefficiencies and additional energy expenditures and costs.

Evaluation Criterion B – Drought Planning and Preparedness

The District's efforts to address drought and drought planning are contained throughout the District's 2015 Urban Water Management Plan (UWMP) and the District's Water Conservation

Ordinance. Section 5 - Water Shortage Contingency Plan of the UWMP focuses on drought planning and is included as an attachment. Drought planning is also addressed through Metropolitan's Water Surplus and Management Plan which provides regional context. Further, the VanderWerff Well 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). Attached to the application is the District's most recent Urban Water Management Plan as well as the adopted Water Conservation Ordinance, 5-year Strategic Plan and OWOW Plan.

Furthermore, EOCWD is currently finalizing a Hazard Mitigation Plan (HMP) consistent with the Federal Emergency Management Agency (FEMA) guidelines. The draft HMP lists drought as a considerable risk to the District's assets and operations. The HMP discusses the causes, severity, impacts, and vulnerabilities associated with drought as it related to EOCWD.

Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to prepare for and address drought will receive more points under this criterion

The District has taken extraordinary steps to plan for and operate during drought periods and their consequences, as evidenced by our District meeting our Governor mandated reduction of 36%. The District 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 District and the Metropolitan Water District of Southern California (Metropolitan) have in place to respond to events including catastrophic interruption and reduction in water supply. The District'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, the Board will implement the appropriate water conservation stage by resolution. As part of the water supply management strategy, the District's Water Conservation Ordinance was established to provide procedures, rules and regulations for mandatory conservation to minimize the effect of a water supply shortage emergency on the District's water customers. Further, in 2012, we implemented water budgets with our billing system. All customers were provided with indoor and outdoor water budgets that, if exceeded during a declared drought, result in surcharged being levied on the customer to induce reduced usage.

The District 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.

The District's Water Conservation ordinance declared that because of the water conditions prevailing in the State of California, the statewide drought and the declared policy of the state, it is necessary to minimize or avoid the effect and hardship of potential shortages of water to the greatest extent possible. Furthermore, the Ordinance implements permanent water conservation standards designed to alter behaviors related to water-use efficiency during non-shortage conditions, as well as establishes three levels of potential response to escalating water supply shortages as a result of worsening drought conditions, emergencies, and/or decreasing supplies.

Consistent with State law, EOCWD maintains an updated Urban Water Management Plan (UWMP) that includes a detailed summary of present and future water resources and demands

within the service area and assesses the District's water resource needs. Included within the UWMP is Metropolitan's Water Surplus and Drought Management Plan which provides regional context since EOCWD's wholesale water is purchased from Metropolitan Water District. EOCWD's drought planning and contingencies are consistent with Metropolitan's Drought Management Plan and are included in the Urban Water Management Plan.

Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process?

The District's 2015 Urban Water Management Plan Update was developed through a collaborative process and with input from multiple stakeholders. The District encouraged community and public interest involvement in the Plan update through a public hearing and inspection of the draft document on June 1, 2016 and June 8, 2016. Public hearing notifications were published in local newspapers and distributed through utility bills. The hearing provided an opportunity for all residents and employees in the service area to learn and ask questions about their water supply in addition to the District's plans for providing a reliable, safe, high-quality water supply. Copies of the draft plan were made available for public inspection at the District's office and at the City of Orange Main Library and the El Modena Branch Library.

The District's water supply planning relates to the policies, rules, and regulations of its regional and local water providers. The District is dependent on imported water from Metropolitan through MWDOC, its regional wholesaler. The District is also dependent on groundwater from OCWD, the agency that manages the Orange County Basin. As such, the District involved these water providers as well as its sub-agencies in the development of its 2015 UWMP at various levels of contribution.

Does the drought plan include consideration of climate change impacts to water resources or drought?

