



City of Folsom Drought Resiliency Project

August 5, 2020

FY 21 WaterSMART Drought Resiliency Program: Drought Resiliency Projects

Funding Opportunity Announcement No: BOR-DO-20-F002

Applicant:

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Executive Summary

Date: August 5, 2020

Applicant Name: City of Folsom

City: Folsom

County: Sacramento

State: California

Project Summary: The City of Folsom, California is requesting \$750,000 for the completion of a suite of three drought resiliency projects: the Ashland Water Rehabilitation Project No. 1, the Water Treatment Plant Backwash and Recycled Water Capacity Project, and the Empire Ranch Non-Potable Water Well project. The Ashland Water Rehabilitation Project No. 1 will rehabilitate and/or replace 1,800 lineal feet of existing 18-inch and 21-inch potable waterline through a combination of both open-cut and trenchless technologies. The Water Treatment Plant Backwash and Recycled Water Capacity Project will replace and upsize the City's water treatment plant (WTP) reclaimed backwash water pumps and pipeline. The Empire Ranch Non-Potable Water Well project provides a new well and associated piping to provide groundwater in lieu of surface water to irrigate the Empire Ranch Golf Course. Drought has long been a problem for the City of Folsom which was most recently impacted by the 2012-2016 California statewide drought. As of July 2020, the City of Folsom is experiencing moderate to severe drought with potential impacts to the City's fire readiness, wildlife, agriculture, and tourism among other things. Combined, these three projects will increase the reliability of water supplies, improve water management, and provide benefits to the Central Valley Project. These projects are supported by the Regional Water Reliability Plan (RWRP), the Regional Drought Contingency Plan (RDCP), the City of Folsom 2015 Urban Water Management Plan (UWMP), and City of Folsom FY 2019-2020 / FY 2020-2021 Operating Budget and Capital Improvement Plan (CIP).

Project Length: The proposed suite of drought resiliency projects is set to begin August 2020 and will be completed at the end of September 2021. Project construction will not begin before July 2021.

Federal Facility: No

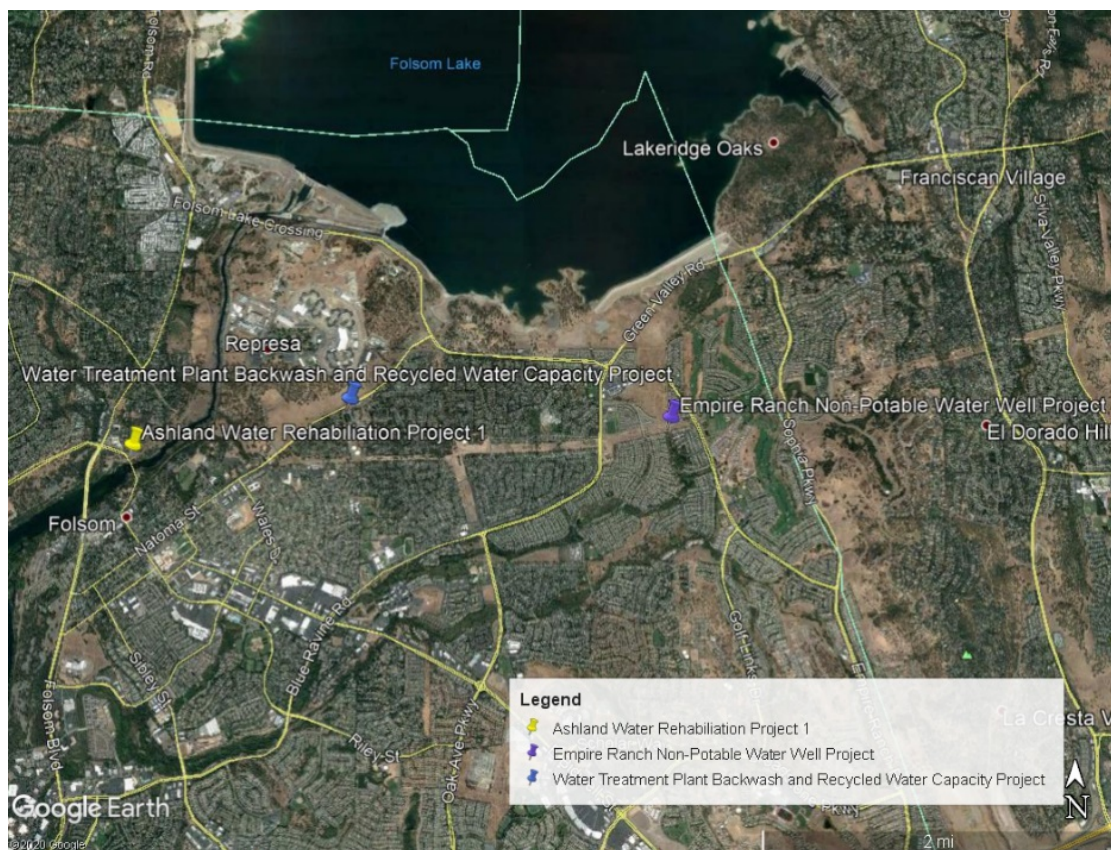
Project Location

The City of Folsom's 2021 Drought Resiliency Project consists of a suite of three components all located near Folsom Reservoir and within Folsom city limits. The aerial photos below show the locations of the projects with latitudes and longitudes for each component indicated. The Ashland Water Rehabilitation Project is located near the City's historic Rainbow Bridge, crossing the American River downstream from Folsom Dam. The Water Treatment Plant Backwash and Recycled Water Capacity Project is located at the City's water treatment plant located across from the Folsom State Prison entrance. The Empire Ranch Non-Potable Water Well Project is located across the street from the Empire Ranch Golf Course.

Coordinates for projects are as follows:

- Ashland Water Rehabilitation Project No. 1 (38° 40' 59.19" N, 121° 10' 34.33" W)
- Water Treatment Plant Backwash and Recycled Water Capacity Project (38° 41' 13.35" N, 121° 9' 7.76" W)
- Empire Ranch Non-Potable Water Well Project (38° 41' 7.50" N, 121° 7' 0.31" W)

Figure 1: City of Folsom 2021 Drought Resiliency Projects Map



Technical Project Description

The City of Folsom is proposing a suite of three projects that will help the City develop and maintain long-term drought resilience. During the 2012-2016 drought in California, the City collaborated with Regional Water Purveyors through the Regional Water Authority (RWA) to develop a Regional Water Reliability Plan (RWRP) and a Regional Drought Contingency Plan (RDCP). The RDCP was a regional planning effort funded in partnership with the Bureau of Reclamation through its WaterSMART Drought Response Program. The City of Folsom was one of five partner agencies that helped develop the RDCP. Included in the RDCP analysis are water supply vulnerabilities (low reservoir storage and Central Valley Project allocation shortages) and potential mitigation actions (interties, wells, and conjunctive use). The RWRP and RDCP are discussed at length in Evaluation Criteria B. When combined, the three projects will build resiliency to drought while also:

- Increasing the reliability of water supplies;
- Improving water management; and
- Providing benefits to the Central Valley Project.

The three projects are described in detail below.

Ashland Water Rehabilitation Project No. 1

This project involves rehabilitating and/or replacing 1,800 lineal feet of existing 18-inch and 21-inch potable waterline through a combination of both open-cut and trenchless technologies. The current pipeline was taken out of service when staff determined during a pipeline inspection that the interior of the existing steel pipe has a coal-tar lining, which was used quite often for lining steel pipe in the 1970's. The coal-tar lined steel pipe will be replaced with either polyvinyl chloride pipe (PVC) or high-density polyethylene (HDPE) pipe. Over time, it has been found that coal-tar lining can slowly leach contaminants into the water system and create water quality concerns. This can also lead to taste and odor issues as well.

This section of pipe also serves as an intertie between the City and San Juan Water District and allows the City to receive treated water from San Juan Water District. In addition, this project includes Supervisory Control and Data Acquisition (SCADA) upgrades to the existing Rainbow Bridge pressure reducing station, as well as upgrades to other water facilities such as valves, blow-offs and air relief valves. The SCADA upgrades will allow the City to remotely monitor and control the intertie that allows the City to receive water from San Juan Water District during drought situations or emergency water needs due to City infrastructure emergencies.

Water Treatment Plant Backwash and Recycled Water Capacity Project

This project will replace and upsize the City's water treatment plant (WTP) reclaimed backwash water pumps and pipeline. Backwashing is the process used to clean the filters at the City's WTP. The Environmental Protection Agency (EPA) allows water agencies to reuse up to 10% of the water used for backwashing based on the WTP design capacity (50 million gallons per day). Currently, the City can only reuse 4-5% of backwash water capacity due to the existing pumps and piping, which have limited capacity.

Because the City is unable to return up to 3.0 MGD of recycled backwash water (RBW) to the headworks of the WTP, daily operational changes are required to reduce backwash flows to 1.0 MGD. One of the changes involves storing recycled backwash water in the RBW pond longer than necessary, which results in less recycled backwash water returning to the headworks of the WTP. Due to the limited capacity of the existing pumps and piping, storing water in the RBW ponds during peak summer demands could result in spilling recycled backwash water into a tributary of the American River. Under the current backwash operations of 1.0 MGD, the City misses the opportunity to return up to 112 AFA to the headworks of the WTP. Under the 3.0 MGD scenario, this amount is 336 AFA. Based on these two scenarios, all the water the City is unable to return to the headworks is lost to the City's wastewater system. This is equivalent to 0.31 acre-feet per day under the 1.0 MGD operations and 0.92 acre-feet per days under the 3.0 MGD operations. The table below shows the differences in backwash capacity under the various operating scenarios up to build-out conditions and full treatment capacity of 50 MGD.

