



## **Fairbairn Water Treatment Plant Groundwater Well Improvement Project**

### **WaterSMART DROUGHT RESPONSE PROGRAM Drought Resiliency Project Grant for FY2021**

**BOR-DO-20-F002- FG II**

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**Prepared For:**

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## SECTION 1: TECHNICAL PROPOSAL

### A. Executive Summary

**Date:** August 5<sup>th</sup>, 2020

**City/County/State:**

Sacramento/Sacramento/CA

**Located on a Federal Facility:** No

**Applicant:** City of Sacramento

**Project Length of Time:** 36 Months

**Estimated Completion Date:** 12/31/2023

The **Fairbairn Water Treatment Plant (FWTP) Groundwater Well Improvement Project** (Project) is the final phase of the FWTP well construction that will equip and provide water treatment for a recently constructed groundwater well located at FWTP. The new well has a capacity to produce up to **4,840 acre-feet per year (AFY)** of potable water and will augment the City of Sacramento's (City) water supplies. The FWTP groundwater well is a high producing well and will provide an equivalent capacity to nearly three to four of the existing wells within the City's groundwater supply system. The Sacramento region recently experienced one of the most severe droughts in recent memory from 2013 to 2017 (U.S. Drought Monitor). Currently, the City of Sacramento is still in the midst of a moderate drought due to the lack of precipitation to date. The City has been investing in expanding its groundwater pumping capacity to diversify its water portfolio and mitigate the ongoing drought conditions facing the region by investing in and implementing a conjunctive use water supply as supported by City of Sacramento's General Plan policy.

The FWTP Well is drilled and the casing and gravel packing phase is completed. However, the water quality test for the well resulted in high manganese levels above the maximum contaminant level threshold. The cost for the required manganese treatment was beyond the initial project budget. Therefore, the project was put on hold. The total project cost to complete the wellhead construction including all necessary chemical treatments, control buildings and site improvements is \$7,511,900 and the funding request is for **\$1,500,000**. As a high producing well, the FWTP groundwater well is an important asset to the City's water supply reliability.

### B. Project Location

The Project is located on City-owned land at the northwest corner of the FWTP located at 7501 College Town Drive. The Project latitude is {38° 33' 36" N} and the longitude is {121° 25' 12" W}. **Figure 1** is a regional map showing the location of the FWTP and **Figure 2** is a vicinity map of the Project location.



## REGIONAL MAP





## **C. Technical Project Description**

The FWTP Groundwater Well construction began in 2016, and the drilling, casing and gravel packing has been completed. However, due to unanticipated levels of manganese present and the need for treatment, the cost of the project went beyond allocated funds at the time and additional construction ceased.

The Project will complete the well equipment installation, implement site improvements and all chemical treatment including manganese treatment to bring the well into operation. The total Project cost of \$7,511,900 also includes all costs associated with design and construction management. The Project construction consists of the following components:

- Well pump and motor. The pump will be open line-shaft water-lubricated vertical turbine pump with a 3,000 gallon per minute (gpm) at 278 feet of total dynamic head. The motor will be a premium efficiency, vertical, hollow shaft motor, 300 horsepower, 480-VAC, 3 phase, 60-HZ. There will be a reinforced concrete pedestal, well head, well seal and surface plate.
- Pump discharge piping, valves, and appurtenances. This includes pump-to-waste and flush-to-waste valves.
- Control Building. This consists of a Concrete Masonry Unit (CMU) block walls and a wood truss roof with tile.
- Manganese and Chemical treatment systems. The chemical feed system will consist of all necessary storage, injection, and safety equipment required to chlorinate and fluoridate water. Appropriate manganese treatment system will be designed and constructed. Given the well is located at a treatment facility, the most cost-effective system that takes advantage of existing infrastructure will be implemented.
- Electrical and Control Room. The Electrical Room will house all the switchgear, motor control center, chlorine and fluoride analyzers and all other electrical equipment. The control system will provide unsupervised operations and status monitoring.
- 24-Inch Diameter Water Transmission Main.
- 6-Inch Diameter Sewer Main.

Site work will include:

- Grading/surface improvements which will pave the area around the well.
- Improvements to the northern half of the plant's existing storm drain.
- Extension of a one-inch domestic water service for wash down/maintenance.
- Adjustments to the existing lawn irrigation to accommodate site improvements.
- Improvements to the existing FWTP storm drain system to accommodate the pump-to-waste and flush-to-waste flows from the well and well water discharge main.

## **D. Performance Measures**

The Project offers significant benefits that can be quantified in two specific performance measures:





1. **Pumping capacity.** Construction of the Project is expected to increase the City's pumping capacity by approximately 3,000 gpm. This equates to approximately 4,840 AFY less surface water diversions required on an annual basis.
2. **Cost savings.** The Project will result in an expected 4,840 AF yearly that would not have to be diverted from surface water. Surface water diversion is much more costly than groundwater production. The difference in cost between pumped and diverted water is significant and easily quantifiable through this performance measure.

## **E. Evaluation Criteria**

### **E1.1 Evaluation Criterion A — Project Benefits**

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

The FWTP Groundwater Well has an expected life of at least **50 years** and production capacity of **4,840 AFY** of potable water.

Based on the City of Sacramento's Groundwater Master Plan (GMP) Final Report, as of 2015, the City's Department of Utilities (DOU) serves approximately 493,000 people in an area of 99 square miles. According to the City's latest Annual Report, in fiscal year (FY) 2017-18, the City produced 91,862 AFY of water, and provided water to approximately 154,049 service connections. The main source of water for the City of Sacramento are the Sacramento and American Rivers, which accounted for 80% of the total production and 20% from Groundwater supply as shown in Table 1.

Reclamation, in collaboration with the City of Sacramento and five other non-federal partners, completed the American River Basin Study (ARBS) in April 2020. The Study, as part of the WaterSMART program, addresses 21<sup>st</sup> century challenges resulting from increased competition for the limited water supplies and climate change. The Study acknowledges the growing imbalance between supply and demand that water managers in the American River Basin continue to face. The City of Sacramento and surrounding metropolitan areas have been and will continue to be the largest contributors to population growth in Northern California.

The Study also finds that climate change is the biggest threat to the sustainability of relying on water from the American and Sacramento Rivers (the American River is a major tributary to the Sacramento River). The Study anticipates substantial increases in year-round temperatures and reduction of runoff from the Sierra-Nevada's in winter months, and decline in the snowpack.

The rising demand for water and the strains placed on the Sacramento and American Rivers make it clear that alternative sources of water are necessary. The City of Sacramento has a long history of planning for drought response, water sustainability and less reliance on vulnerable surface water from the nearby rivers. In its continual efforts to properly plan for water supply and manage demand, the City developed documents such as the 2010 Urban Water Management



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Plan (UWMP), the 2013 Water Master Plan, the 2015 UWMP and the 2017 GMP. All these plans have a common strategy of diversifying water supply to include resources other than the vulnerable Sacramento and American Rivers. Particularly, it is recommended to use groundwater in an efficient and sustainable manner by replacing aging wells and constructing new ones. The documents describe the role of groundwater in the City's water supply portfolio as a critical component to manage the response to the recurring droughts in California. The overall strategy also includes a comprehensive program of water conservation.

The FWTP Well Improvement Project follows these recommendations and will increase the City's water production capacity by approximately **4,840 AFY**, thus reducing the City's reliance on surface water by the same amount. The FWTP new well is expected to provide benefits for at least up to **50 years**. Implementation of this project promotes conjunctive use to utilize more surface water for water production during wet years and allowing underground aquifers to recharge, and the utilization of more groundwater during dry years, thus allowing more surface water to go unused. This optimizes environmental resources. Conjunctive use also benefits stream flow on the region's rivers during drought by utilizing more groundwater.

California has been suffering from multi-year drought conditions, which directly impact water supplies. The City's ability to pump from the FWTP Well will reduce the City's dependence on the drought-stricken limited surface water supplies, offer long-term drought resilience benefits (both quantifiable and qualitative) by providing an additional water supply, improve water management and indirectly benefit fish, wildlife and the environment through increased streamflow.

*Will the project make additional water supplies available? If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated? What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?*

The project will make an additional **4,840 AFY** of local groundwater available to add to the City's drinking water supply. Prior to the drilling of the FWTP Well, a test exploration hole was drilled. The test hole determined that the well will have a pumping capacity of 3,000 gpm (4,840 AFY) at approximately 300-foot depth.

As it is demonstrated in the below table, historic water usage between 2012-2019 was used to determine the impact of the proposed project, Water from the Sacramento and American Rivers accounted for 80% of the total production. Groundwater supply had a share of 20%. The 4,840 AFY produced by the FWTP Well will increase the local groundwater production to 24.5% of the total supply as shown in **Table 1**.