The 2015 Urban Water Management Plan Update in several sections addresses climate change and the future potential impacts on water supplies. As stated in the UWMP, changing climate patterns are expected to shift precipitation patterns and affect water supply. Unpredictable weather patterns will make water supply planning more challenging. The areas of concern for California include a reduction in Sierra Nevada Mountain snowpack, increased intensity and frequency of extreme weather events, and rising sea levels causing increased risk of Delta levee failure, seawater intrusion of coastal groundwater basins, and potential cutbacks on the State Water Project and the Central Valley Project. The major impact in California is that without additional surface storage, the earlier and heavier runoff (rather than snowpack retaining water in storage in the mountains), will result in more water being lost to the oceans.

Climate change is also listed in the UWMP as a fact that affects the ability to estimate existing and future water delivery reliability. Furthermore, climate change is listed in the Water Conservation Ordinance as a major factor that makes Southern California highly-susceptible to water supply reliability issues.

The District'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 District. 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 the VanderWerff well ties into the District's UWMP Section 7.3, describes the District's Wholesale and Retail Zone FY 2015-16 Capital Budget and Master Plans that includes planned water supply projects and programs for the District. Several CIP projects are being implemented – the VanderWerff Well was one of those projects evaluated by the District to upgrade the supply, storage, and conveyance systems in the WZ and RZ. In addition, the VanderWerff Well is part of 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 District's Water Conservation Ordinance is included in the UWMP as Appendix D. The District 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 District are expected to be in a state of shortage during drought conditions. During these times, the District 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 or response action?

Yes, EOCWD's draft HMP, attached to this application, includes the replacement of existing wells due to their age and capabilities as a mitigation action in response to drought. Additionally, the plan lists this mitigation action as a high priority in order to address drought, as well as a short term project that should be implemented in the next 1-5 years.

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

In addition to the project being consistent with the UWMP and the Water Conservation Ordinance, it also helps achieve goals 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". The District 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.

The project will implement the following 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.

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 the District. The proposed VanderWerff Well is necessary to meet these projections. The Retail Zone relies on a combination of imported water and local groundwater to meet its water needs. The District 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 Retail Zone's main source of water supply is groundwater from the Santiago Groundwater Basin, also known as the OC Basin. Currently, OCWD has set its BPP at 75% resulting in the District'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 District. The District relies on approximately 650 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 Actual or Potential Drought Impacts to be addressed by the Project

Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Please describe existing or recent drought conditions, including when and the period of time that the area has experienced drought conditions (please provide supporting documentation, [e.g., Drought Monitor, droughtmonitor.unl.edu]).

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, although impacts are still felt today. 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. California has received heavier than average rains throughout the beginning of 2019 but has since regressed and is experiencing a dry 2020.

Given the anticipated impacts of recurring drought conditions in the years ahead, it is critical for the District to construct a new well as an added water supply and further cut back on imported water. Maintaining good water practices and water quality, EOCWD shut down both of its groundwater producing wells due to PFAS related contaminants and instead has purchased imported water to make up the loss of water production. This creates a financial impact to customers due to the water price increase of imported water during droughts. The new VanderWerff Well will help maintain EOCWD's water diversification portfolio and help the District during the next drought, as local groundwater supplies will be more readily available in low allocation years from the State Water Project or the Colorado River.