Table 1: Volume and percentage of backwash under various treatment scenarios

Backwash Rate (MGD)	% of Backwash Rate Allowed by EPA	Current System % of Recycled Capacity	% Recycled Capacity with Upgrades	Volume of water not recycled (AF)
1.0 (current daily average)	10%	4-5 %	10%	112
3.0 (current daily maximum allowed)	10%	4-5%	10%	336
5.0 (build-out maximum allowed)	10%	4-5%	10%	560

Only being able to reuse 4-5% of the water limits the City's ability to backwashing efficiently and requires the City to discharge 112 acre-feet (normal day conditions) up to 336 acre-feet (peak summer conditions) to the sewer system on an annual basis. At 10% reuse, the City will require up to 336 AFA less from the Bureau reservoir which would allow the resource to be beneficially utilized further down in the system under current conditions with future build-out conditions likely to be 560 AFA in savings. In addition to decreasing the demand on the reservoir, increasing the recycled water capacity greatly reduces the City's risk for the potential to overflow the recycled backwash pond, which would flow into the local storm drain system.

Empire Ranch Non-Potable Water Well

One option to address potential water shortages during drought conditions is through the development of a supplemental groundwater resource either within the City or elsewhere. The City received a Proposition 84 Local Groundwater Assistance Fund Grant in April 2014 from the Department of Water Resources. The purpose of this study was to implement recommendations from earlier groundwater studies and expand the understanding and available data for the groundwater resource located in northeastern Folsom. The City now has a better understanding of groundwater resources that could be an important supplemental supply in the City's overall integrated water supply system. The groundwater resource could provide non-potable water to augment the treated surface water consumed by the City of Folsom's non-potable/recycled water "purple pipe."

The City developed the Humbug Well in August 2015, across the street from the Empire Ranch Golf Course. Typically, during the months of April through September, the Empire Ranch Golf Course will receive treated water for golf course irrigation purposes. In the last ten years, this amount has averaged 90 acre-feet per year. The remaining water supply for the golf course is provided by private wells located on golf course property. In an effort to supplement the need for treated water to irrigate the golf course, the installation of a new well and the associated piping could provide groundwater in lieu of surface water.

Approximately 1,100 lineal feet of new six- or eight-inch PVC pipe would convey the groundwater from the new well to the existing non-potable water system connected to the golf course. In addition to the PVC pipeline, motors, pumps, electrical and the associated pump controls will be installed.

Performance Measures

The following performance measures are proposed to quantify the proposed benefits of each of the projects described above. For the Ashland Rehabilitation Project No. 1, the City would measure the rate and volume of treated groundwater received from SJWD which directly offsets the amount of surface water required to meet the same demands. For the Water Treatment Plant Backwash and Recycled Water Project, the City would monitor and measure the amount of water discharged to the sewer system during the backwash operations. This amount would be compared to the amount currently discharged to the sewer system, with the difference being the savings. For the Empire Ranch Non-Potable Water Well, the City could measure two indices. One is the amount of groundwater delivered to the Empire Ranch Golf Course and the other is the metered connection from the City's potable water system (surface water supply) to the golf course's irrigation system. The meter on the well would indicate how much groundwater was delivered to the golf course in lieu of surface water supplies. The metered data at the point of connection from the City's potable water supply to the golf course irrigation system would allow the City to compare historic potable deliveries for irrigation purposes to deliveries with the well project in place. Since these performance measures can only be measured upon project completion and operating infrastructure, this City could begin tracking this data once the projects are fully operating.

Evaluation Criteria

Evaluation Criteria A – Project Benefits

As one of the partner water agencies involved in developing a Regional Drought Contingency Plan under Reclamation's WaterSMART Drought Response Program in 2016, the City identified current and future water supply reliability issues. These included impacts related to droughts and the availability of surface water supplies from Folsom Reservoir. Drought specific vulnerabilities include low reservoir storage, low flows in the American River, Central Valley Project shortage allocations, and water rights curtailments by the State Water Resources Control Board. The following information provides the project benefits for each of the projects.

Ashland Water Rehabilitation Project No. 1

This project helps build long-term resilience to drought by providing the opportunity for the City to receive water supplies from a neighboring agency that has access to surface and groundwater supplies. During times of drought-related water shortages San Juan Water District (SJWD) could receive treated groundwater from Sacramento Suburban Water District (SSWD) for use in its distribution system and leave water in Folsom Reservoir for the City to use or SJWD could pump the treated groundwater into the City's water distribution system, allowing the City to leave surface water in Folsom Reservoir. By receiving treated groundwater, there is the potential to leave surface water supplies in Folsom Reservoir for other uses, including environmental purposes.

The proposed intertie improvements have a capacity of 3.1 million gallons per day (MGD), which is equivalent to 4,170 acre-feet annually (AFA) with two supply sources. There are two potential water supply sources that could be delivered to the City. The first is treated surface water from SJWD. The second source, which would be used during drought conditions or water shortage conditions, is treated groundwater from SSWD delivered to SJWD and pumped from SJWD to the City. The proposed capacity of treated groundwater that could be made available to the City through this intertie is approximately

1.6 MGD, which is equivalent to 2,152 AFA. By using treated groundwater through this intertie, this would leave 2,152 AF in Folsom Reservoir for the benefit of the Central Valley Project and its operations. Not only does this project provide drought relief, it could also be used in emergency conditions unrelated to drought. An example would be if another pipeline in the City were to break and the City needed to deliver treated water in from a different source.

This project provides multiple benefits that includes drought resiliency, operational flexibility, and water supply benefits to the Central Valley Project. In times of drought when surface water supplies are limited in Folsom Reservoir, this intertie would allow the City to receive treated groundwater while leaving surface water in Folsom Reservoir for other beneficial uses by Reclamation, including environmental benefits. By using treated groundwater and leaving surface water in Folsom Reservoir, this can also promote water transfers to other water users within the Central Valley Project. Overall, the proposed project could supply up to 10% of the City potable water demand over the next 10 years.

Water Treatment Plant Backwash and Recycled Water Capacity Project

This project helps build long-term resilience to drought by providing the opportunity for the City to reduce operational water demands for its backwash process at the water treatment plant (WTP). Under existing infrastructure conditions, the City can only recycle 4-5% of its backwash water that is used to clean the water filters at the WTP, which is less than the 10% allowed by the Environmental Protection Agency. Due to limited capacity of the backwash pumps and piping system, the system is only capable of returning 1 – 1.5 MGD of recycled backwash water to the headworks of the WTP. During peak summer conditions, the City would be allowed to return up to 3.0 MGD to the headworks of the WTP. Based on the time of year (winter versus summer), the City discharges up to 336 acre-feet to the wastewater system on an annual basis. Capacity improvements to the recycled backwash process would allow the City to reduce annual discharges to the wastewater system by up to 336 acre-feet annually.

This project provides multiple benefits that includes drought resiliency, operational flexibility, and water supply benefits to the Central Valley Project. In times of drought when surface water supplies are limited in Folsom Reservoir, this project would leave surface water in Folsom Reservoir for other beneficial uses by Reclamation, including environmental benefits. By improving the recycled water backwash capacity to fully utilize the 10% return water allowed by EPA, the City could save up to 336 AFA because this amount of water would not be lost to the wastewater system and could remain in Folsom Reservoir for other beneficial uses by Reclamation.

Empire Ranch Non-Potable Water Well

In 2014, the City received a Proposition 84 Groundwater Assistance Fund Grant from the Department of Water Resources. The purpose of this study was to implement some recommendations from earlier groundwater studies and expand the understanding and available data for the groundwater resource located in northeastern Folsom. As part of the groundwater study, the City developed and installed the Humbug Well near the Empire Ranch Golf Course. Based on Aquifer test results, initial pump recommendations were developed for eventual outfitting of the Humbug well for use. The aquifer test results indicate that the well can be equipped with a pump capable of producing 150 gallons per minutes (GPM), which is equivalent to 0.66 acre-feet per day, or approximately 20 acre-feet per month.

The goal of this well project is to supplement surface water supplies during the peak irrigation season for the golf course in the months of April through September. In an effort to supplement the need for treated water to irrigate the golf course, the installation of a pump and the associated piping at the Humbug Well could provide groundwater in lieu of surface water. Based on the 10-year historic average of potable water use by the Golf Course during the months of April through September, there is an annual average demand of 90 acre-feet of potable water for irrigation purposes to supplement the demands that cannot be met by the existing wells on the golf course. The new Empire Ranch non-potable water well would reduce surface water demands from Folsom Reservoir and leave this water in the reservoir for other beneficial uses of the Central Valley Project. Such a groundwater resource would have potential supply benefits for the City and other Sacramento Groundwater Authority (SGA) members and could allow the City to forgo some of its American River surface water entitlement with potential environmental benefits for the Lower American River and/or Bay-Delta. The figure below shows the location of the proposed well site relative to Folsom Reservoir.