*Table 1: Project Water Production Increase*

### City's DOU Water Supply Comparison





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Water Supply Source	Pre-Project AFY (Avg 2012- 2019)	Pre-Project %	Post-Project AFY	Post-Project %
Surface Water – Sacramento and American Rivers	78,741	80	73,901	75.5
Local Groundwater Supply (North & South Basins)	19,077	<b>20</b>	23,917	<b>24.5</b>
<b>TOTALS</b>	97,818	100	97,818	100

*Provide a brief qualitative description of the degree/significance of the benefits associated with the additional water supplies.*

Recent planning efforts undertaken by the City of Sacramento identify the same challenges faced by the worsening droughts in California being magnified by climate change and the increasing pressure on surface water resources. The plans call for diversifying water production by turning to local sources such as groundwater and recycling.

The ability to create any additional water supplies is extremely significant to the City and the State of California, as we continue to build long-term resilience to drought by reducing our dependence on severely drought-stricken surface water supplies. The anticipated benefits associated with the additional water supply that will result from the construction of the Project include the following:

- Increasing the City's groundwater pumping capacity by providing an additional groundwater source.
- Reducing the impact on the lower American River during dry years by increasing groundwater pumping and reduce surface water diversions.
- Improving City's water supply reliability by introducing new wells into the system and having both surface water and groundwater options during maximum day demands.
- Increasing the groundwater capacity will allow the City to contribute more water by Water Banking and Transfer to other agencies that will help regional partners throughout the state to have increased supply.
- Providing a more drought resilient water supply alternative.
- Providing a more economical water supply alternative.
- An integrated benefit by incorporating the well site into the existing water treatment plant site. This provides an opportunity to blend groundwater with surface water.

*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)? If so, how will the project increase efficiency or operational flexibility?*

The City of Sacramento currently receives most of its water from the Sacramento and American Rivers. The water in these rivers is dependent on rainfall and snowpack in the Sierra Nevada



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Mountains. Reclamation completed the Sacramento and San Joaquin Rivers Basin Study (SSJRBS) in 2016. The SSJRBS found that the potential effects of a changing climate have introduced significant uncertainty in long-term water supply reliability in the American River Basin.

The uncertainty in the reliability of the two significant surface water sources for the City makes it of paramount importance that the City shifts to alternative sources of water. The Project will provide **4,840 AF annually** of locally produced water, which gives the City direct control and promotes conjunctive use to utilize more surface water for water production during wet years and allowing underground aquifers to recharge, and the utilization of more groundwater during dry years, thus allowing more surface water to go unused. This optimizes environmental resources. Conjunctive use also benefits stream flow on the region's rivers during drought by utilizing more groundwater. This also translates to better management of the water supplies on the state level. Freeing up demand for surface water supplies will improve the State's ability to better manage its surface water supplies

The Project will increase water management efficiency by allowing the City to continue their program of supporting the region with readily available local supplies as opposed to vulnerable surface water. Once equipped, the well will provide a steady source of local water that is cost efficient. This will also give the City one additional tool to better respond to the recurring droughts.

*What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, provide the average benefit over ten years including dry years). What percentage of the total water supply does the water better managed represent? How was this estimate calculated?*

The Project will make an additional **4,840 AFY** of local groundwater or 48,400 AF in 10 years available to add to the City's drinking water supply. Prior to the drilling of the FWTP Well, a test exploration hole determined that the well will have a pumping capacity of 3,000 gpm (4,840 AFY) at approximately 300-foot depth that equates to 48,400 AF in 10 years.

Based on the historical water supplies (Table 1), the City produced 97,818 AFY of water. Water from the Sacramento and American Rivers accounted for 80% of the total production. Groundwater supply had a share of 20%. The 4,840 AFY produced by the FWTP Well will increase the local groundwater production by **4.5%** to approximately 24.5% of the total supply.

*Provide a brief qualitative description of the degree/significance of anticipated water management benefits.*

The ability to create any additional water supplies is extremely significant to the City of Sacramento and to the State, as we continue to build long-term resilience to drought by reducing



our dependence on severely drought-stricken surface water supplies. Increasing the groundwater capacity will allow the City to contribute more water by conjunctive use through Water Banking and Transfer to other agencies that will not only benefit the City but also help regional partners throughout the state to have increased supply. The anticipated benefits associated with the additional water supply that will result from the construction of the FWTP Well Project are detailed above.

City's goals for implementation of this project are in direct alignment with the following goals of the 2020 Water Resilience Portfolio that was just published on 7/28/2020:

1. ***Maintain and Diversify Water Supplies:*** reducing reliance on any one source and diversifying supplies to enable flexibility as conditions change.
2. ***Protect and Enhance Natural Ecosystems:*** by reduction of impact to the American River water supply, this project will help protect 10 endangered fish species in this River.
3. ***Be Prepared:*** by implementation of this project, City will be prepared for new threats including deeper droughts.

***Will the project make new information available to water managers? If so, what is that information and how will it improve water management?***

The Project will equip the well with current technology that will enable the City to collect information in real time about the quality and quantity of water production.

Water quality samples at well discharge are routinely tested. The Project will provide this data for improved groundwater monitoring. In addition, other necessary data such as total water use, change in groundwater storage elevation and sustainable yield data can be obtained. This data will be made available to local (City) and regional agencies. It is the intent of this project to improve water management through the examination of the water quality data that it will provide.

City will be able to use this information for conjunctive use decisions to utilize more surface water for water production during wet years and allowing underground aquifers to recharge, and the utilization of more groundwater during dry years, thus allowing more surface water to go unused. This optimizes environmental resources. Conjunctive use also benefits stream flow on the region's rivers during drought by utilizing more groundwater.

***Will the project have benefits to fish, wildlife, or the environment? If so, please describe those benefits.***

The purpose of the ARBS (completed by Reclamation) was to develop the data, tools, analyses, and adaptation strategies specific to the American River Basin. The ARBS evaluated the application of these adaptation strategies and supplemented with compatible actions and initiatives by local agencies to improve regional water supply reliability, while simultaneously enhancing Reclamation's flexibility in operating the Folsom Reservoir. Reclamation needs to



operate Folsom Reservoir in a manner that meets flow and water quality standards in the Sacramento-San Joaquin Delta (Delta) and protect 10 endangered fish species in the Lower American River. The ARBS examined strategies to integrate or better coordinate local and Federal water in the Delta, the largest estuary on the west coast of North America.

The American River is a major tributary to the Sacramento River. The City of Sacramento and adjacent metropolitan areas comprise the largest growth area in Northern California both in the past two decades and in the near future with a significant need to align the vision and climate adaptation strategies for sustainable basin-wide water management.

June through October are often stressful on fisheries due to excessively warm water temperatures in the Lower American River. Increased storage in the Upper Basin would provide greater flexibility to manage the cold-water pool and improve flow and temperature conditions in the Lower American River but would be subject to Folsom Reservoir operations and hydrology.

Providing an alternate source of water will make the City less reliant on surface water diversions from the Sacramento River and American River water. The protection of the water supply to the Delta directly benefits fish, wildlife, and the environment.

*If the proposed project includes any of the following components, please provide the applicable additional information. Wells. What is the estimated capacity of the new well(s), and how was the estimate calculated? How much water do you plan to extract through the well(s)? Will the well be used as a primary supply or supplemental supply when there is a lack of surface supplies? Please provide information documenting that proposed well(s) will not adversely impact the aquifer it/they are pumping from (overdraft or land subsidence). At a minimum, this should include aquifer description, information on existing or planned aquifer recharge facilities, a map of the well location and other nearby surface water supplies, and physical descriptions of the proposed well(s) (depth, diameter, casing description, etc.). If available, information should be provided on nearby wells (sizes, capacities, yields, etc.), aquifer test results, and if the area is currently experiencing aquifer overdraft or land subsidence. Please describe the groundwater monitoring plan that will be undertaken and the associated monitoring triggers for mitigation actions. Describe how the mitigation actions will respond to or help avoid any significant adverse impacts to third parties that occur due to groundwater pumping.*