Figure 6: Funding Sources 1

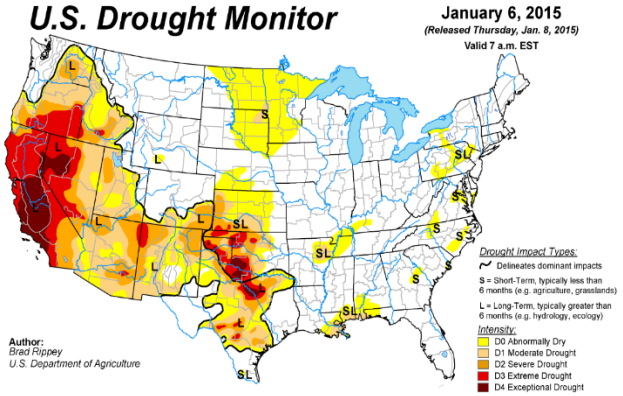


Figure 4: Drought Monitor Report January 1, 2015

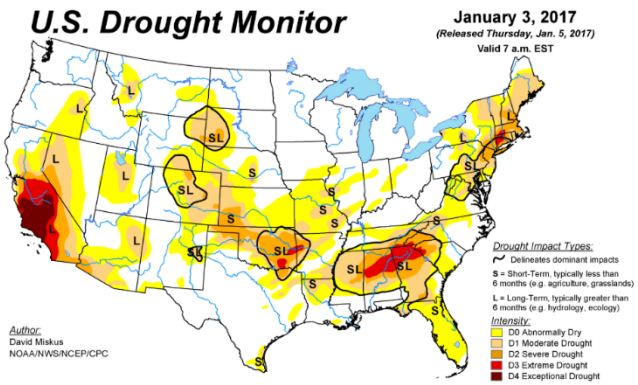


Figure 5: Drought Monitor Report January 1, 2017

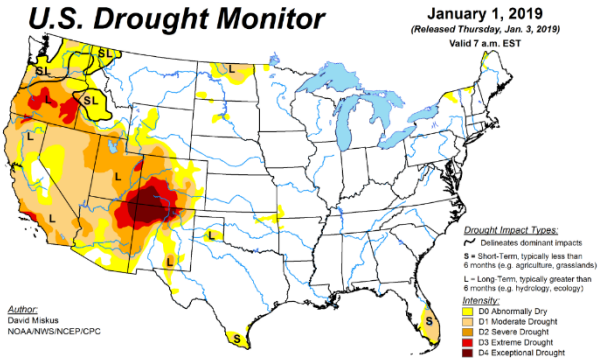


Figure 6: Drought Monitor Report January 1, 2019

Evaluation Criterion D – Project Implementation

Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: design, environmental and cultural resources compliance, permitting, construction/installation.

Task 1.0: Execute Grant Agreement – The District 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 District anticipates a mitigated 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 the VanderWerff Well 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 of the VanderWerff Well:

- CEQA and NEPA – The District plans to approve mitigated negative declaration for this project.
- City of Orange construction permit – A well construction permit will be required from the City of Orange. 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 Orange inspector(s) during drilling and abandoning activities. For pipeline assessment activities, Consultant shall coordinate with the City of Orange 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 Orange. The Project Manager has had an initial consultation with Orange. 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 District may be required to 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.

Figure 7 – Proposed Project Schedule											
Task	Major Task	Month of Completion	2020		2021				2022		
			Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3
1	Execute Grant Agreement	Mar-21				X					
	Phase I – Well Drilling (not included in grant)										
	Completion of Final Design	Feb-20									
2	Environmental Documentation, Permits, and Approvals	Sep-20	X								
	Start of Construction	Jul-21					X				
	End of Construction	Dec-21						X			
3	Phase II – Well Equipping										
3.1	Preliminary Design Report	Apr-21				X					
3.2	Completion of Final Design	May-21				X					
3.3	Well Equipping Construction	Jul-21					X			X	X
3.4	Well pumping tests	Sep-21						X		X	
3.5	End of Construction	Oct-22									X
4	Grant Administration, Reports, Reimbursements	Sep-22				X	X	X	X	X	X

Figure 7: Project Schedule

Identify and describe any engineering or design work performed specifically in support of the proposed project.

A Water Well Feasibility and Siting Study for Two Proposed Well Sites, was prepared for the District by Richard C. Slade & Associates dated February 2019. The purpose of the report was to evaluate the feasibility of constructing a new well at 210 N. McPherson Road, or on land adjacent to a City park ¼ miles away from 210 N. McPherson.

Describe any new policies or administrative actions required to implement the project.

The District Board of Directors will need to enter into a grant agreement with the Bureau of Reclamation.