Figure 2: Empire Ranch (Humbug) Water Well Location



Aquifer testing activities, including step draw down and constant rate pumping tests, were conducted from October 5 to 10, 2015 in the Humbug Well (pumping well). The tests were conducted after the well was developed in August 2015 and the groundwater level had stabilized. These aquifer tests were used to estimate specific capacity (SC), transmissivity (T) and storativity (S) of the unconfined aquifer. The pump intake for the Humbug Well was at 77 feet below ground surface, and about 10 feet below the top of the bedrock. Groundwater from the tests was discharged to a holding pond used for irrigation on a golf course about 1,000 feet east of the well.

The East Natoma Well was used as an observation well during the pump test. Due to the distance of the East Natoma Well relative to the Humbug Well (approximately 1,500 feet), and the high permeability of the aquifer material, negligible response was observed in the East Natoma Well during the pumping tests. The fluctuations observed in the East Natoma Well during the pump test were similar to the responses observed during the baseline monitoring of the Humbug and East Natoma Wells, with a maximum fluctuation from the median depth to water of 0.24 feet. Therefore, the East Natoma Well data were not used in pump test analysis. The tests proceeded as per the work plan, with changes noted below:

- A 3-1/2-hr step drawdown test was performed on the Humbug well
- A 72-hour constant-rate pumping test was performed on the Humbug well.
- Water level recovery measurements were not measured for the same length of time that the wells were pumped. Water levels were measured in both wells until they had recovered to at least 80 percent of the pre-pumping water levels.
- The target pumping rates used for the constant-rate pumping tests were selected based on the well development data. During development, the Humbug Well was pumped at approximately 70 gpm.
- The step drawdown test pumping rates for the Humbug Well were planned based on previous well capacities. However, the results of the step drawdown test showed the Humbug Well demonstrated a lower than expected well capacity, as the third step's flow rate exceeded the well capacity.
- Background water level elevation data was collected in the Humbug and E Natoma Wells over an approximate month-long period (September 2015). These datasets were used as background data for both pumping tests.
- Groundwater extracted from the wells during the aquifer tests was discharged to a holding pond used for irrigation on a golf course about 1,000 feet east of the well. This groundwater was discharged in a manner that it would not recharge the aquifer during the test.

Monitoring and aquifer testing activities were performed on the Humbug Well to evaluate well performance and facilitate estimation of aquifer parameters. Prior to the pumping tests, background monitoring was conducted to evaluate external influences (i.e., those not related to pumping) on the Humbug Well for a period of approximately one month.

A step drawdown pumping test followed by a constant rate pumping test were conducted in the Humbug Well. The step drawdown test results were used to assess well performance (related to head losses and specific capacity) and provide a basis to select a preferred pumping rate for the longer-term constant rate test. The constant rate test results were used to calculate transmissivity and assess storativity within the aquifer surrounding the pumped well.

Step drawdown test results support assessment aquifer and well head losses associated with stressing the aquifer by pumping at various rates. Well response (drawdown) during several pumping intervals of relatively equal duration, referred to as steps, is measured and plotted versus time. Three steps were performed with pumping rates of approximately 100 gpm, 150 gpm, and 200 gpm. The constant rate pumping test stressed the aquifer through pumping at a consistent rate of 150 gpm for an extended period of time—a duration of approximately 72 hours. At the completion of the test, water level recovery data was measured for approximately one hour after the pump was shut off.

Based on Aquifer test results, the Humbug Well was evaluated for potential outfitting with a pump for long term use. The aquifer test results indicate that the well can be equipped with a pump capable of producing up to 150 gpm. The well was constructed with 10-inch diameter blank casing and well screen to a depth of 82 feet and can accommodate a high-speed submersible pump and motor capable of producing 150 gpm. A pump/motor that produces this flow capacity will be 6-inches diameter, will operate at a rotational speed of 3450 rpm and is readily available from multiple manufacturers.

As a member of the Sacramento Groundwater Authority, a joint power authority formed in 1998 to manage the groundwater basin on Sacramento County, the City would report results as part of the SGA groundwater management plan and the newly required Groundwater Sustainability Plan (GSP) under the Sustainable Groundwater Management Act (SMGA) in California. As part of the GSP, a minimum of monthly water level measurements would be recorded, and the volume of water produced would be provided on a monthly time step. Additional water level measures would be taken at the existing well on the golf course and the East Natoma well site. This data will be used to better understand any potential impacts to the neighboring well sites and the associated operations at each site.

Various mitigation actions could be implemented if there are impacts to the neighboring well sites. These actions include reducing the rate of pumping if the well sites are all operating during the same times. The City could also modify the pumping operations so that the Empire Ranch Well (Humbug Well) pumps and fills the water holding pond on the golf course during times when the existing golf course pumps are operating. These actions would be coordinated with the Empire Ranch Golf Course.

Evaluation Criterion B—Drought Planning and Preparedness

The City's efforts to address drought and drought planning are contained in multiple planning documents:

- Regional Water Reliability Plan (RWRP)
- Regional Drought Contingency Plan (RDCP)
- City of Folsom 2015 Urban Water Management Plan (UWMP)
- City of Folsom FY 2019-2020 / FY 2020-2021 Operating Budget and Capital Improvement Plan (CIP)

Explain how the applicable plan addresses drought

The City of Folsom has a long history of planning and preparing for drought periods and its consequences. Drought is addressed through the RWRP and RDCP as well as the UWMP.

The City collaborated with Regional Water Purveyors through the Regional Water Authority (RWA) during the 2012-2016 California-wide drought to develop the RWRP and RDCP. The RWRP and RDCP are closely related planning efforts to evaluate the vulnerabilities of the water resources of the Sacramento

region and to identify the most promising opportunities to improve long-term water supply reliability at the agency, sub-regional, and regional levels. The RDCP focuses on mitigation actions and near-term responses specifically related to drought conditions. The RWRP goes beyond the scope of the RDCP by evaluating a broader set of vulnerabilities and mitigation actions.

As a member agency of both plans, Folsom's plans to address drought are consistent with and rely on the RWRP and RDCP. The RDCP includes a prioritized list of actions to improve water supply reliability and makes recommendations for future implementation. Included in the analysis are water supply vulnerabilities (low reservoir storage and Central Valley Project allocation shortages) and potential mitigation actions (interties, wells, and conjunctive use). The RWRP goes further and outlines specific long-term measures for the City and its partners to take in order to increase water reliability.

The City of Folsom adopted the 2015 UWMP on June 14, 2016. The UWMP was prepared to comply with the Urban Water Management Planning Act (UWMPA) and documents the City's management planning efforts to ensure adequate water supply to meet demands over the next 25 years. More specifically, the UWMP describes and evaluates the quality and reliability of the City's existing and planned water supplies to meet short-term and long-term customer water demands; especially availability and sufficiency of surface water assets and the vulnerability of these supplies to seasonal and climactic conditions (UWMP p. 1-2).

Explain whether the drought plan was developed with input from multiple stakeholders

Folsom worked closely with other public agencies to develop and update the RWRP. All 20 RWA member agencies including California American Water, the City of Sacramento, the El Dorado Irrigation District, and the Golden State Water Company provided input. While collaborating, Folsom and others also solicited additional participant input in order to develop a successful planning approach (RWRP p. 2-1).

The RDCP is a collaborative project among five large municipal and industrial (M&I) water agencies with Bureau of Reclamation water service contracts: the Placer County Water Agency (PCWA), the City of Roseville, the City of Sacramento, the San Juan Water District [SJWD], and Folsom. The RDCP also includes participation by 12 water agencies in the North American Basin, Regional Water Authority (RWA), Water Forum, California Department of Water Resources (DWR), and Reclamation. As part of the requirement of the RDCP, a [Communication and Outreach Plan](#) was prepared and implemented. A total of 16 presentations were given to local agency boards, representatives of environmental groups, representatives of local and state elected officials, and representatives of Reclamation, DWR and the State Water Contractors between October 2015 and July 2016.

The UWMP was prepared in coordination with multiple other appropriate water agencies and organizations as required by the UWMPA. Public meetings were held prior to plan adoption. Additionally, the City encouraged active involvement of other sectors of the population prior to and during the preparation of the plan (UWMP p. 1-3). A table of public agency coordination is included below:

Figure 3: UWMP Public and Agency Coordination

Coordinating Agencies	Coordinate Regarding Demands	Sent Copy of Draft UWMP	Sent 60-Day Notice	Notice of Public Hearing
Cities, Counties, Customers and Interested Parties				
Sacramento County			✓	✓
Sacramento County (Planning Department)	✓	✓	✓	✓
United States Bureau of Reclamation - CVP	✓	✓	✓	✓
San Juan Water District	✓	✓	✓	✓
Southern California Water Company			✓	✓
Placer County Water Agency			✓	✓
Regional Water Authority			✓	✓
Sacramento County Water Agency			✓	✓
Sacramento Groundwater Authority			✓	✓
El Dorado Irrigation District			✓	✓
El Dorado County Water Agency			✓	✓
City of Roseville			✓	✓
Fair Oaks Water District			✓	✓
Orange Vale Water Company			✓	✓
Citrus Heights Water District			✓	✓
Sacramento Suburban Water District			✓	✓
General Public			✓	✓

Note: The UWMP draft was made available www.folsom.ca.us

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

The RWRP and RCDP both identify climate change as an external vulnerability to water reliability in the Sacramento region. The RWRP specifically expresses concern over individual agencies inability to control this factor and anticipates warming trends will reduce the effectiveness of surface water reservoirs (RWRP p. 3-2). Further, the RWRP identifies specific opportunities to expand conjunctive use of existing facilities to ensure a reliable groundwater supply in the region for future climate adaptation (RWRP p. 3-3). The UWMP identifies climate as a liability to Folsom's overall long-term water supply. (UWMP p. 6-5).