**Well Data:**

**Depth:** 320 feet below ground surface

**Diameter:** 20-inch casing

**Sustainable Well Yield:** 3,000 gallons per minute (4,840 AFY)

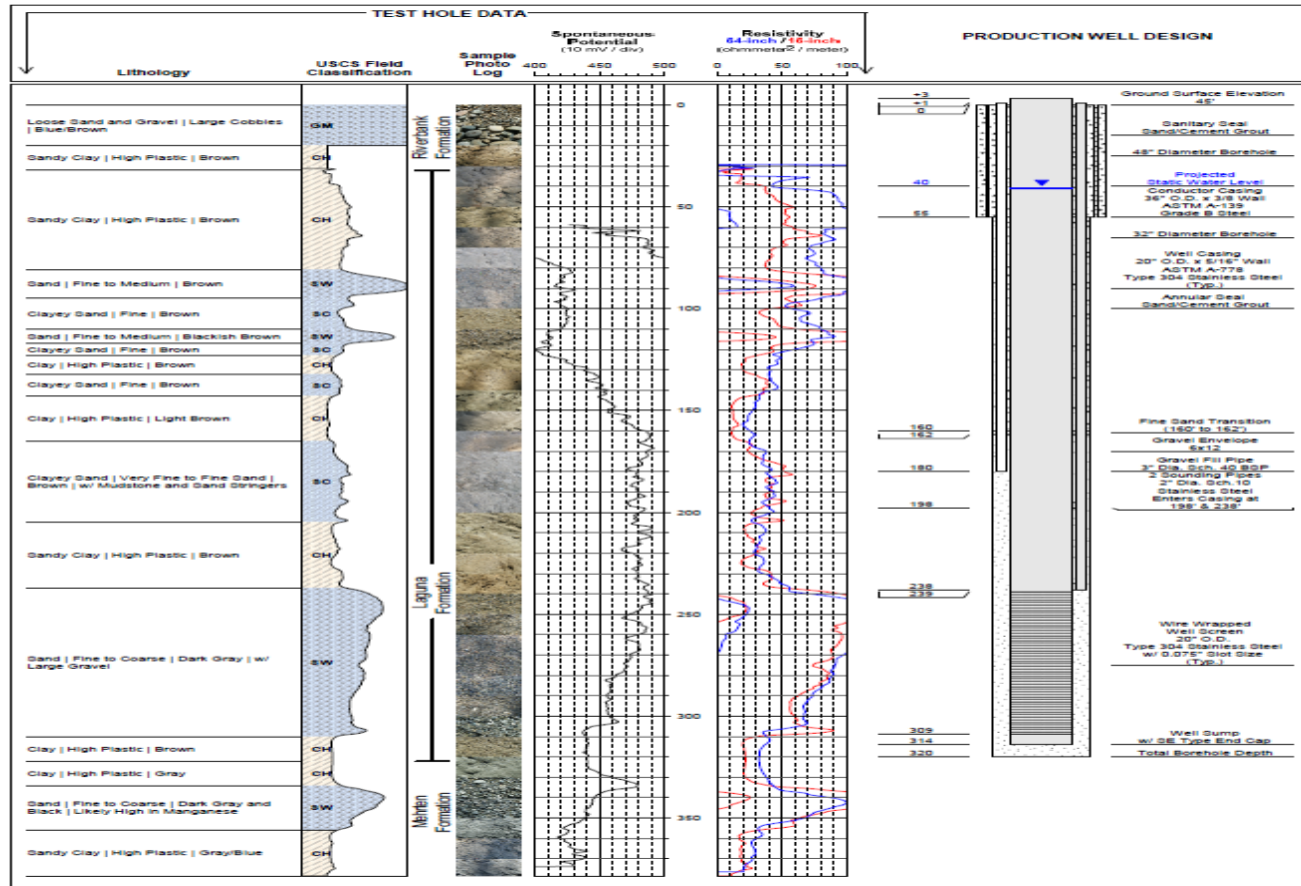
**Role of Well:** Primary source of water supply



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Test exploration hole determined that the well would have a pumping capacity of 4,840 AFY at approximately 300-foot depth. Please see **Figure 3** for technical specifications.

*Figure 3. Well Technical Data*

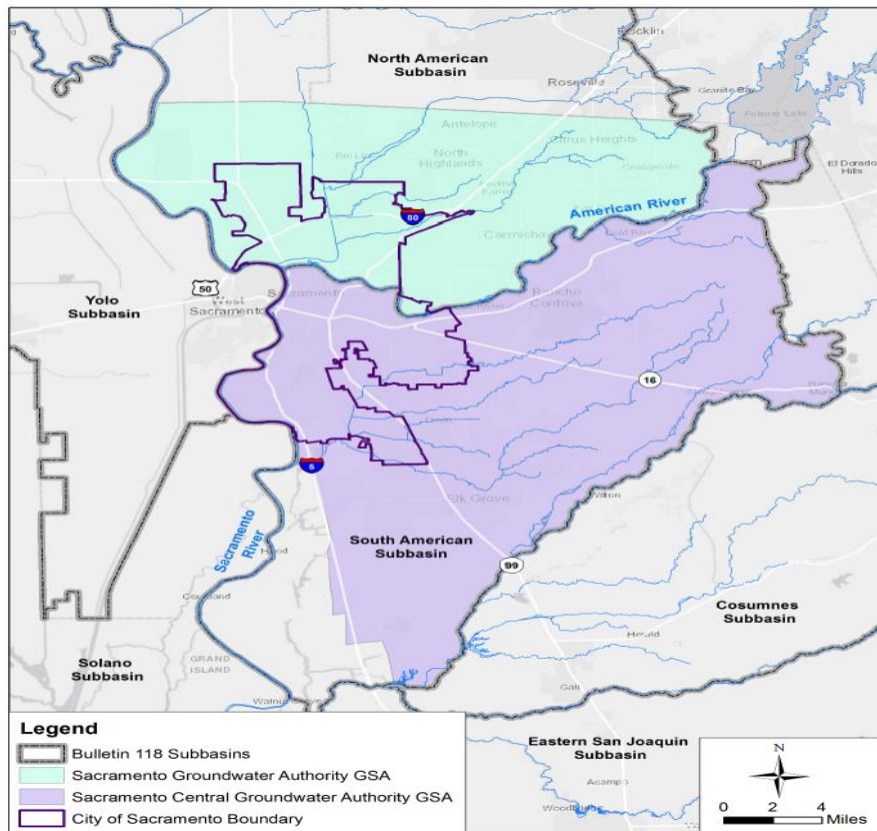


The City of Sacramento overlies two groundwater subbasins of the Sacramento Valley Groundwater Basin. One is the North American Subbasin, located north of the American River, and the second is the South American Subbasin, located south of the American River. The North American Subbasin is bounded by Bear River to the north, Feather River to the west, the Sacramento and American Rivers to the south, and a north-south line extending from the Bear River to Folsom Lake to the east. The South American Subbasin is bounded by the Sierra Nevada to the east, the Sacramento River to the west, the American River to the north, and the Cosumnes and Mokelumne Rivers to the south. **Figure 4** shows the groundwater basins.





Figure 4. Groundwater Basin Map



At present, the City has 31 permitted wells in the North American Subbasin, and two wells in the South American Subbasin. However, only 26 of these wells are currently operational and able to supply municipal water. The City's well inventory also includes 22 operational irrigation/park supply wells, one recently-completed and this project. These wells will extract groundwater from a number of geologic formations that constitute the water-bearing deposits underlying both the North and South American Subbasins (as described in the 2003 Update to the California Department of Water Resources (DWR) Bulletin 118).

These formations include an upper, unconfined aquifer system, and a lower, semi-confined aquifer. The upper aquifer system consists of the Modesto, Riverbank, Turlock Lake, Victor, Fair Oaks, and Laguna Formations, along with Arroyo Seco and South Fork Gravels. The lower aquifer consists primarily of the Mehrten Formation. **Figure 5** is a location map of the City's wells.

The City of Sacramento has invested substantial time and resources to participate in regional planning activities affecting the management of groundwater resources in the North American Subbasin. The SGA was formed as a joint powers authority in 1998 to collectively manage Sacramento County's portion of the North American Subbasin. SGA is governed by a joint powers agreement between the City of Sacramento, Sacramento County, City of Folsom and the City of Citrus Heights. SGA completed the 2014 Groundwater Management Plan, which details a program of basin monitoring that includes, but is not limited to, land subsidence and recharge.