Evaluation Criterion E – Nexus to Reclamation

How is the proposed project connected to a Reclamation project or activity? Does the applicant receive Reclamation project water? 5. Will the proposed work contribute water to a basin where a Reclamation project is located?

The EOCWD Retail Zone receives between 21-25% of its imported water from the Metropolitan Water District of Southern California (MWD) which currently relies on the Colorado River Aqueduct, a Reclamation Project. Additionally, a portion of the imported water comes from the San Joaquin River Delta (through the State Water Project), which is linked to the Bureau of Reclamation's Central Valley Project due to shared environmental impacts with the State Water Project.-.

The proposed project will 1) increase the reliability of local water supplies; 2) achieve optimization in the District'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.

The water savings attained will be the result of reduced imports from the Bay-Delta and the Colorado River, thereby impacting the Colorado River Basin. By reducing the amount of water imported, this water in effect remains in the basin from which it originates or is made available to meet demands in other areas of the State. Any increase in water reliability and greater availability in overall water supply resulting from the project would also help Reclamation in meeting the federal Indian trust responsibility, a legally enforceable fiduciary obligation on the part of the United States to protect tribal treaty rights, lands, assets, and resources, to the tribes.

Evaluation Criterion F – Department of the Interior and Bureau of Reclamation 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 VanderWerff Well has an approximate life cycle of 75 years.

Project Budget

The Project Budget includes a Funding Plan, Budget Proposal, and Budget Narrative. The SF-424C Budget Form is attached to this application under Budget Form SF-424C.

Funding plan and letters of commitment

The total cost of the project is estimated at $4,094,340. The District 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 District 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 District will provide a share of $1,994,340, this has been was approved with the annual budget as a capital improvement project by the Board of Directorsl on June 18, 2020. The District is requesting $500,000, a 12% share from the Reclamation (see Figure 6). Funding from OCWD will be received on a reimbursement basis from September 2020 through December 2021.

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

The Orange County Water District 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.

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. OCWD has received funding through this program that will fund a portion of the wells required to extract the drought supplies during dry years.

From: Hutchinson, Adam
To: avalenzuela@tustinca.org; Grisso, Michael; Jerry Mendzer; Lisa Ohlund; Phil Lauri, P.E.; Tiffany Foo
Cc: Kennedy, John; Woodside, Greg
Subject: SARCCUP Schedule
Date: Wednesday, March 13, 2019 5:32:24 PM
Attachments: template05_sm_twitter_1ec5fca1-3c01-4a7c-9061-1608511af66e11111.png

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

From: Hutchinson, Adam
To: avalenzuela@tustinca.org; Grisso, Michael; Jerry Mendzer; Lisa Ohlund; Phil Lauri, P.E.; Tiffany Foo; Sonny Tran; Jose Diaz; Jeff Smyth
Cc: Kennedy, John; Woodside, Greg
Subject: RE: SARCCUP Schedule
Date: Wednesday, March 20, 2019 3:33:54 PM
Attachments: image004.png
template05_sm_twitter_1ec5fca1-3c01-4a7c-9061-1608511af66e11111.png

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

Figure – Total Project Cost Table	
Source	**Amount**
Costs to be reimbursed with the requested Federal funding	$500,000
Costs to be paid by the applicant	$1,994,340
Costs to be reimbursed with OCWD SARCCUP funds via Proposition 84	$1,600,000
Total Project Cost	**$4,094,340**

Figure 8: Simple Budget

Figure – Summary of Non-Federal and Federal Funding Sources		
Funding Sources	**% of Total Cost**	**Amount**
Non-Federal: East Orange County Water District	49%	$1,994,340
Non-Federal: Orange County Water District	39%	$1,600,000
Non-Federal Subtotal		**$3,594,340**
Federal: Reclamation Funding Requested	12%	$500,000
Total Project Cost	**100%**	**$4,094,340**

Figure 9: Funding Sources

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 –There are no salary and wages and fringe benefit costs shown for the period before we estimate prior to the February 2021 date of grant award.