Describe how your proposed drought resiliency project is supported by and existing drought plan

Project activities are supported through the RWRP:

- Ashland Water Rehabilitation Project No. 1 – The RWRP identifies “system interties” as a mitigation action needed to contribute to overall water reliability in the region. (RWRP p. 2-5). This project component rehabilitates and improves an existing section of waterline which serves as an intertie, which is currently inoperable.
- Water Treatment Plant Backwash and Recycled Water Capacity Project – This project component involves the replacement and upsizing of the City's water treatment plant (WTP) reclaimed backwash water pumps and pipeline. This component is supported through the “Recycled Water” RWRP mitigation strategy (RWRP p. 2-5).
- Empire Ranch Non-Potable Water Well – This project component would involve the installation of a new well and associated piping in order to provide groundwater in lieu of surface water as an irrigation source for the Empire Ranch Golf Course. This component is supported through the “Groundwater Well” mitigation action strategy, specifically the installation of a new well, which would help Folsom's ability to provide back-up water supplies during times of drought (RWRP p. 2-5).

In addition, included the City of Folsom's Operating Budget and Capital Improvement Plan (CIP) are capital improvement projects which are intended to advance the City's resiliency to future drought conditions. The WTP Backwash and Recycled Water Capacity Project component is included in the Fiscal Year 2019-20 CIP budget (p. V1-10) and the Ashland Water Rehabilitation Project No. 1 component is included in the Fiscal Year 2020-21 CIP budget. The City plans to include the Empire Ranch Non-Potable Water Well project in the FY 2021-2022 CIP.

Does the drought plan identify the proposed project as a potential mitigation or response action?

The project is identified as a potential mitigation action throughout in planning documents.

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

This project specifically implements two needs identified in the RDCP: "physical threats to groundwater availability," and "threats to infrastructure integrity." The RDCP identifies these items as overall water supply sector vulnerabilities. If these vulnerabilities go unaddressed, they "could have wide range effects from localized impacts, to severe disruptions in services region-wide." (RDCP p. 3-3). The project improves and installs new infrastructure in all three project components and increases availability to groundwater through the Empire Ranch Non-Potable Water Well project component.

Furthermore, these projects meet the CIP's goal of ensuring that existing infrastructure is maintained and replaced (FY20-21 CIP p. VI-236).

Describe how the proposed project is prioritized in the referenced drought plan

Project components are outlined as specific priorities in the FY 2019-2020 and FY 2021-2022 CIP's. The Water Treatment Plant Backwash and Recycled Water Capacity Project component is listed in the FY 2019-2020 CIP as a necessary water project. If this project is not completed, the "City's capacity for existing and future water demands" will be extremely limited. (FY19-20 CIP p. VI-286). The Ashland project component is included as a budget highlight for the FY20-21 CIP (p IV-122).

Evaluation Criteria C – Severity of Actual or Potential Drought Impacts to be addressed by the Project

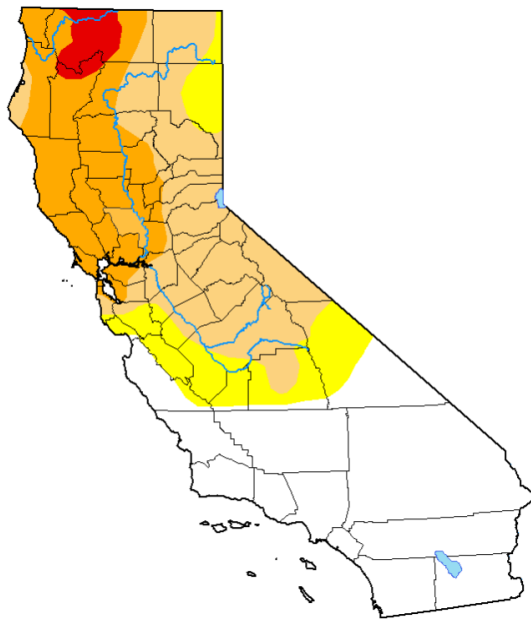
What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation and tourism, forestry), and how severe are those impacts?

As of July 2020, the City of Folsom is experiencing moderate (D1) to severe drought (D2) as identified through the National Drought Integrated Information System (NIDIS). The United States Drought Monitor identifies possible impacts as a result of these classifications:

- Agriculture – The City is experiencing damage to crops and pastures and possibly crop loss. In addition, producers may have to give supplemental feed to cattle as grazing land becomes increasingly inadequate.
- Environment – Wildlife patterns begin to change in areas of moderate drought. In severe drought, trees become stressed, plants increase reproductive measures, and wildlife diseases increase.

- Recreation and Tourism – The City primarily relies on cycling and water sports on the City’s two lakes and waterways as a means to attract tourists to the area. Moderate drought may lead to the decline of lake and river-based tourism and closure of boat ramps.
- Wildfire – With severe drought, fire season is longer with high burn intensity, dry fuels, and large spatial extent

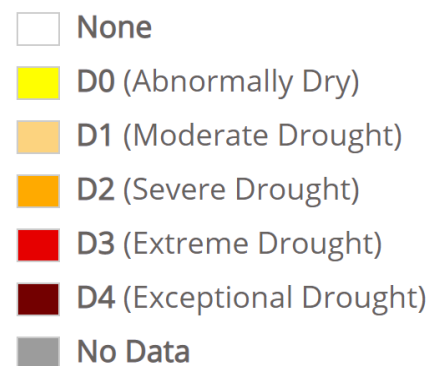
Figure 4: United States Drought Monitor, CA



Map released: Thurs. July 2, 2020

Data valid: June 30, 2020 at 8 a.m. EDT

Intensity:



Between 2014-2016 the City recorded heavy economic losses due to the statewide drought. The City was mandated by California to reduce water usage and implement water conservation measures during this time period. The City’s Water Fund operating revenue reflects these losses as described in the 2014-2016 Comprehensive Annual Financial Reports (CAFR):

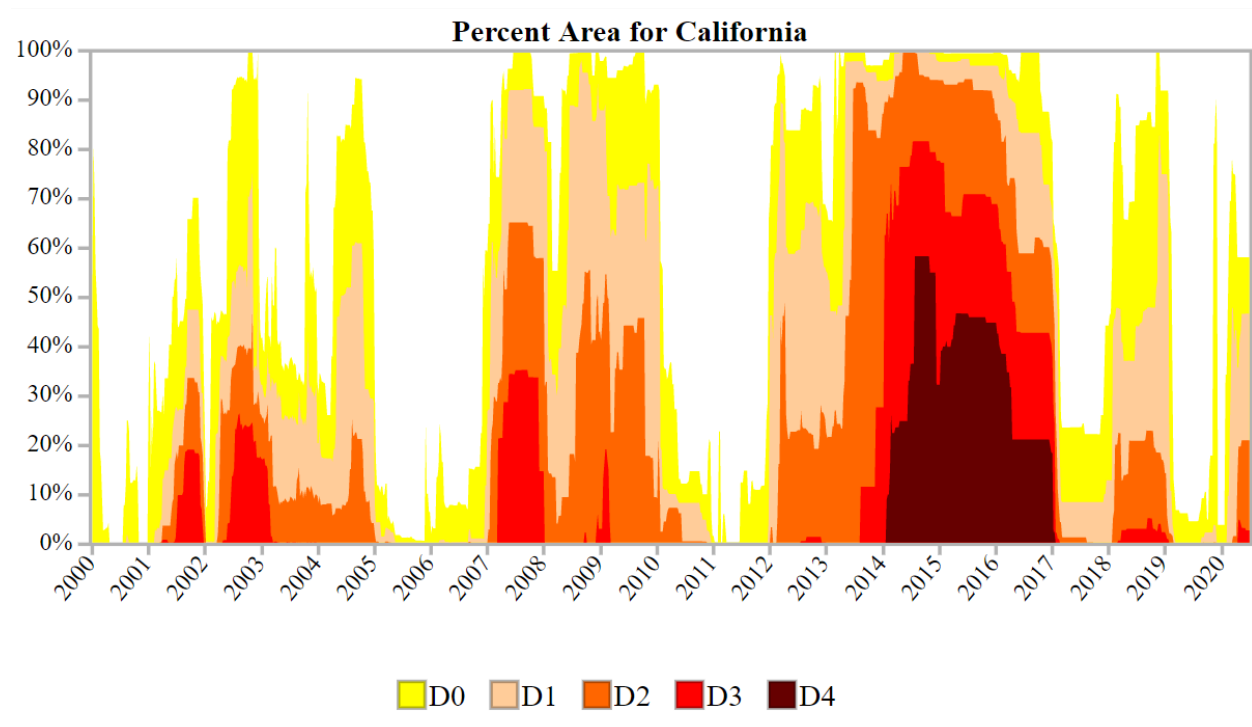
- 2016: Operating revenue for FY 2015-16 was \$12.2 million, a decrease of \$900k due to water conservation throughout the fiscal year. Operating expenses increased \$93k to \$11.8 million primarily due to increased maintenance and operations expenses. ([City of Folsom 2016 CAFR](#) p. 14)
- 2015: Operating revenue for FY 2014-15 was \$13.1 million, a decrease of \$1.1 million due to water conservation throughout the fiscal year. Operating expenses increased \$600k to \$11.7 million primarily due to increased maintenance and operations expenses. ([City of Folsom 2015 CAFR](#) p. 14)

- 2014: Operating revenue for FY 2013-14 was \$14.2 million, a decrease of \$500k due to water conservation throughout the fiscal year. Operating expenses increased \$300k to \$11.1 million primarily due to increased maintenance and operations expenses. ([City of Folsom 2014 CAFR](#) p. 14)

Describe existing or potential drought conditions in the project area

As of July 2020, Folsom is experiencing moderate to severe drought documented by the NIDIS. Currently, more than 11 million residents or approximately 30 percent of the population in California are experiencing drought with 2.7 million more in abnormally dry areas. Drought has been an issue for the State of California for nearly a century with extensive periods of drought recorded during 1928-1934, 1976-1977, 1987-1991, 2007-09, and recently 2013-16 (California Water Science Center). Since 2000, the longest duration of drought (D1-D4) in California lasted 376 weeks beginning on December 27, 2011 and ending on March 5th, 2019. The most intense period of drought occurred the week of July 29, 2014 where D4 affected 58.41% of California land (NIDIS).