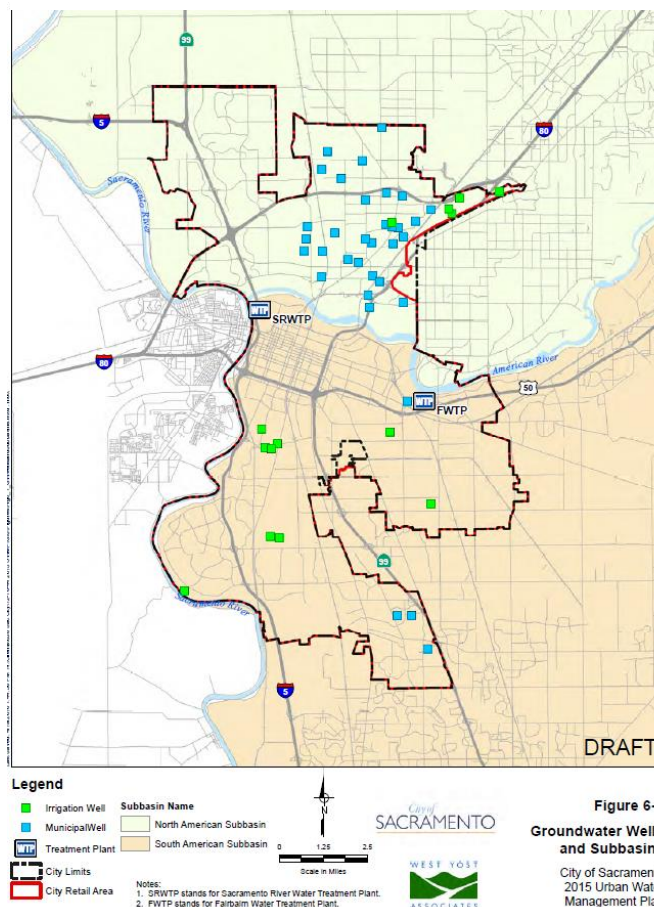




To manage a sustainable yield, a water budget was calculated using a groundwater model, to estimate inflows and outflows for the basin. The water budget assumes that annual groundwater pumping in the North Basin, per the Water Accounting Framework, the City has a long-term yield allocation of 20,591 AFY from the North Basin. As it is demonstrated in Table 1, the average water pumped and delivered by the City from both basins was 19,077 AF of groundwater for retail use which is below the allocation from the North Basin. Based on the modeling and the studies noted in this document, no adverse impact including overdraft or subsidence is expected.

Although the City of Sacramento is not a major pumper from the South American Subbasin, it has also invested substantial time and resources to participate in regional planning entities and activities to protect this resource. The Sacramento Central Groundwater Authority (SCGA) was formed in 2006, and is a joint powers authority, similar to the SGA as a form of governance. The SCGA also developed a Groundwater Management Plan with a detailed strategy to monitor and protect the South American Subbasin. With all the management and monitoring resources for the region coupled with adherence to yield allocations, there is no opportunity for any adverse impact to the water basins.

**Figure 5. City of Sacramento Wells Locations Map**



### E.1.2. Evaluation Criterion B — Drought Planning and Preparedness

The City of Sacramento has a long history of planning for drought response and water sustainability to reduce reliance on vulnerable surface water from the nearby rivers. In its continual efforts to properly plan for water supply and manage demand, the City developed documents such as the 2010 UWMP, the 2013 Water Master Plan, the 2015 UWMP and the 2017 GMP. In addition, the City participated in preparation of regional reports such as the SSJRBS in 2016 and the ARBS in 2020 with a focus on a sustainable basin-wide water management. All these plans have a common strategy of diversifying water supply to include sources other than diverting surface water from the vulnerable Sacramento and American Rivers. Particularly, the water management strategy recommends use of

groundwater in an efficient and sustainable way by replacing aging wells and constructing new ones. These documents describe the role of groundwater in the City's water supply portfolio as a



critical component to manage the response to the recurring droughts in California. The overall strategy also includes a comprehensive program of water conservation. The water planning documents are available at the following links:

**Links:**

2013 Water Conservation Plan: [https://www.cityofsacramento.org/-/media/Corporate/Files/DOU/Reports/Water\\_Conversation-Plan-City\\_of\\_Sac-Final.pdf?la=en](https://www.cityofsacramento.org/-/media/Corporate/Files/DOU/Reports/Water_Conversation-Plan-City_of_Sac-Final.pdf?la=en)

2015 UWMP:

<https://www.cityofsacramento.org/~media/Corporate/Files/DOU/2015%20UWMP%20June%202016Appendices.pdf>

2016 Sacramento and San Joaquin River Basin Studies (SSJRBS):

[https://www.usbr.gov/watersmart/bsp/docs/finalreport/sacramento-sj/Sacramento\\_SanJoaquin\\_TechnicalReport.pdf](https://www.usbr.gov/watersmart/bsp/docs/finalreport/sacramento-sj/Sacramento_SanJoaquin_TechnicalReport.pdf)

2017 American River Basin Study (ARBS): <https://cdn.cosmicjs.com/a0e68070-3273-11ea-bfe8-5b62c3bdf959-ARBSPlanofStudy20170113-1.pdfv>

*Explain how the Drought Action Plan addresses drought.*

The Drought Action Plan for the City is covered in the City's 2015 UWMP. The UWMP has a **Water Shortage Contingency Plan (WSCP)** (Appendix 3 or Chapter 8 of UWMP) with a staged set of actions to activate when faced with drought conditions. The purpose of the WSCP is to establish the actions and procedures for managing water supply when water shortages are declared. The WSCP will minimize non-essential uses to water and conserve the remaining supplies for the greatest public benefit. The WSCP includes the use of groundwater as an essential component of the water supply during dry years.

The UWMP also has a very comprehensive **Water Conservation Plan (WCP)**. The WCP contains many policies, strategies and specific measures to reduce water use in the City. The measures are all aimed at protecting water resources in the face of the recurring droughts in California. The plan states "When an extended drought hits northern California, the City of Sacramento will need a management plan that accounts for a dramatic drop in surface water use, and careful use of our limited groundwater resource".

The FWTP Well Improvement Project will increase the City's water production capacity by approximately 4,840 AFY, thus reducing the City's reliance on surface water by the same amount. The FWTP Well is expected to provide benefits for at least up to 50 years. California has been suffering from multi-year drought conditions, which directly impact water supplies. The City's ability to pump from the FWTP Well will reduce the City's dependence on the drought-stricken limited water supplies, offering long-term drought resilience benefits (both quantifiable and qualitative) by providing an additional water supply, improving water management and indirectly benefitting fish, wildlife and the environment.

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

The City of Sacramento prepared the UWMP with participation of multiple stakeholders ranging from public agencies to City residents. As part of the 2015 UWMP update, the City facilitated a



public review period. A public hearing to discuss the Draft plan was held on June 21<sup>st</sup>, 2016. Public noticing was conducted prior to commencement of a public comment period. During the public comment period, the Draft UWMP was made available on the City's website and at City offices, library, and City Hall.

The City also coordinated the preparation of this 2015 UWMP with 15 agencies, including relevant public agencies that utilize the same water supplies. Some agencies include the County of Sacramento, Sacramento County Water Agency (SCWA), Regional Water Authority (RWA) and Sacramento Groundwater Authority (SGA).

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

The UWMP discusses the impacts of climate change on water resources. Climate change is increasing the severity and frequency of droughts in California. Not only is it reducing the snowpack in the Sierra Nevada Mountains, but it is changing the patterns and speed of snow melt that feeds the California rivers. Finding alternative sources to diverting surface water, combined with effective water conservation strategies, has never been more critical. The FWTP Well is a contribution towards this goal.

***Describe how your proposed drought resiliency project is supported by an existing drought plan. Does the plan identify the proposed project as a potential mitigation or response action? Does the proposed project implement a goal or need identified in the drought plan? Describe how the proposed project is prioritized in the referenced drought plan?***

The City of Sacramento's 2015 UWMP WSCP establishes the actions and procedures for managing water supply when water shortages are declared. The WSCP will minimize non-essential uses to water and conserve the remaining supplies for the greatest public benefit. The WSCP includes the use of groundwater as an essential component of the water supply during dry years.

**E.1.3. Evaluation Criterion C — Severity of Actual or Potential Drought Impacts Addressed by the Project**

At present, the City's oldest active well is 77 years old, and the average age of the City's wells is 54 years. All but four of the City's wells are currently at or near the end of their useful life and the City is planning to replace them within the next 5 to 10 years. The City continues to use groundwater as a critical component of its municipal water supply and has been investing in its groundwater infrastructure.

While the City has sufficient surface water supplies to meet projected demands to 2035 under normal circumstances (though current treatment capacity is insufficient to meet future demands), the City still requires the use of groundwater to maintain adequate pressure in the distribution system during the peak season. The City has been focused on increasing its reliable water resources as the City's population increases (anticipated to increase from a current population of around 493,000 to around 640,000 in 2035 or by a factor of 1.3, per the 2035 General Plan) and



spreads with development. The City also relies on groundwater, both as an emergency backup supply and to facilitate exchanges in support of regional water supply reliability.