B. Environmental documents, permitting, and approvals – costs of approximately $22,000 may be incurred prior to grant award in order for the project to be ready for construction by March, 2021.

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.

Budget Proposal

EOCWD VanderWerff Well						
Budget Item Description	Co			Total Cost	Reclamation	Non-Federal
	$/Unit	Unit	Quantity			
Salaries and Wages						
General Manager 1 hour per week for 11 months	$ 111.37	Hour	48	$ 5,346		$ 5,346
Engineering Manager 10 hours per week for 11 months	$ 96.50	Hour	480	$ 46,320		$ 46,320
Operations Manager 5 hours per week for 11 months	$ 86.60	Hour	240	$ 20,784		$ 20,784
Administration Assistant II 5 hours per week for 11 months	$ 43.59	Hour	240	$ 10,462		$ 10,462
Administration Assistant I 2 hours per week for 11 months	$ 25.95	Hour	96	$ 2,491		$ 2,491
Management Analyst I 5 hours per week for 11 months	$ 35.29	Hour	240	$ 8,470		$ 8,470
Subtotal Salaries				**$ 93,872**		**$ 93,872**
Fringe Benefits						
General Manager	25%	Percent		$ 1,336		$ 1,336
Engineering Manager	25%	Percent		$ 11,580		$ 11,580
Operations Manager	25%	Percent		$ 5,196		$ 5,196
Administration Assistant II	25%	Percent		$ 2,615		$ 2,615
Administration Assistant I	25%	Percent		$ 623		$ 623
Management Analyst I	25%	Percent		$ 2,117		$ 2,117
Subtotal Fringe				**$ 23,468**		**$ 23,468**
Materials and Supplies						
Phase I: Well Drilling						
Total Well Drilling				$ 900,000		$ 900,000
Phase II: Well Equipping						
Pump/Motor/Column Assembly	$ 300,000	LS		$ 300,000	$ 150,000	$ 200,000
Electrical Improvements	$ 500,000			$ 500,000	$ 200,000	$ 300,000
Site Work	$ 100,000			$ 100,000	$ 50,000	$ 50,000
Site Piping	$ 150,000			$ 150,000	$ 50,000	$ 100,000
Chemical Feed System	$ 125,000			$ 125,000	$ 50,000	$ 115,000
Total Well Equipping				$ 1,175,000	$ 500,000	$ 765,000
Subtotal Materials & Supplies				**$ 2,075,000**		**$ 1,665,000**
Contractual						
Phase I: Well Drilling						
Total Consultant Services	300000	LS		$ 300,000.0		$ 200,000
Total Contractor Services	650000	LS		$ 650,000.0		$ 550,000
Phase II: Well Equipping						
Consultant Services						
Pre-Design	60000					$ 60,000
Design and Bid Assistance	450000	LS		$ 450,000.0		$ 350,000
Construction and Inspection Services	300000			$ 300,000.0		$ 300,000
Total Consultant Services						
Contractor Services						
Mobilization	80000	LS		$ 80,000.0		$ 50,000
Total Contractor Services	50000	LS		$ 50,000.0		$ 50,000
Subtotal Contractual				**$ 1,830,000**	**$ -**	**$ 1,560,000**
Environmental						
NEPA	$ 1,000	LS		$ 1,000		$ 1,000
CEQA Permitting	$ 20,000	LS		$ 20,000		$ 20,000
CEQA Monitoring & Mitigation	$ 1,000	LS		$ 1,000		$ 1,000
Subtotal Environmental	$ 22,000	LS		**$ 22,000**		**$ 22,000**
Total Direct Costs				**$ 4,044,340**	**$ 500,000**	**$ 3,544,340**
Total Indirect Costs				0	0	0
Total Project Costs				**$ 4,044,340**	**$ 500,000**	**$ 3,544,340**
rcentage Contributions by Funding				**100%**	**12%**	**100%**