Figure 5: NIDIS: Drought in California 2000-2020



[California's Fourth Climate Change Assessment](#) (Fourth Assessment) projects that average annual daily temperature will rise between 5.6-8.8 degrees Fahrenheit by 2021. Water supply from Snowpack is projected to decline by two-thirds during the same time frame. By 2050, California's agricultural production could therefore face climate-related water shortages of up to 16 percent in certain regions.

Furthermore, a 2018 study entitled "[Increasing precipitation volatility in twenty-first century California](#)" published in Nature Climate Change predicts greater year-to-year swings from extreme dry to wet conditions in California. This phenomenon known as "precipitation whiplash events" is predicted to increase by as much as 100 percent due to global warming. Using the Community Earth System Model

Large Ensemble, which models climate simulations, the study concluded that increases in standalone dry extremes will also occur. “Such hydrological cycle intensification would seriously challenge California’s existing water storage, conveyance and flood control infrastructure.” (Swain et al 2018).

Evaluation Criterion D – Project Implementation

The schedules below are for each of the projects.

Ashland Water System Rehabilitation Project No. 1	
Date	Task
August 2020	Begin design and environmental work – biological and cultural resources through the Bureau of Reclamation
October 2020	60% design complete
December 2020	90% design complete and environmental work completed
March 2021	Final design and project bidding
April 2021	Award contract through Folsom City Council
July 2021	Begin construction
September 2021	Complete project construction and project closeout

The City will complete a portion of the environmental compliance under the California Environmental Quality Act (CEQA). Based on initial discussions with an environmental consultant, it is likely the City will prepare a Notice of Exemption under a categorical exemption for this project. The City is currently working with the Bureau of Reclamation staff who will perform the cultural and biological survey for the project. In addition to this, the City will need to obtain a temporary construction land use agreement from Reclamation. Because the project will be considered a Public Works project, the selected contractor will need to obtain a no-fee encroachment permit from the City’s Community Development Department. The design and environmental work for the project will be completed by a third party hired by the City.

Water Treatment Plant Backwash and Recycled Backwash Capacity Project	
Date	Task
September 2020	Begin design and environmental work
December 2020	60% design complete
February 2021	90% design complete and environmental work completed
April 2021	Final design and project bidding
May 2021	Award contract through Folsom City Council
July 2021	Begin construction
September 2021	Complete project construction and project closeout

The City will complete a portion of the environmental compliance under the California Environmental Quality Act (CEQA). Based on initial discussions with an environmental consultant, it is likely the City will prepare a Notice of Exemption under a categorical exemption for this project. Because the project is located on City property, there are not any other permits that will be required. The design and environmental work for the project will be completed by a third party hired by the City.

Empire Ranch Non-Potable Water Well Project	
Date	Task
October 2020	Begin design and environmental work
December 2020	60% design complete
January 2021	90% design complete and environmental work completed
March 2021	Final design and project bidding
April 2021	Award contract through Folsom City Council
July 2021	Begin construction
September 2021	Complete project construction and project closeout

The City will complete a portion of the environmental compliance under the California Environmental Quality Act (CEQA). Based on initial discussions with an environmental consultant, it is likely the City will prepare a Mitigated Negative Declaration. Because the project will be considered a Public Works project, the selected contractor will need to obtain a no-fee encroachment permit from the City's Community Development Department. Additional coordination will be required with the Sacramento Municipal Utility District (SMUD) for electrical service and for installing the proposed pump and pipeline within a SMUD easement. The design and environmental work for the project will be completed by a third party hired by the City.

Evaluation Criterion E – Nexus to Reclamation

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

All three projects have a direct nexus to the Department of Reclamation's operations at Folsom Reservoir. The City of Folsom receives Reclamation project water from Folsom Reservoir and is located in the same basin as the reservoir. All three projects contribute water to the basin: the Empire Ranch well replaces up to 90 acre feet annually which would otherwise be drawn from the reservoir; the Ashland project provides an intertie and thus a mechanism to make more efficient use of treated groundwater; the Backwash project allows more efficient operations at the treatment plant and creates the opportunity to leave even more water in the reservoir. In addition to operations and supply at Folsom Reservoir, these three projects also have independent and cumulative positive impacts on American River flows and, consequently, downstream users and CVP operations generally.

The Backwash Capacity Project has a direct nexus to Folsom Reservoir; the project would allow the capacity to leave water in the Bureau's Folsom Reservoir by improving efficiencies in backwash operations. The City of Folsom receives 100% of its water supply from the reservoir via water contracts with the Bureau of Reclamation. 100% of Bureau water enters the City's water system via the water treatment plant. In times of drought when surface water supplies are limited in Folsom Reservoir, this project would leave surface water in Folsom Reservoir for other beneficial uses by Reclamation, including environmental benefits. By improving the recycled water backwash capacity to fully utilize the 10% return water allowed by EPA, the City could save up to 336 AFA because this amount of water would not be lost to the wastewater system and could remain in Folsom Reservoir for other beneficial uses by Reclamation.

Similarly, the Empire Ranch Well project will also allow water to remain in the reservoir; water from the new well will effectively take the place of water currently sourced at the City's water treatment plant. Each acre foot pumped from the well allows the same amount of water to remain in the reservoir – particularly important during dry months and years. Such a groundwater resource would have potential

supply benefits for the City and other Sacramento Groundwater Authority (SGA) members and could allow the City to forgo some of its American River surface water entitlement with potential environmental benefits for the Lower American River and/or Bay-Delta.

The Ashland Project also provides the opportunity for the City to leave water in Folsom Reservoir. During times of water shortages because of drought conditions, San Juan Water District (SJWD) could receive treated groundwater from Sacramento Suburban Water District (SSWD) for use in its distribution system and leave water in Folsom Reservoir for the City to use or SJWD could pump the treated groundwater into the City's water distribution system and the City could leave surface water in Folsom Reservoir. By receiving treated groundwater, there is the potential to leave surface water supplies in Folsom Reservoir for other uses, including environmental purposes. The Ashland Project provides the intertie necessary to allow this flexibility.

Will the project benefit any tribe(s)?

The projects do not have a direct benefit to any tribes but provide indirect benefits to all entities within the American River basin by way of efficient use of the resource allowing more water to remain in the system.

Does the applicant receive Reclamation project water?

The City of Folsom receives 100% of its water supply from the Bureau's Folsom facility.

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

The projects are not located on Reclamation properties and do not directly affect Reclamation facilities except to the extent the projects allow additional water to remain in the reservoir.

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

The projects are located close to the Bureau's Folsom facilities and all are in the American River Basin.

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

All three projects will contribute water to the American River Basin. The Ashland project provides an intertie and thus a mechanism to make more efficient use of treated groundwater; the Backwash project allows more efficient operations at the treatment plant and creates the opportunity to leave even more water in the reservoir; the Empire Ranch Well creates a new water source and will contribute new water to the basin while simultaneously allowing more water to remain in the reservoir.

Evaluation Criterion F—Department of the Interior and Bureau of Reclamation Priorities
Department of the Interior Priorities

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

The Ashland Project would help allow the City and regional partners to make creative beneficial use of the resource by tracking supply and demand and moving the water via the intertie to places where it can be utilized most efficiently. Under the Regional Drought Contingency Plan the City and partners hope to

use hydrologic modeling to better understand potential future conditions under climate change; this includes less snowpack or more water in the system in terms of precipitation. The City and regional partners continue to identify projects that mitigate climate change impacts or even drought related impacts, including projects such as interties to agencies that have access to groundwater.

- b. Examine land use planning processes and land use designations that govern public use and access N/A*
- c. Revise and streamline the environmental and regulatory review process while maintaining environmental standards N/A*
- d. Review the Department's water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity*

The Empire Ranch Well project expands groundwater capacity and provides flexibility, allowing more surface water to remain in Folsom Reservoir for beneficial use. The Ashland intertie promotes cooperation between local and regional water agencies by facilitating efficient movement of water to higher and more productive use areas when necessary. The Backwash project also allows more water to remain in Folsom Reservoir by creating efficiency in the system and preventing water from unnecessarily being redirected to non-potable infrastructure and, eventually, back into the river.