The proposed project allows the City to add **4,840 AF** annually to its water system or approximately 24.5% of the groundwater usage as indicated in Table 1 above. This is a significant amount to address the City's delivery needs at the time of drought.

*What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation and tourism, forestry), and how severe are those impacts? Impacts should be quantified and documented to the extent possible. For example, impacts could include, but are not limited to: Whether there are public health concerns or social concerns associated with current or potential drought conditions (e.g., increased risk of wildfire, or past or potential shortages of drinking water supplies? Does the community have another water source available to them if their water service is interrupted?*

According to [www.Drought.gov](http://www.Drought.gov), the last drought season in California lasted 376 weeks beginning on December 27<sup>th</sup>, 2011 and ending on March 5<sup>th</sup>, 2019 and has been considered the longest drought event since 2000. As a result, drought has had a significant impact to the water supplies in the region. The recent droughts in California have had devastating impacts in various aspects of life as described below.

**Increased Risk of Wildfires.** In extended drought conditions, fire behavior can become more extreme because trees and plants that have been dried burn more quickly. California experienced some of the deadliest and most destructive wildfires in its history in 2017 and 2018. A series of sweeping fires in late 2017 had been the most expensive, with claims topping \$11.8 Billion. The record-setting drought conditions have dried out much of the terrain in the region. The availability of water, especially during dry years when wildfires are more likely, is crucial to firefighting efforts.

**Economic Impacts.** A variety of businesses ranging from agriculture to manufacturing and various businesses rely on availability of water for their business activities. Water reduction during drought has a major economic impact on various industries as they may have to possibly reduce production to match the available water supply. Reduced water supply has a larger impact on agricultural sectors and industries which rely more heavily on water services such as commercial laundries, food processing, and other highly water dependent manufacturing.

In addition, wildfires pose economic threats to human life and urban structures. The damage caused by wildfires cause interruptions and losses in the economy. A disastrous consequence of water scarcity is the reduced ability to contain and suppress fires, which could intensify the already-extreme fire risk. Sacramento plays a key role in stability of the region during crisis and it is of outmost importance to ensure water supplies during fire events can meet the demand.

**Energy:** About 15 percent of California's electricity is provided by hydroelectric turbines operating on large water reservoirs. Those reservoirs are abnormally low, reducing hydropower's contribution to the state's energy portfolio. The loss of hydropower between October 2011 and October 2014 cost Californians approximately \$1.4 Billion, as hydropower in the state was





roughly cut in half. This lost hydropower was made up with the purchase and combustion of additional natural gas. The electricity ratepayers spent an additional \$1.7 Billion to purchase natural gas over the drought period, which resulted in an additional 13 million tons of CO<sub>2</sub> emitted into the air—a 10% increase in total annual CO<sub>2</sub> emissions from California power plants, thus having a detrimental impact on the state's air quality.

*Whether there are ongoing or potential environmental impacts (e.g., impacts to endangered, threatened or candidate species or habitat).*

Drought is an additional stressor affecting endangered species already burdened by habitat loss, invasive species, and other conservation problems. Prolonged drought can lead to increased mortality and reduced reproduction in wildlife. Many species of migratory fish are endangered in California, notably salmon. Low river flows due to drought reduce access to spawning grounds. By reduction of impact to the American River water supply, this project will help protect 10 endangered fish species in this River.

California droughts severely affect forestry and wildlife that inhabits that environment. By increasing the City's use of water from its groundwater resources, the proposed project will help save surface water for wildlife during dry years.

*Whether there are ongoing, past or potential, local, or economic losses associated with current drought conditions (e.g., business, agriculture, reduced real estate values).*

Government and real estate-related industries are what Sacramento is known for, but Sacramento is home to many established and increasingly growing business sectors that generate new ideas, revenue, and exposure in our State Capital. The City's DOU is working with other City Departments to bolster those sectors by making sure the demand for water supply for their continued growth and expansion is provided.

The City of Sacramento and surrounding metropolitan areas have also been and will continue to be the largest population growth region in Northern California. As further drought impacts continue, decreased water quality and supply availability may result in supply rationing or interruptions for customers. The proposed project substantially increases the groundwater supply of the City and helps to prevent such drastic measures.

*Whether there are other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict).*

Reclamation, in collaboration with the City of Sacramento and five other non-federal partners, completed the American River Basin Study (ARBS) in April 2020. The Study, as part of the WaterSMART program, addresses 21<sup>st</sup> century challenges resulting from increased competition for the limited water supplies and climate change. The Study recognizes the growing imbalance between supply and demand water managers in the American River Basin continue to face.

Competition for water needed for agriculture, domestic use, and aquatic ecosystems, are leading to conflicts over water use. The City of Sacramento has invested substantial time and resources to participate in regional planning activities and has been a partner in successful management of



water resources. The proposed Project is an effective way of diversifying City's water resources that can help avoid major battles from emerging over the water rights during severe drought events.

*Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Describe any projected increases to the severity or duration of drought in the project area resulting from changes to water supply availability.*

The longest duration of drought (D1-D4) in California lasted 376 weeks beginning on December 27<sup>th</sup>, 2011 and ending on March 5<sup>th</sup>, 2019 and the City is still in midst of a moderate drought ([www.drought.gov](http://www.drought.gov)). Reclamation, in collaboration with the City of Sacramento and five other non-federal partners, completed the American River Basin Study (ARBS) in April 2020. The Study, as part of the WaterSMART program, addresses 21<sup>st</sup> century challenges resulting from increased competition for the limited water supplies and climate change. The Study acknowledges the current and growing imbalance between supply and demand water in the American River Basin. The City of Sacramento and surrounding metropolitan areas have been and will continue to be the largest population growth region in Northern California.

The Study further finds that climate change is the biggest threat to the sustainability of the American and Sacramento Rivers water supply (the American River is a major tributary to the Sacramento River). The Study anticipates substantial increases in year-round temperatures and reduction of runoff from the Sierra-Nevada's in winter months and decline in the snowpack.

#### **E.1.4. Evaluation Criterion D — Project Implementation**

*Describe the implementation plan of the proposed project. Include an estimated project schedule that shows the duration of the proposed work, major tasks, milestones, and dates.*

The FWTP Well Improvement Project is the final phase of the FWTP well construction. The FWTP Groundwater Well construction began in 2016, with the drilling, casing and gravel packing completed. However, due to unanticipated treatment of manganese required, the cost of the project went beyond allocated funds at the time and additional construction was stopped. The City will utilize the FWTP Well and Pumping Plant Basis of Design that was prepared by Wood Rodgers in February 2016 to complete the design of the well equipment and treatment. As it is noted in the below schedule, the design phase will be substantially completed by the time the award agreement for this grant request is executed. City of Sacramento will then complete all the administrative and permitting process to advertise the project for construction bids and award the contract to the lowest responsive and responsible bidder per the procurement requirement of the City.





**Table 2: Project Schedule**

Task Name	Start Date	End Date
Design RFP process and consultant selection	9/1/2020	12/30/2021
Design	1/1/2021	7/31/2021
Design review & permit process	8/1/2021	1/31/2022
Construction plans and specs	2/1/2022	3/25/2022
Bid process and Award of construction contract	3/25/2022	7/23/2022
Construction & closeout	7/23/2022	12/31/2023

*Describe any permits that will be required, along with the process for obtaining such permits.*

**Table 3: Anticipated Permits and Processes for Approval**

Anticipated Permit	Process for Approval or Issuance
City of Sacramento Building Department to issue appropriate building permits	Plans and Specifications to be reviewed and approved by City Building Department staff and issue appropriate building permits
State of California Department of Public Health approvals for drinking water standards	City to submit Water Quality reports for approval
Sacramento Municipal Utility District (SMUD) permit for electrical service	City to apply for issuance by SMUD
State Water Resources Control Board approval for storm water and test pumping discharge	City to apply for issuance by SWRCB

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

City of Sacramento completed the environmental and all the preliminary work for construction of this well in 2016. The City will utilize the Basis of Design prepared in 2016 but will need additional design work with new plans and specifications for construction documents.

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

No new policies are required to implement the project. City will process the following administrative actions:

1. Public Bid process to determine the lowest responsible bidder.
2. City Council to award construction contract (to the lowest responsible bidder).
3. City of Sacramento Building Dept. to issue appropriate building permits.
4. Sacramento Municipal Utility District (SMUD) to issue permit for electrical service.
5. City to apply for and receive National Pollution Discharge Elimination System (NPDES) permit (or amend existing) to dispose of test water.