Budget Narrative

Salary and Wages

The Project Manager for this project is Lisa Ohlund and the Assistant Project Manager is Jeff Smyth, P.E., Engineering Manager for EOCWD. The total cost for Ms. Ohlund is expected to be $5,346 with an estimated48 hours at a compensation rate of $1111.37/hr. The total cost for Mr. Smyth's services is expected to be $46,320 with an estimated 480 hours of labor at a compensation rate of $996.50/hr. This labor rate for all positions is separate from the fringe benefit rate. The specific tasks for this position include supervising the project, preparing administrative reports and presentations, and attending board meetings.

The other personnel involved in the project include the District's Operations Manager, two Water Operator positions and two Administrative Assistant positions. The total cost for the Operations Manager is $20,784; with an estimated 240 hours at a rate of $86.60/hr. The total for the four other positions is expected to be $21,422 with an estimated 576 hours of labor at an average rate of compensation at $34.94/hr. All of the four positions have the labor rate separated from the fringe benefit rate.

The specific tasks for these positions include operations coordination with the design engineer and contractor, assistance with scheduling and meetings, reports, filing and project accounting. All salaries will remain at the same rate for the length of the agreement.

The total cost for salaries is $93,872.

Fringe Benefits

For full-time employees, EOCWD uses percentage rates to calculate the four different fringe benefits, and then includes health, dental and vision at a flat rate per employee plus spouse. The state unemployment insurance rate is set to 0.20% of the gross salary. The Medicare rate is set to 1.45% of the gross salary and the worker's compensation insurance rate is set to the clerical rate of 0.522% of the gross salary cost. The employer PERS rate for general employees is set to 9.081% of the gross salary cost.

The total cost for fringe benefits is $23,468.

Material and Supplies

The materials costs for well drilling and equipping are shown; major parts/tasks are broken out.

Total cost of materials and supplies is $2,125,000

Contractual/Construction

The costs for the design engineer and contractor are shown; contractor costs include mobilization.

The total cost for contractual and construction is $1,830,000.

Environmental

The total cost for the NEPA and CEQA processes is $22,000.

Indirect Costs

There are no indirect costs that need to be itemized under this project.

Total Costs

The total cost to implement this project is $4,094,340 with a Federal cost share amount of $500,000 and a non-Federal cost share amount of $3,594,340.

Environmental and Cultural Resources Compliance

1. **Will the project impact the surrounding environment (e.g. soil [dust] air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.**

   The proposed project will construct a new well structure. The District is required to implement all avoidance and mitigation measures in compliance with the City of Orange. Residential neighborhoods are located adjacent to the project site on east side (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 Orange.

2. **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.

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

4. **Water Delivery System Construction.**
   Since the formation of the District in 1961, millions of dollars of water facilities have been installed.

5. **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.

6. **National Register of Historic Places.**

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

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

8. **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.

9. **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.

10. **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 permit or approvals

The District may obtain final CEQA and NEPA clearance prior to February 2021, the start of the grant period.

- City of Orange Well Construction Permit – The District's Project Manager has had an initial consultation with Orange. Orange does not anticipate any concerns with issuing a construction permit.

- Discharge Permit – The District will need to acquire a National Pollutant Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board, Santa Ana Region (RWQCB). The District 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.

Resolution

The following official resolution will be presented to the East Orange County Water District's Board of Directors on August 20, 2020 and will be immediately forwarded to Bureau of Reclamation for inclusion with this application.

RESOLUTION NO. ___

RESOLUTION OF THE BOARD OF DIRECTORS OF THE EAST ORANGE COUNTY WATER DISTRICT AUTHORIZING PARTICIPATION IN UNITED STATES BUREAU OF RECLAMATION'S WATERSMART DROUGHT RESPONSE GRANT PROGRAM FOR THE RETAIL ZONE VANDERWERFF WELL CONSTRUCTION PROJECT, AND MAKING RELEVANT FINDINGS AND AUTHORIZATIONS FOR SUCH PURPOSES.