- e. Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands N/A*
- f. Identify and implement initiatives to expand access to Department lands for hunting and fishing N/A*
- g. Shift the balance towards providing greater public access to public lands over restrictions to access.*

All three projects contribute to maintaining higher lake levels for longer periods of time, creating more opportunity for longer recreation seasons on the Folsom Lake Reservoir, including longer use periods for marina and boat launching facilities.

2. Utilizing our natural resources

- a. Ensure American energy is available to meet our security and economic needs*

All three projects contribute to making more water available in Folsom Reservoir, allowing greater certainty for hydropower plant operations at Folsom Dam throughout the year.

- b. Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications N/A*
- c. Refocus timber programs to embrace the entire "healthy forests" lifecycle N/A*
- d. Manage competition for grazing resources N/A*

3. Restoring trust with local communities

- a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands*

All three projects will help the City of Folsom – the Bureau's closest neighbor at Folsom Dam and Reservoir – with water supply, recreation opportunities, and efficient water infrastructure operations.

By partnering with the City, the Bureau will once again demonstrate its value as a partner when considering water supply.

- b. *Expand the lines of communication with governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, tribes, and local communities*

The Backwash project in particular provides an opportunity to improve the efficiency of ongoing operational communications between Reclamation and the City. Due to the limited capacity with the recycled backwash pumps and pipe, the City currently must make daily calls to Reclamations operations staff to reduce or increase flows from the Reservoir. While the City will continue to make daily calls to Reclamation operations staff, there will be fewer calls each day because the City will not need to change flows based on a new recycled backwash system that is capable of meeting its allowable usage of 10% by EPA.

4. *Striking a regulatory balance*

- a. *Reduce the administrative and regulatory burden imposed on U.S. industry and the public N/A*
- b. *Ensure that ESA decisions are based on strong science and thorough analysis N/A*

5. *Modernizing our infrastructure*

- a. *Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure N/A*
- b. *Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs N/A*
- c. *Prioritize Department infrastructure needs to highlight:*
 - i. *Construction of infrastructure*
 - ii. *Cyclical maintenance*
 - iii. *Deferred maintenance*

The Ashland intertie project provides an opportunity to address deferred maintenance. The existing pipe is unusable, and replacing the pipe allows the City to once again take advantage of infrastructure connectivity.

Bureau of Reclamation Priorities

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

As noted under Interior priorities, all three projects improve reliability of supply and system management. The projects independently and collectively create opportunities to leave measurable amounts of water in Folsom Reservoir through efficient use of the resource (Ashland Water Rehabilitation Project No. 1, Water Treatment Plan Backwash and Recycled Water Capacity Project), and creating new supply (Empire Ranch Non-Potable Water Well Project).

2. *Streamline Regulatory Processes and Remove Unnecessary Burdens to Provide More Water and Power Supply Reliability.*

As noted under Interior priorities, this suite of projects - jointly and severally - contribute to water and power supply reliability by creating a new water supply source and utilizing existing infrastructure more efficiently and effectively, ultimately allowing more water to remain in the reservoir for other supply, power, and environmental uses.

3. Leverage Science and Technology to Improve Water Supply Reliability to Communities

The City of Folsom has reviewed climate change data and water resource planning documents and is committed to following these guidelines. These documents have indicated a warming climate will continue to escalate drought conditions in California. The City's drought resiliency projects build on these documents and attempt to improve water supply reliability to communities for the short and long-term.

4. Address Ongoing Drought

All three drought resiliency projects result in less water usage which is critical in the drought-prone America River watershed. These projects accomplish this through efficient water supply mechanisms, creation of new groundwater supplies, and new efficiencies in operations.

5. Improve the Value of Hydropower to Reclamation Power Customers N/A

6. Improve Water Supplies for Tribal and Rural Communities N/A

7. Implementation of new Title Transfer authority pursuant to P.L. 116-9 N/A

Project Budget

Funding Plan and Letters of Commitment

The City's cost share will total \$1,732,060 (69.8% of total project costs) and is requesting \$750,000 through the Bureau of Reclamation. The total project cost will be \$2,482,060.

The City of Folsom's complete Drought Resiliency Project (Ashland Water System Rehabilitation Project No. 1, Water Treatment Plant Backwash and Recycled Water Capacity Project, and Empire Ranch Non-Potable Well Project) will be funded through rates collected from the City's water customers and saved in the City's Water Fund - the Water Impact Fund (Fund 456) and the Water Operating Fund (Fund 520).

Funding will be available to the City of Folsom by August 1, 2021, the City's project start date. The City will not utilize any third-party funding or receive funding from other non-Federal entities and has therefore not included any letters of funding commitment from other parties. Similarly, the City has no pending funding requests related to this project. The budget proposal does not include any expended project costs prior to project start.

Budget Proposal

The table below includes the proposed budget for each project which includes funding from the City and funding provided by Reclamation through the grant. City funding for the Ashland and WTP projects were included in the City's Capital Improvement Program budget for Fiscal Year 2020-2021 which was approved by the Folsom City Council on May 26, 2020. The City currently has additional funding available for the well project that would require an appropriation by City Council. The City will not be seeking any third-party financial contributions from other sources. Additional details of the project costs are included in the Budget Narrative. Projects costs below include in-kind staff costs that are detailed in the Budget Narrative.

Figure 6: Total project costs showing federal and non-federal funding allocations

Project	Total Budget	City Cost Share	Reclamation Cost Share	City Percentage
Ashland Water System Rehabilitation Project No. 1	\$1,447,724	\$1,047,724	\$400,000	72.4%
Water Treatment Plant Backwash and Recycled Water Capacity Project	\$632,747	\$382,747	\$250,000	60.5%
Empire Ranch Non-Potable Well Project	\$401,589	\$301,589	\$100,000	75.1%
TOTAL	\$2,482,060	\$1,732,060	\$750,000	69.8%

A further budget breakdown of each project is provided below:

Figure 7: Project Costs for the Ashland Water System Rehabilitation Project No. 1

Budget Item Description	Computation		Total
	\$/Unit	Quantity	
Salaries and Wages			
Senior Engineer	\$63.74	80	\$ 5,099
Assistant Engineer	\$39.15	150	\$ 5,873
Fringe Benefits			
Senior Engineer	\$44.18	80	\$ 3,534
Assistant Engineer	\$21.45	150	\$ 3,218
Travel			
None			\$ -
Equipment			
None			\$ -
Supplies/Materials			
None			\$ -
Contractual/Construction			
Design and Environmental	\$169,390	1	\$169,390
Construction Contractor	\$1,260,610	1	\$1,260,610
Other			
None			\$ -
Total Direct Costs			\$1,447,724
Indirect Cost - \$0			\$ -
Total Project Costs			\$1,447,724

Figure 8: Project Costs for the Water Treatment Plant Backwash and Recycled Water Capacity Project

Budget Item Description	Computation		Total
	\$/Unit	Quantity	
Salaries and Wages			
Senior Engineer	\$63.74	60	\$ 3,824
Assistant Engineer	\$39.15	120	\$ 4,698
Fringe Benefits			
Senior Engineer	\$44.18	60	\$ 2,651
Assistant Engineer	\$21.45	120	\$ 2,574
Travel			
None			\$ -
Equipment			
None			\$ -
Supplies/Materials			
None			\$ -

Contractual/Construction			
Design and Environmental	\$115,000	1	\$115,000
Construction Contractor	\$504,000	1	\$504,000
Other			
None			\$ -
Total Direct Costs			\$632,747
Indirect Cost - \$0			\$ -
Total Project Costs			\$632,747

Figure 9: Project Costs for the Empire Ranch Non-Potable Water Well Project

Budget Item Description	Computation		Total
	\$/Unit	Quantity	
Salaries and Wages			
Senior Engineer	\$63.74	40	\$ 2,550
Assistant Engineer	\$39.15	120	\$ 4,698
Fringe Benefits			
Senior Engineer	\$44.18	40	\$ 1,767
Assistant Engineer	\$21.45	120	\$ 2,574
Travel			
None			\$ -
Equipment			
None			\$ -
Supplies/Materials			
None			\$ -
Contractual/Construction			
Design and Environmental	\$70,000	1	\$70,000
Construction Contractor	\$320,000	1	\$320,000
Other			
None			\$ -
Total Direct Costs			\$401,589
Indirect Cost - \$0			\$ -
Total Project Costs			\$401,589

Budget Narrative

The salaries and wages will cover the project costs for the City's project managers, Vaughn Fleischbein, Senior Engineer and Nathan Stites, Assistant Engineer. The City will publicly bid each project as each is considered a Public Works project and each project will require an "award of bid" by the Folsom City Council. The remainder of the proposed project budget items are provided separately for each of the three projects below:

Ashland Water System Rehabilitation Project No 1.

The City anticipates that the Senior Engineer will spend 80 hours (\$63.74/hr) and the Assistant Engineer will spend 150 hours (\$ 39.15/hr) working on the project, from design to construction. This will cost approximately \$10,972 in salaries and wages.

Fringe benefits are provided by the City's Finance Department and include medical, dental, retirement, deferred compensation, worker's compensation, long-term and short-term disability, and taxes. Based on the 80 hours for the Senior Engineer (\$44.18/hr) and the 150 hours for the Assistant Engineer (\$21.45/hr), the fringe benefits will be approximately \$6,752.