6. State Water Resources Control Board to issue permit for storm water and test pumping discharge.
7. City to submit water quality reports to the State of California Department of Public Health for approval and compliance with acceptable drinking water standards.
8. Construction Management will be provided by a 3rd party consultant.
9. Grant Compliance: The City of Sacramento will be responsible for grant management and ensuring that all the Bureau of Reclamation requirements are met in a timely manner.

### **E.1.5. Evaluation Criterion E — Nexus to Reclamation**

#### ***How is the proposed project connected to a Reclamation project or activity?***

The City has a water rights settlement contract (Settlement Contract) entered in 1957 by the City and Bureau of Reclamation (BOR or Reclamation). The Settlement Contract resolved disputes between the City and BOR, benefiting both parties by limiting the City's rate and amount of diversion in exchange for the BOR's agreement to operate its facilities ensuring the City a permanent reliable supply of surface water. The City agreed to limit its diversions of Sacramento River water to a maximum of 81,800 AFY and to limit its diversions of American River water to a maximum of 245,000 AFY in the year 2030 as long as it did not divert more than the Maximum Combined Diversion from both sources. In return, the Settlement Contract requires BOR to make available in the rivers at all times enough water to enable the agreed-upon diversions by the City pursuant to the City's water rights.

The main source of water for the City of Sacramento are the Sacramento and American Rivers, which accounted for 80% based on historic water supply. This project provides an alternate source of water to the use of the surface water from these rivers.

#### ***Will the project benefit any tribe(s)?***

By reducing the impact on the surface water usage during dry years, this project will allow tribes supported by the Sacramento and American Rivers to benefit from this reduction.

#### ***Does the applicant receive Reclamation project water?***

The main source of water for the City of Sacramento are the Sacramento and American Rivers, which accounted for 80% of the total production based on historic water supply.

#### ***Is the project on Reclamation project lands or involving Reclamation facilities?***

This project is located in the American River Basin as noted below.

#### ***Is the project in the same basin as a Reclamation project or activity?***

Reclamation plays an integral role in water management in the American River Basin where the project is located by storing and conveying Central Valley Project and other contract supplies and operating Folsom Reservoir for regional and statewide natural resource protection and flood management. The City has a long history of collaborating with Reclamation to fulfill this



responsibility in a mutually beneficial way. Most recently, Reclamation, in collaboration with the City of Sacramento and five other non-federal partners, completed ARBS in April 2020. One of ARBS's objectives to align water management tools, strategies, and planning efforts of Reclamation and Water agencies in the Basin.

*Will the proposed work contribute water to a basin where a Reclamation project is located?*

Yes, providing an alternate source of water by the proposed project works towards the progress of making the City less reliant on surface water diversions from the American River water.

**E.1.5. Evaluation Criterion F — Department of the Interior and Bureau of Reclamation Priorities**

*Please address those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.*

*Creating a conservation stewardship legacy second only to Teddy Roosevelt. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment.*

The Project will use state of the art technology for well operation, management, and communications. Therefore, the Project utilizes science and engineering to better manage our scarce water resource.

*Prioritize DOI infrastructure needs to highlight: 1) Construction of infrastructure; 2) Cyclical maintenance; and 3) Deferred maintenance.*

Being a water infrastructure project, The FWTP Groundwater Well Improvement Project is in keeping with the DOI goal of "Construction of Infrastructure".

**BOR Priorities:**

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

The FWTP Groundwater Well Improvement Project will produce 4,840 AFY of local, high quality drinking water to reduce reliance on the scarce resources of the Sacramento and American River. This added capacity allows the City to provide a reliable source of water for the region it is serving.

***Addresses Ongoing Drought.***

The additional production of groundwater is directly aimed at better managing the ongoing and worsening droughts in California. As indicated in the UWMP, planning for FWTP Groundwater Well Improvement Project addresses both short term and long-term response to in a sustainable manner.



## SECTION 2: PROJECT BUDGET

### Standard Form 424 Budget Information A or C

This document is included in the separate submission with all of the City of Sacramento's completed Standard Form 424 copies.

#### A. Funding Plan and Letters of Commitment

The City of the Sacramento is committed to providing all the necessary costs above and beyond this grant application request to complete the projects. This is reflected in the draft resolution that is on the agenda for City Council's approval. A copy of the draft resolution is provided in Section 7 below. The City of Sacramento currently has allocated funding in its 2021 Budget in the Well Rehabilitation Program.

The City does not have any third-party funding sources or expected Federal funding sources outside of this application for assistance for the construction phase. No Letters of Commitment are included as there are no third-party funders for this project.

#### B. Budget Proposal

This project is included in the City's DOU five-year Capital Improvement Budget and there is sufficient funding in the 2021 Well Rehabilitation Program funding.

*Table 4: Total Project Costs by Source*

SOURCE	AMOUNT	Percentage
Costs to be reimbursed with the requested Federal funding	<b>\$1,500,000</b>	<b>20%</b>
Costs to be paid by the applicant	<b>\$6,011,900</b>	<b>80%</b>
Value of third party contributions	<b>\$0</b>	<b>0</b>
<b>Total Project Cost</b>	<b>\$7,511,900</b>	<b>100%</b>

*Table 5: Funding Sources*

Funding Sources	Amount
City of Sacramento- Cash Contributions	5,989,500
City of Sacramento value of in-house resources	\$22,400
<b>Subtotal: Non-Federal Funding</b>	<b>\$6,011,900</b>
Bureau of Reclamation Grant for this proposal	\$1,500,000
Other Funding	\$0
<b>Subtotal: Federal Funding</b>	<b>\$1,500,000</b>
<b>Total:</b>	<b>\$7,511,900</b>



FWTP Groundwater Well Improvement Project  
WaterSMART 2021 Drought Resiliency Projects

*Table 6. Project Budget*

BUDGET ITEM DESCRIPTION	COMPUTATION		QUANTITY TYPE	TOTAL COST
	\$/Unit	Quantity		
<b>Salaries and Wages</b>				<b>\$ 16,400</b>
Kathy Sananikone (Project Manager)	\$ 37	440	HR	\$ 16,400
<b>Fringe Benefits</b>				<b>\$ 5,100</b>
Kathy Sananikone (Project Manager)	\$ 11	440	HR	\$ 5,100
<b>Travel</b>				<b>\$ -</b>
N/A				\$ -
<b>Equipment</b>				<b>\$ 3,209,600</b>
Equalization/Mixing Tank	\$ 115,600	1	LS	\$ 115,600
Well Pump - Discharge Pipe and Appurtenances	\$ 92,500	1	LS	\$ 92,500
Well Pump - Motor	\$ 57,800	1	LS	\$ 57,800
Magnetic Meter Vault	\$ 40,500	1	LS	\$ 40,500
Orifice Plate Flow Meter and Appurtenances	\$ 11,600	1	LS	\$ 11,600
Sanitary Inlets and Appurtenances	\$ 17,400	1	LS	\$ 17,400
DI Pipe	\$ 144,400	1	LS	\$ 144,400
1" Copper Service Pipe	\$ 5,800	1	LS	\$ 5,800
Electrical - Transformer Pad, Service Entrance Switchboard, Appurtenances	\$ 23,200	1	LS	\$ 23,200
Electrical - MCC and VFD/SSS	\$ 202,200	1	LS	\$ 202,200
Electrical - Lighting, Receptacles, Grounding	\$ 57,800	1	LS	\$ 57,800
Manganese Treatment	\$ 2,215,400	1	LS	\$ 2,215,400
Chlorine Equipment and Feed Lines	\$ 86,700	1	LS	\$ 86,700
Fluoride Equipment and Feed Lines	\$ 138,700	1	LS	\$ 138,700
<b>Supplies/Materials</b>				<b>\$ -</b>
N/A				\$ -
<b>Contractual/Construction</b>				<b>\$ 4,275,800</b>
<b>Professional Services</b>				
Design & Planning	\$ 211,500	1	LS	\$ 211,500
Construction Management and Inspection	\$ 909,100	1	LS	\$ 909,100
<b>Construction</b>				
Mobilization/Demobilization	\$ 86,700	1	LS	\$ 86,700
Control Building - Structure and Appurtenances	\$ 288,800	1	LS	\$ 288,800
Control Building - HVAC, Ventilation	\$ 69,400	1	LS	\$ 69,400
Air Gap Structure	\$ 17,400	1	LS	\$ 17,400
Instrumentation	\$ 57,800	1	LS	\$ 57,800
PLC/SCADA	\$ 288,800	1	LS	\$ 288,800
Signal Pole	\$ 23,200	1	LS	\$ 23,200
Grading/Paving	\$ 231,100	1	LS	\$ 231,100
Drain System Piping	\$ 23,200	1	LS	\$ 23,200
Landscaping, Irrigation, Cover Material	\$ 117,800	1	LS	\$ 117,800
Permitting	\$ 52,000	1	LS	\$ 52,000
Disinfection, Testing and Commissioning	\$ 80,900	1	LS	\$ 80,900
Equipment Installation	\$ 681,800	1	LS	\$ 681,800
Contingency	\$ 1,136,300	1	LS	\$ 1,136,300
<b>Environmental</b>				<b>\$ 5,000</b>
BOR NEPA Clearance Processing	\$ 5,000	1	LS	\$ 5,000
<b>Other</b>				<b>\$ -</b>
N/A				\$ -
<b>TOTAL DIRECT COSTS</b>				<b>\$ 7,511,900</b>
<b>Indirect Costs</b>				<b>\$ -</b>
N/A				\$ -
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$ 7,511,900</b>



## **C. Budget Narrative**

The FWTP Well Improvement Project is the final phase of the FWTP well construction. The FWTP Groundwater Well construction began in 2016, but due to unanticipated treatment of manganese required, budget cost of the project went beyond allocated funds at the time and additional construction was stopped. The City has completed the preliminary design and is pursuing this grant opportunity to assist with the remaining design and construction costs.