WHEREAS, the East Orange County Water District ("EOCWD") desires to to drill and construct the VanderWerff Well the purpose of ultimately replacing the 1926 West Well to increase reliability during drought periods and improving overall water quality for our customers; and

WHEREAS, the United States Department of Interior, Bureau of Reclamation's ("Reclamation") WaterSMART Grant Program ("WaterSMART Program") Drought Response Program: Drought Resiliency Projects for Fiscal Year 2021 provides grant funding for projects that build long-term reslilience to drought and reduce the need for emergency response actions.

WHEREAS, the EOCWD Board of Directors ("Board") has determined it to be in the best interests of EOCWD with regard to the Water Project to participate in the WaterSMART Program; and

WHEREAS, EOCWD has prepared a Project Budget/Budget Proposal for the Water Project ("Funding Plan"), which (1) includes a funding plan for the Water Project and (2) shall be submitted by EOCWD as part of the WaterSMART Program application. Said Funding Plan is hereby incorporated into this Resolution by this reference; and

WHEREAS, Reclamation requires EOCWD, as an applicant, to designate, by resolution, an authorized representative for filing the grant application.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE EAST ORANGE COUNTY WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Section 1. The recitals set forth above are true and correct, and are incorporated into this Resolution by this reference.

Section 2. The Board has reviewed and supports EOCWD's application to Reclamation for the WaterSMART Program to finance the costs, or a portion of the costs, of the Water Project.

Section 3. The Board hereby formally designates EOCWD's General Manager, Lisa Ohlund, or her designee, as EOCWD's "Authorized Representative" with legal authority to enter into an agreement with Reclamation relative to the WaterSMART Program in connection with

the Water Project. The Board hereby further authorizes, and ratifies the authority of, the Authorized Representative to (1) prepare, sign, and file, for and on behalf of EOCWD, a WaterSMART Grant Proposal ("Grant Proposal") for financing the costs, or a portion of the costs, of the Water Project from Reclamation; (2) negotiate and enter into an agreement with Reclamation, or otherwise, for purposes of securing WaterSMART Grant Funding; and (3) take any other actions, including, but not limited to, preparing, executing, and filing forms, reasonably necessary to effectuate the purpose and intent of this Resolution.

Section 4. EOCWD shall, and the Authorized Representative is authorized to certify that EOCWD has and will, comply with the financial and legal obligations associated with receipt of the WaterSMART Grant financial assistance.

Section 5. EOCWD has the capacity to provide the funding and/or in-kind contributions specified in the Funding Plan.

Section 6. EOCWD will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

Section 7. This Resolution shall be effective immediately upon adoption by the Board.

ADOPTED, SIGNED AND APPROVED this _____ day of _____ 2019.

_____

President
EAST ORANGE COUNTY WATER DISTRICT
and of the Board of Directors

thereof

_____

Secretary

EAST ORANGE COUNTY WATER DISTRICT

and of the Board of Directors

thereof

STATE OF CALIFORNIA)
) ss
COUNTY OF ORANGE)

I, JEFFREY A. HOSKINSON, Secretary of the Board of Directors of the EAST ORANGE COUNTY WATER DISTRICT, do hereby certify that the foregoing Resolution No. ___ was duly adopted by the Board of Directors of said District at a Regular Meeting of said District held on _____, 2020, and that it was so adopted by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____

Secretary
EAST ORANGE COUNTY WATER DISTRICT
and of the Board of Directors
thereof

Mandatory Forms:

- SF-424 Application for Federal Assistance
- SF-424 Budget Information
- SF-424 Assurances
- SF-LLL Disclosure of Lobbying Activities

Appendices/Attachments:

- 2015 Urban Water Management Plan
- The OC Plan
- 2009 Water Conservation Ordinance
- 2019 Water Well Feasibility and Siting Study for Two Proposed Well Sites