There is no travel required for the project, therefore this line item is \$0. All work will be completed within the City of Folsom city limits.

Equipment, supplies, and materials for the project will all be included in the construction costs line item. Design and environmental costs are included, and this work will be completed by a consultant. These costs will be approximately \$169,390. Design and environmental work will include field investigations, surveying, identification of existing utilities, plans, specifications, project management, project coordination, and bid support. It is anticipated that the City will obtain California Environmental Quality Act (CEQA) coverage through a Notice of Exemption, which is included in the proposed design and environmental costs. The selected consultant will also coordinate with the Bureau of Reclamation on an Application for Transportations and Utility Systems and Facilities on Federal Lands (Standard Form 299) submittal and the City will pay the \$100 application fee. City staff is currently working with the Central California Area Office's Resource Specialist who will be completing the biological and cultural resources survey for this project.

A construction contract will be required for the project and is estimated to cost about \$1,260,610. This will include pipe material, backfill material, construction equipment for the installation of the pipeline, labor hours, electrical work, supervisory control and data acquisition (SCADA) communications, and testing of the pipeline once installed. Bids will be opened by the City Clerk and the lowest, responsible, and responsive bidder will be recommended an "award of bid" that requires approval by the City of Folsom City Council through a Resolution.

There are not any anticipated indirect costs, therefore this line item remains \$0. The anticipated total project costs are \$1,447,724. Funding for the project will not require any third-party contributions. The City will fund its portion of the project costs though rates collected from its water customers and saved in the City's Water Fund. This project was also included in the City's Fiscal Year 2020-2021 Capital Improvement Program, which was approved by the Folsom City Council on June 9, 2020.

Water Treatment Plant Backwash and Recycled Water Capacity Project

The City anticipates that the Senior Engineer will spend 60 hours (\$63.74/hr) and the Assistant Engineer will spend 120 hours (\$ 39.15/hr) working on the project, from design to construction. This will cost approximately \$8,522 in salaries and wages.

Fringe benefits are provided by the City's Finance Department and include medical, dental, retirement, deferred compensation, worker's compensation, long-term and short-term disability, and taxes. Based

on the 60 hours for the Senior Engineer (\$44.18/hr) and the 120 hours for the Assistant Engineer (\$21.45/hr), the fringe benefits will be approximately \$5,225.

There is no travel required for the project, therefore this line item is \$0. All work will be completed within the City of Folsom city limits.

Equipment, supplies, and materials will for the project will all be included in the construction costs line item. Design and environmental costs are included, and this work will be completed by a consultant. These costs will be approximately \$115,000. Design and environmental work will include field investigations, surveying, identification of existing utilities, plans, specifications, project management, project coordination, and bid support. It is anticipated that the City will obtain CEQA coverage through a Notice of Exemption, which is included in the proposed design and environmental costs.

A construction contract will be required for the project and is estimated to cost about \$504,000. This will include pipe material, pumps, backfill material, construction equipment for the installation of the pipeline, labor hours, electrical work, and testing of the pumps and pipeline once installed. Bids will be opened by the City Clerk and the lowest, responsible, and responsive bidder will be recommended an “award of bid” that requires approval by the City of Folsom City Council through a Resolution.

There are not any anticipated indirect costs, therefore this line item remains \$0. The anticipated total project costs are \$632,747. Funding for the project will not require any third-party contributions. The City will fund its portion of the project costs though rates collected from its water customers and saved in the City’s Water Fund. This project was also included in the City’s Fiscal Year 2020-2021 Capital Improvement Program, which was approved by the Folsom City Council on June 9, 2020.

Empire Ranch Non-Potable Water Well Project

The City anticipates that the Senior Engineer will spend 40 hours (\$63.74/hr) and the Assistant Engineer will spend 120 hours (\$ 39.15/hr) working on the project, from design to construction. This will cost approximately \$7,248 in salaries and wages.

Fringe benefits are provided by the City’s Finance Department and include medical, dental, retirement, deferred compensation, worker’s compensation, long-term and short-term disability, and taxes. Based on the 40 hours for the Senior Engineer (\$44.18/hr) and the 120 hours for the Assistant Engineer (\$21.45/hr), the fringe benefits will be approximately \$4,341.

There is no travel required for the project, therefore this line item is \$0. All work will be completed within the City of Folsom city limits.

Equipment, supplies, and materials will for the project will all be included in the construction costs line item. Design, environmental, and easement acquisition from SMUD costs are included, and this work will be completed by a consultant. These costs will be approximately \$70,000. Design and environmental work will include field investigations, surveying, identification of existing utilities, plans, specifications, project management, project coordination, and bid support. It is anticipated that the City will obtain CEQA coverage through a Mitigated Negative Declaration, which is included in the proposed design and environmental costs.

A construction contract will be required for the project and is estimated to cost about \$320,000. This will include the well pump, pipe material, backfill material, construction equipment for the installation

of the pipeline, labor hours, electrical work, supervisory control and data acquisition (SCADA) communications, and testing of the well pump pipeline once installed. This project will be publicly bid by the City of Folsom's Environmental and Water Resources Department. Bids will be opened by the City Clerk and the lowest, responsible, and responsive bidder will be recommended an "award of bid" that requires approval by the City of Folsom City Council through a Resolution.

There are not any anticipated indirect costs, therefore this line item remains \$0. The anticipated total project costs are \$401,589. Funding for the project will not require any third-party contributions. The City will fund its portion of the project costs though rates collected from its water customers and saved in the City's Water Fund. This project, if awarded by City Council, would require an appropriation of funds from the City's Water Fund.

Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?

Earth disturbing work will include the removal of some streetscape turf, asphalt pavement, and concrete sidewalks with heavy construction equipment. This earth disturbing work will have a minimal to no effect on air quality, water and animal habitat. Air quality will only slightly be impacted with dust from turf removal and the installation of the pumps, pipes and related water infrastructure. Erosion and stormwater quality will be unaffected with implementation of standard best management practices. There will be no impact to animal habitat with the removal of the existing streetscape turf, asphalt pavement or concrete sidewalks.

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?

According to the U.S. Fish and Wildlife Service Information for Planning and Conservation (IPaC) website, there are 26 resources (amphibians, crustaceans, fishes, flowering plants, insects, reptiles, and migratory birds) within the Ashland Water System Rehabilitation Project No. 1 project area; however, the project site consists of existing streetscape turf, asphalt concrete and concrete pavement. No species listed or proposed to be listed as a Federal threatened or endangered specified, or critical habitat are expected to be affected by this project.

For the Water Treatment Plan Backwash and Recycled Water Capacity Project, there are 22 resources (amphibians, crustaceans, fishes, flowering plants, insects, reptiles, wetlands, and migratory birds) within the project area; however, the project site consists of exposed soil conditions, asphalt concrete, concrete structures, steel piping and oak trees. No species listed or proposed to be listed as a Federal threatened or endangered specified, or critical habitat are expected to be affected by this project.

For the Empire Ranch Non-Potable Water Well Project, there are 25 resources (amphibians, crustaceans, fishes, flowering plants, insects, reptiles, wetlands, and migratory birds) within the project area; however, the project site consists of exposed soil conditions, asphalt concrete, SMUD antennas, concrete sidewalks and street signal conduits and controllers. No species listed or proposed to be listed as a Federal threatened or endangered specified, or critical habitat are expected to be affected by this project.

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.

Of the three project sites, there are no wetlands or other surface water within the project site and no impacts are estimated to occur.

When was the water delivery system constructed?

The water system related to the Ashland Water Rehabilitation Project No. 1 was built in the 1970’s. The water system related to the Water Treatment Plant Backwash and Recycled Water Capacity Project was built in the 2000’s. The Empire Ranch Non-Potable Water well would be new infrastructure.

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

The projects would not result in any modification of or effects to any headgates, canals, or flumes. The projects involve installing new infrastructure to connect to the existing water system.

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

The project sites do not include any building, structures, or features that would be eligible for listing on the National Register of Historic Places and the projects would not impact any building, structures, or features.

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

There are no known archeological sites in the proposed project areas. The project areas are in urbanized areas in the community of Folsom.

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

The projects will not have a disproportionately high and adverse effect on low income or minority populations.

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

The projects do not include Indian sacred sites or tribal lands.

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

The projects will not include the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

Required Permits or Approvals

The City will need to submit an Application for Transportations and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the Bureau of Reclamation for the Ashland Water System Rehabilitation Project No. 1. During construction of this project, the City will require the Contractor to obtain a “no-fee” encroachment permit from the City of Folsom for construction work performed with the Public Right of Way. This will be required prior to any construction of the proposed project.

The Water Treatment Plant Backwash and Recycled Water Capacity Project is located on City property and will not require any easements or permits for approval.

The City will need to obtain a utility easement from SMUD for the installation of the pump and pipeline for the Empire Ranch Non-Potable Water Well Project. The Contractor will also be required to obtain a “no-fee” encroachment permit from the City of Folsom for construction work performed with the Public Right of Way. It is also likely the City will receive a “Right of Entry” from the Empire Ranch Golf Course prior to working on their property.

The award of the environmental and design contracts, construction contracts, and CEQA compliance will also need to be approved by the Folsom City Council at one of its regularly scheduled City Council meetings.