### *Salaries and Wages & Fringe Benefits*

The Program Manager for this project will be Kathy Sananikone (who is an Assistant Engineer with the City's DOU) throughout design and construction. She will be assisted with support from construction management team including supervisor, inspector, and clerical staff.

### *Travel*

There will not be any travel expenses incurred as part of this project

### *Equipment*

The cost of all equipment needed is included in the construction cost. The equipment needed will be identified once the design has been completed.

### *Materials and Supplies*

The cost of all materials and supplies needed is included in the construction cost. The materials and supplies needed will be identified once the design has been completed.

### *Contractual*

The process for hiring a design consultant is scheduled to start in September 2020.

Construction contract will be awarded pursuant to final completion of engineering design and advertising for bids following the public contract code requirements once the construction documents have been completed.

Construction management of the project will be provided by a third-party consultant. The design support will be provided by the engineering design consult. The cost for professional services are based on industry standard for performing similar work in Sacramento area.

### *Environmental and Regulatory Compliance Costs*

Environmental process for this project has been completed. Design consultant hired for this project will provide the additional documents needed for National Environmental Policy Act (NEPA). Cost to cover NEPA documents is included in the project budget. Also, a \$5,000 budget has been allocated to cover the cost of processing the NEPA clearance by Reclamation.





FWTP Groundwater Well Improvement Project  
*WaterSMART 2021 Drought Resiliency Projects*

*Other Expenses*

All costs are reflected in the Budget Proposal Table.

*Indirect Costs*

There are no indirect costs involved in this project.

*Total Costs*

The proposed project's total cost is \$7,511,900, including the Federal Assistance Grant amount requested in this document.



## SECTION 3: ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

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

The City submitted a Notice of Exemption (NOE) with the Sacramento County Clerk Recorder's office on September 3<sup>rd</sup>, 2015. The project is not expected to have any impact on the surrounding environment other than the typical dust and noise generated from construction activity. Dust control will be mitigated through compliance with local Air Quality Management District (AQMD) requirements. Construction noise is not expected to exceed that allowed by local code. Earth disturbing work will be related to site work and building foundation and pipeline layout as described in the Technical Section.

*Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*

Project site is within the FWTP that has been in operation since 1964. There are no known species listed or proposed to be listed as a Federal threatened or endangered species or designated critical habitat in the project area.

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

Project site is within the FWTP. There are no known wetlands or other surface waters inside the project boundaries.

*When was the water delivery system constructed?*

The majority of the City's water delivery system was constructed in the mid 1900's with the FWTP being constructed in 1964.

*Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*



FWTP Groundwater Well Improvement Project  
WaterSMART 2021 Drought Resiliency Projects

No; the proposed project will not result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, canals, or flumes).

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

No; the FWTP or any other buildings, structures or features within the proposed project area are not listed or considered eligible for listing on the National Register of Historic Places and other.

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

Project site is within the FWTP and there are no known archeological sites in the proposed project area.

*Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*

No; the proposed project will NOT have a disproportionately high and adverse effect on low income or minority populations. In fact, the proposed project will have a **POSITIVE** effect on the local (and statewide) population, including low income and minority populations. The local population will benefit from high quality, cost effective local drinking water and the drought stricken state-wide population will benefit from the increased availability of surface water from the Sacramento and American River.

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

Project site is within the FWTP and will NOT limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

*Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

No; 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.



## SECTION 4: REQUIRED PERMITS OR APPROVALS

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

*Table 7: Permits Required*

Anticipated Permit	Process for Approval or Issuance
City of Sacramento Building Department to issue appropriate building permits	Plans and Specifications to be reviewed and approved by City Building Department staff and issue appropriate building permits
State of California Department of Public Health approvals for drinking water standards	City to submit Water Quality reports for approval
Sacramento Municipal Utility District (SMUD)	City to apply for issuance by SMUD
State Water Resources Control Board approval for storm water and test pumping discharge	City to apply for issuance by SWRCB



## SECTION 5: EXISTING DROUGHT CONTINGENCY PLAN

The City of Sacramento has a Water Shortage Contingency Plan and a Water Conservation Plan, both of which can be found via links provided in Appendix 3.



## SECTION 6: LETTERS OF SUPPORT

**Regional Water Authority**  
*Building Alliances in Northern California*

5620 Birdcage Street  
Suite 180  
Citrus Heights, CA 95610

Tel: (916) 967-7692  
Fax: (916) 967-7322  
[www.rwah2o.org](http://www.rwah2o.org)

July 22, 2020



Kerry Schmitz, Chair  
Sean Bigley, Vice Chair

Mr. Reichert  
Bureau of Reclamation  
Financial Assistance Support Section  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, Co 80225

### **Members**

California American Water  
Carmichael Water District  
Citrus Heights Water District  
Del Paso Manor Water District  
El Dorado Irrigation District  
Elk Grove Water District  
Fair Oaks Water District  
Folsom, City of  
Golden State Water Company  
Lincoln, City of  
Orange Vale Water Company  
Placer County Water Agency  
Rancho Murieta Community Services District  
Roseville, City of  
Sacramento, City of  
Sacramento County Water Agency  
Sacramento Suburban Water District  
San Juan Water District  
West Sacramento, City of  
Yuba City, City of

### **Associates**

County of Placer  
El Dorado County Water Agency  
Sacramento Area Flood Control Agency  
Sacramento Municipal Utility District  
Sacramento Regional County Sanitation District

Dear Mr. Reichert,

The Regional Water Authority (RWA) strongly supports the City of Sacramento's WaterSMART Drought Response Program grant application to the US Department of the Interiors, Bureau of Reclamation to implement drought resiliency projects.

RWA is a joint powers authority, formed to serve and represent regional water supply interests and to assist its members in protecting and enhancing the reliability, availability, affordability, and quality of water resources. Our members include cities, water and irrigation districts, mutual water companies, investor-owned water utilities and community services districts. One of RWA's greatest strengths is the diversity of its members united for collective action. The City of Sacramento has been a founding member of the RWA since it was established in 2001. As a member, RWA has worked closely with City of Sacramento and have partnered in several grant funding projects.

The grant proposal is to implement drought resiliency projects that help build long-term resilience to drought and reduce the need for emergency response actions. A well-established principle is that it is far more cost effective to implement projects that provide proactive support to drought planning in advance of a crisis. Eligible projects under this grant include developing alternative sources of water supply to build resilience to the impacts of drought such as construction of groundwater wells to provide back-up water supplies.

The City of Sacramento is requesting grant funding to complete the design and construction of a groundwater well that will serve to provide up to 3,000 gallons per minute of potable water. This is a significant volume and will be an important asset to the City of Sacramento and the region's water supply reliability.

Providing grant funding for the City of Sacramento's proposed WaterSMART Drought Program will further efforts to build long-term resilience to drought by expanding groundwater resource use.

Sincerely

James Peifer  
Executive Director





FWTP Groundwater Well Improvement Project  
WaterSMART 2021 Drought Resiliency Projects



**Sacramento Groundwater Authority**  
*Managing Groundwater Resources  
in Northern Sacramento County*

5620 Birdcage Street, Suite 180  
Citrus Heights, CA 95610

Tel: (916) 967-7691  
Fax: (916) 967-7322  
[www.sga20.org](http://www.sga20.org)

July 22, 2020

Mr. Reichert  
Bureau of Reclamation  
Financial Assistance Support Section  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, Co 80225

Dear Mr. Reichert,

The Sacramento Groundwater Authority (SGA) strongly supports the City of Sacramento's WaterSMART Drought Response Program grant application to the US Department of the Interiors, Bureau of Reclamation to implement drought resiliency projects.

SGA is the groundwater sustainability agency for the portion of the North American Subbasin within Sacramento County. Our board members include cities, water and irrigation districts, mutual water companies, investor-owned water utilities and community services districts.

The grant proposal is to implement drought resiliency projects that help build long-term resilience to drought and reduce the need for emergency response actions. A well-established principle is that it is far more cost effective to implement projects that provide proactive support to drought planning in advance of a crisis. Eligible projects under this grant include developing alternative sources of water supply to build resilience to the impacts of drought such as construction of groundwater wells to provide back-up water supplies.

The City of Sacramento is requesting grant funding to complete the design and construction of a groundwater well that will serve to provide up to 3,000 gallons per minute of potable water. This is a significant volume and will be an important asset to the City of Sacramento and the region's water supply reliability.

Providing grant funding for the City of Sacramento's proposed WaterSMART Drought Program will further efforts to build long-term resilience to drought by expanding groundwater resource use.

Sincerely

James Peifer  
Executive Director

California American Water  
Carmichael Water District  
Citrus Heights Water District  
City of Folsom  
City of Sacramento  
County of Sacramento  
Del Paso Manor Water District  
Fair Oaks Water District  
Golden State Water Company  
Natoma's Central Mutual Water Company  
Orange Vale Water Company  
Rio Linda / Elverta Community Water District  
Sacramento Suburban Water District  
San Juan Water District  
Agricultural and Self-Supplied Representative



## SECTION 7: OFFICIAL RESOLUTION

The resolution to authorize the grant application for water recycling and WaterSMART Drought Response Program is on the City Council agenda for August 18<sup>th</sup>, 2020, a draft of which is attached here in.

### **RESOLUTION NO. 2020 –**

Adopted by the Sacramento City Council

**August 18, 2020**

### **Grant Application for WaterSMART Drought Response Program: Drought Resiliency Projects 2021 Grant Program**

#### **BACKGROUND**

- A. The United States (U.S.) Department of the Interior WaterSMART (Sustain and Manage America's Resources for Tomorrow) Program establishes a framework to provide Federal leadership and assistance for using water efficiently, integrating water and energy policies to support the sustainable use of all natural resources, and coordinating the water conservation activities of various Interior bureaus and offices.
- B. The U.S. Bureau of Reclamation (USBR) Drought Response Program is an important part of the WaterSMART Program. Through the Drought Response Program, USBR provides assistance to states, tribes, and local governments to prepare for and address drought in advance of a crisis. By cost sharing with USBR on Drought Resiliency Projects, agencies can increase the reliability of water supply; improve water management; implement systems to facilitate the voluntary sale, transfer, or exchange of water; and provide benefits for fish, wildlife, and the environment to mitigate impacts caused by drought.
- C. The City's Department of Utilities is seeking approval to apply for up to \$1,500,000 in grant funding from the Fiscal Year (FY) 2020/21 WaterSMART: Drought Response Program: Drought Resiliency Projects administered by the USBR. If awarded, the funding will be used to support the City's Well Rehab Program.
- D. If awarded, there is a cost match requirement of 50 percent of total project costs. There are sufficient funds in the Well Rehab Program (Z14110100, Fund 6005) to meet the cost match requirement.

#### **BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:**

- Section 1 The City Manager or the City Manager's designee, the Director of the Department of Utilities, is authorized to:
  - A. Apply for grant funding through the USBR WaterSMART Drought Response Program: Drought Resiliency Projects for FY2020/21 in an



FWTP Groundwater Well Improvement Project  
*WaterSMART 2021 Drought Resiliency Projects*

amount up to \$1,500,000.

- B. Sign the funding agreement if the grant is awarded, prepare the necessary data, and execute all reporting, payment requests, and documentation of compliance applicable to the grant and completion of the project.
- C. If the grant is awarded, adjust the revenue and expenditure budgets in the Well Rehab Program (Z14110100, 6205) for an amount up to \$1,500,000.



## Appendix 1- Proof of SAM Registration

**Use the SAM Status Tracker Now**

Check registration status by typing in a DUNS Number.

DUNS Number  Plus 4 (Optional)

Or, check registration status by typing in a CAGE Code.

CAGE Code

SACRAMENTO, CITY OF

**Status: Active**

Your registration was activated on Mar 25, 2020. It expires on Mar 25, 2021 which is one year after you submitted it for processing.

Core Data	Assertions	Reps & Certs	POCs	Submit	Processing	Active
Completed	Completed	Completed	Completed	Completed	Completed	Completed



## Appendix 2 - Notice of Exemption

### City of SACRAMENTO

#### NOTICE OF EXEMPTION

TO: X County Clerk  
County of Sacramento

— Office of Planning and Research  
1400 10th Street, Room 121  
Sacramento, CA 95814

FROM: City of Sacramento  
Community Development Dept.,  
Planning Division  
300 Richards Boulevard, 3<sup>rd</sup> Flr.  
Sacramento, CA 95811

**ACTIVITY/PROJECT TITLE:** Fairbairn Water Treatment Plant Groundwater Well (Z14120200)

**ACTIVITY/PROJECT LOCATION:** 7501 College Town Drive (APN: 005-0010-011) at the E.A. Fairbairn Water Treatment Plant

**CITY:** Sacramento

**COUNTY:** Sacramento

**DESCRIPTION OF ACTIVITY/PROJECT:** The project consists of construction of a new potable well at the northeast corner of the Fairbairn Water Treatment Plant property located at 7501 College Town Drive. The well site will be constructed on an existing landscaped area that is approximately one acre. Other than existing electrical utilities, grit basin, turf, and ornamental trees there are no other improvements. The well will be sited on the east side of this area, approximately 40 feet southeast of the existing grit basin. An exploratory test hole was drilled on the site in March 2015. Data collected from the test hole drilling show that a well drilled to a depth of 300 feet could produce approximately 3,000 gallons per minute. The footprint of the entire well site is not expected to exceed 7500 square feet and the well will be connected directly to the City's water distribution system to an existing potable pipeline.

**NAME OF PUBLIC AGENCY APPROVING ACTIVITY/PROJECT:** City of Sacramento

**NAME OF PERSON/AGENCY CARRYING OUT ACTIVITY/PROJECT:** City of Sacramento, Dept. of Utilities;  
1395 35<sup>th</sup> Avenue; Sacramento, CA 95822; Contact: Mark Elliott (916) 808-8894

**THE CITY OF SACRAMENTO FINDS THAT THE ACTIVITY/PROJECT IS EXEMPT.**

Exempt Status: (Check One)

- ☐ Activity is not a project as defined in Section 15378 [Section 15061(b)(1)]
- ☐ Activity has no potential for causing a significant effect on the environment [Section 15061(b)(3)]
- ☐ Statutory Exemption [Section 21080(b)(8)]
- ☐ Ministerial Exemption [Section 15268]
- ☐ Declared Emergency Exemption [Section 15269(a)]
- ☐ Emergency Project [Section 15269(b) and (c)]
- ☒ Categorical Exemption-State Class 1 & 2 and Section Number(s) 15301(b & d) and 15303

**REASONS WHY ACTIVITY/PROJECT IS EXEMPT:** **15301 Existing Facilities** - The project consists of operation and minor alteration of existing utilities systems (water treatment plant). **15303 New Construction** - the project also consists of the new construction and location of existing limited numbers of new, small facilities or structures and the installation of new equipment and facilities (new well at existing water treatment plant).

**CONTACT PERSON:** Scott Johnson, Associate Planner

**TELEPHONE:** (916) 808-5842

**SIGNED:**

**DATED:**

9-3-15





## Appendix 3 – Water Shortage Contingency Plan & Water Conservation Plan

The Water Shortage Contingency Plan (Chapter 8 of the UWMP) and relevant attachments can be accessed at this link:

<https://www.dropbox.com/s/xieh7rxgh3dlkkv/City%20of%20Sacramento%20WSCP%20with%20Relevant%20Appendicies.pdf?dl=0>

The Water Conservation Plan (Appendix R in the UWMP) can be accessed at this link:

[https://www.cityofsacramento.org/-/media/Corporate/Files/DOU/Reports/Water\\_Conservation-Plan-City\\_of\\_Sac-Final.pdf?la=en](https://www.cityofsacramento.org/-/media/Corporate/Files/DOU/Reports/Water_Conservation-Plan-City_of_Sac-Final.pdf?la=en)