Appendices

Existing Drought Contingency Plan

As previously mentioned, the City of Folsom relies on multiple drought contingency plans and other relevant documents which specifically outline project components. These documents are quite extensive – in order to minimize document size, the plans are linked below:

- [Regional Water Reliability Plan \(RWRP\)](#)
- [Regional Drought Contingency Plan \(RDCP\)](#)
- [City of Folsom 2015 Urban Water Management Plan \(UWMP\)](#)
- [City of Folsom FY 2019-2020 Operating Budget and Capital Improvement Plan \(CIP\)](#)
- [City of Folsom FY 2020-2021 Operating Budget and Capital Improvement Plan \(CIP\)](#)

Letters of Project 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



July 20, 2020

Kerry Schmitz, Chair
 Sean Bigley, Vice Chair

Marcus Yasutake
 City of Folsom
 50 Natoma Street
 Folsom, CA 95630

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

Subject: Letter of Support for Reclamation's Water SMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2021

Dear Mr. Yasutake:

I am writing on behalf of the Regional Water Authority to confirm our support of the City of Folsom's grant application for a Bureau of Reclamation WaterSMART Grant. We understand that the City of Folsom is the lead grant applicant for this grant and their application includes projects that build upon previous planning efforts in which the Regional Water Authority was a participant.

In 2017, the Regional Water Authority, along with the City of Folsom and four other partner agencies, completed the North American Basin Regional Drought Contingency Plan. At the time, this was the first plan completed under Reclamation's Drought Response Program. The RDCP identified indices, indicators, and triggers that help define local supply conditions and the potential needs should supply conditions warrant agency actions. The actions, or mitigation measures, include intertie improvements and groundwater wells, both of which the City proposed in the Fiscal Year 2021 Drought Resiliency Grant.

This letter serves as RWA's support for a WaterSMART Drought Response Program: Drought Resiliency Project application.

Associates

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

Sincerely,

Jim Peifer
 Executive Director

P.O. Box 2157 | 9935 Auburn Folsom Road | Granite Bay, CA 95746 | 916-791-0115 | sjwd.org



Directors

Edward J. "Ted" Costa

Marty Hanneman

Kenneth H. Miller

Dan Rich

Pamela Tobin

General Manager

Paul Helliker

July 15, 2020

Mr. Marcus Yasutake
City of Folsom
50 Natoma Street
Folsom, CA 95630

Subject: Letter of Support for Reclamation's Water SMART Drought Response
Program: Drought Resiliency Projects for Fiscal Year 2021

Dear Mr. Yasutake:

On behalf of the San Juan Water District (SJWD), I would like to confirm our strong support of the City of Folsom's grant application for a Bureau of Reclamation WaterSMART Grant. We understand that the City of Folsom is the lead grant applicant for this grant and their application includes a project that improves an inoperable intertie between the City of Folsom and San Juan Water District.

During the 2012-2016 drought period in California, SJWD and its Wholesale Water Agencies collaborated to install an booster pump station (up to 14.4 million gallons per day of capacity) to deliver treated groundwater to some of the Wholesale Water Agencies, including the City of Folsom, that do not have access to treated groundwater. As part of the project, SJWD is now able to deliver up to 1.60 million gallons per day (MGD) of treated groundwater to the City with the option of delivering more if less is needed in other areas of SJWD's service area. By improving their inoperable intertie, the City would be able to fully utilize the 1.60 MGD, and possibly more, within its water distribution system during times of drought or emergency conditions. This project also provides surface water relief from Folsom Reservoir during drought conditions.

This letter serves as SJWD's support for a WaterSMART Drought Response Program: Drought Resiliency Project application.

Sincerely,

Paul Helliker
General Manager

General Manager

Daniel R. York

**Board of Directors**

President - Kevin M. Thomas
Vice President - Robert P. Wichert
David A. Jones
Craig M. Locke
Kathleen McPherson

July 20, 2020

Marcus Yasutake
City of Folsom
50 Natoma Street
Folsom, CA 95630

Subject: Letter of Support for Reclamation's Water SMART Drought Response Program:
Drought Resiliency Projects for Fiscal Year 2021

Dear Mr. Yasutake:

I am writing on behalf of the Sacramento Suburban Water District (SSWD) to confirm our support of the City of Folsom's grant application for a Bureau of Reclamation WaterSMART Grant. We understand that the City of Folsom is the lead grant applicant for this grant and their application includes a project that improves an inoperable intertie between the City of Folsom (City) and San Juan Water District (SJWD). This intertie could allow the City to receive treated groundwater from Sacramento Suburban Water District through SJWD water delivery facilities.

During the 2012-2016 drought period in California, SJWD and its Wholesale Water Agencies collaborated to install a booster pump station (up to 14.4 million gallons per day) to deliver treated groundwater to some of the Wholesale Water Agencies, including the City, that do not have access to treated groundwater. As part of the project, SJWD is now able to deliver up to 1.60 million gallons per day (MGD) of treated groundwater from SSWD to the City with the option of delivering more if less is needed in other areas of SJWD's service area. By improving their inoperable intertie, the City would be able to fully utilize the 1.60 MGD, and possibly more, within its water distribution system during times of drought or emergency conditions. This project also provides surface water relief from Folsom Reservoir during drought conditions.

This letter serves as SSWD's support for a WaterSMART Drought Response Program: Drought Resiliency Project application.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan York", is written over a horizontal line.

Dan York
General Manager

Congress of the United States
Washington, DC 20515

August 3, 2020

The Honorable Brenda Burman
Commissioner
Bureau of Reclamation
1849 C Street, NW
Washington, D.C. 20240-0001

Dear Commissioner Burman:

I write today in support of the City of Folsom's application for the WaterSMART Drought Resiliency Program. It is my understanding the City of Folsom is submitting a proposal for the completion of three drought resiliency projects: the Ashland Water Rehabilitation Project No. 1, the Water Treatment Plant Backwash, and Recycled Water Capacity Project, and the Empire Ranch Non-Potable Water Well project. These projects will help the City to continue addressing the resiliency of the region's water resources.

The Ashland Water Rehabilitation Project No. 1 will rehabilitate and/or replace 1,800 lineal feet of existing 18-inch and 21-inch potable waterline and provide service flexibility between the City and other purveyors. The Water Treatment Plant Backwash and Recycled Water Capacity Project will replace and upsize the City's water treatment plant (WTP) reclaimed backwash water pumps and pipeline, allowing the City to maximize the amount of potable water it can return to the system. The Empire Ranch Non-Potable Water Well project provides a new well and associated piping to provide groundwater in lieu of surface water to irrigate the Empire Ranch Golf Course. These projects, taken individually or together as a package, are an important part of the City's ongoing efforts to relieve pressure on the City's water supply.

As you know, drought remains a problem for the Sacramento region. As of July, the City of Folsom is experiencing moderate to severe drought with potential impacts to the City's fire readiness, wildlife, agriculture, and tourism. These three projects will increase the reliability of water supplies, improve water management, and provide benefits to the Central Valley Project.

The City's WaterSMART proposal is supported by the Regional Water Reliability Plan (RWRP), the Regional Drought Contingency Plan (RDCP), the City of Folsom 2015 Urban Water Management Plan (UWMP), and City of Folsom FY 2019-2020 / FY 2020-2021 Operating Budget and Capital Improvement Plan (CIP). The City will be an excellent partner for the Bureau on these projects, and I urge you to give all due consideration to Folsom's WaterSMART proposal.

Sincerely,



Ami Bera, M.D.
Member of Congress

Official Resolution

RESOLUTION NO. 10494**A RESOLUTION AMENDING RESOLUTION NO. 10464 TO INCLUDE THE CITY'S FUNDING COMMITMENT FOR A UNITED STATES BUREAU OF RECLAMATION WATERSMART DROUGHT RESPONSE PROGRAM GRANT**

WHEREAS, the City is eligible to receive up to \$750,000 in federal grant funds through the U.S. Department of the Interior, Bureau of Reclamation WaterSMART Drought Response Program: Drought Resiliency Project for Fiscal Year 2021; and

WHEREAS, the City identifies projects that are critical to ensuring the delivery of adequate and high-quality water supply to all residents and businesses; and

WHEREAS, the City collaborated with four other water agencies and the Regional Water Authority to develop a Regional Drought Contingency Plan; and

WHEREAS, the City desires to apply for \$750,000 from Reclamation to improve water supply reliability and drought resiliency; and

WHEREAS, the City will provide the correct amount of funding and/or in-kind contributions specified in the City's funding plan; and

WHEREAS, the City of Folsom will comply with federal statutes, regulations, policies, guidelines and requirements for application, acceptance and use of federal funds for these federally assisted projects; and

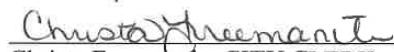
NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Folsom amending Resolution No. 10464 to include the City's Funding Commitment for a United States Bureau of Reclamation WaterSMART Drought Response Program Grant.

PASSED AND ADOPTED this 28th day of July 2020, by the following roll-call vote:

AYES:	Council Member(s):	Howell, Kozlowski, Morin, Sheldon, Aquino
NOES:	Council Member(s):	None
ABSENT:	Council Member(s):	None
ABSTAIN:	Council Member(s):	None


Sarah Aquino, MAYOR

ATTEST:


Christa Freeman, CITY CLERK