BUREAU OF RECLAMATION

PCWA
water • energy • stewardship

Placer County Water Agency

Title: 2024 Canal and Rebates Water Savings Program

Applicant Contact:

Stephanie Wens, Technical Services
Placer County Water Agency
144 Ferguson Rd
Auburn, CA 95603

Table of Contents

Appendices:

A. Water Savings Calculations
B. Rubicon Quote
C. SF-424 Form Certification Regarding Lobbying
D. Regional Water Authority Letter of Support
E. PCWA Resolution 22-16
F. PCWA Letter of Commitment

2024 Canal and Rebates Water Savings Program WaterSMART Grant Application

Technical Proposal and Evaluation Criteria

Executive Summary

Applicant Information

Application Date: February 22, 2024
Applicant Name: Placer County Water Agency
City, County, State: Auburn, Placer County, CA
Applicant Category: Category A Funding Group II
Applicant Contact:

Stephanie Wens
Placer County Water Agency
(530) 823-4082
swens@pcwa.net

Requested Reclamation Funding: $468,220.09; **Total Project Cost:** $1,040,489.08

Project Summary

Provide a one paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits and how those benefits relate to the water management issues you plan to address.

Placer County Water Agency (PCWA) is located in northeastern California in the foothills of the Sierra Nevada, a region that provides more than 60% of the state's water supply and experiences intense variability in its water cycles, including severe drought and intense precipitation in the form of atmospheric rivers (CNRA, 2020 and Rodell and Bailing, 2023). While a number of improvements and expansions have been made to PCWA's water infrastructure over time, much of the raw water conveyance system is aged, inefficient, and in immediate need of upgrade and repair. PCWA is a Category A Funding Group II applicant requesting Reclamation support to meaningfully advance long-term, system-wide water savings and increase water supply resilience. The *2024 Canal and Rebates Water Savings Program (Project)* will implement two high-priority actions. First, PCWA will improve operational efficiency of irrigation and agricultural raw water conveyance infrastructure through installation of 6 automated FlumeGates to maintain consistent upstream water levels, integration of 16 automated FlumeGates into PCWA's Supervisory Control And Data Acquisition (SCADA) system for remote monitoring and control, and lining approximately 770 linear feet (LF) of earthen canal segments to reduce water loss. Second, PCWA will facilitate increases in customer water savings by expanding already well-established and successful rebate programs. Under this Project, the number of rebates available each year will be doubled and outreach and promotion regarding water conservation will

increase. In recent years, PCWA has seen a 106% rise in customer rebate applications. There are also tremendous opportunities to incentivize commercial customers to participate in rebate programs, as well as focused efforts to install highly efficient toilets, particularly within disadvantaged communities (DAC). According to a 2023 Toilet Saturation Study performed by the Regional Water Authority (RWA), approximately 70,000 toilets need to be upgraded to high-efficiency toilets within PCWA's service area. As a result of implementing these two high-priority actions, it is expected that over 480-acre feet (156 million gallons) of water will be preserved each year through the elimination of spillage, accurate water monitoring and budgeting, canal lining, and voluntary water conservation through customer rebate programs. The canal automation and lining components of the proposed Project are estimated to start in April 2025 and January 2025, respectively, and both be completed by June 2025. The water efficiency rebates will be available through December 31, 2026. This Project is not located on a federal facility.

Project Location

Provide the proposed project location or project area including a map showing the geographic location.

PCWA's jurisdiction encompasses the entirety of Placer County and is located approximately 30 miles northeast of Sacramento, California's state capitol with its eastern border ending at the Nevada state line near Lake Tahoe, see Figure 1. Placer County is geographically diverse, encompassing both rural and suburban, densely populated areas with a broad range of elevation, slope, aspect, and soils characteristics. Placer County has a broad geographic diversity with variations in average temperatures and precipitation that support a wide variety of vegetation communities, habitat, and ecosystems.

Placer County watersheds include headwaters that drain large volumes of water into the Sacramento River, ultimately serving the Sacramento Delta ecosystems. At the same time, the region provides significant economic resources to the entire state, serving as the source headwaters and contributing a significant portion to California's water supply, including flows for the Bay-Delta system, the Central Valley Project, and the State Water Project. Moreover, the watersheds generate thousands of megawatts of hydroelectric energy serving communities far beyond Placer County through California's electrical grid system.

PCWA is governed by an elected five-member Board of Directors. PCWA is the primary water resource agency for Placer County with a broad range of responsibilities, including water resource planning and management, retail and wholesale supply of drinking water and irrigation water, and production of hydroelectric energy. PCWA owns and operates 8 water treatment plants (WTPs), 623 miles of treated water pipeline, 170 miles of canal, a 224-megawatt multi-purpose hydroelectric project, and has the capability of delivering 236,900 acre-feet of water. The proposed water efficiency rebate programs will be offered to all 41,000 customers throughout PCWA's service area, see Figure 2.

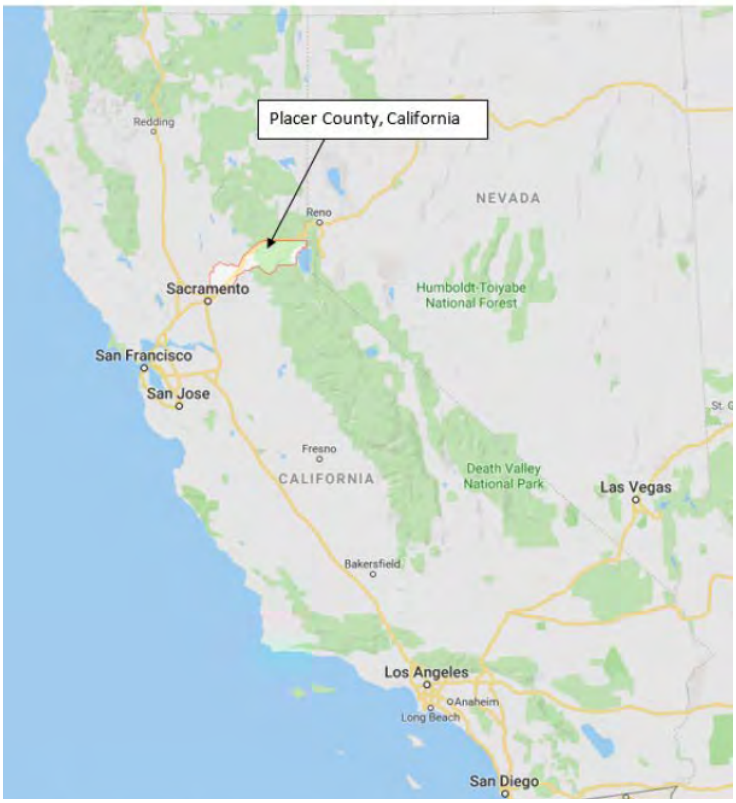

Figure 1. Vicinity Map: Placer County Location in the State of California

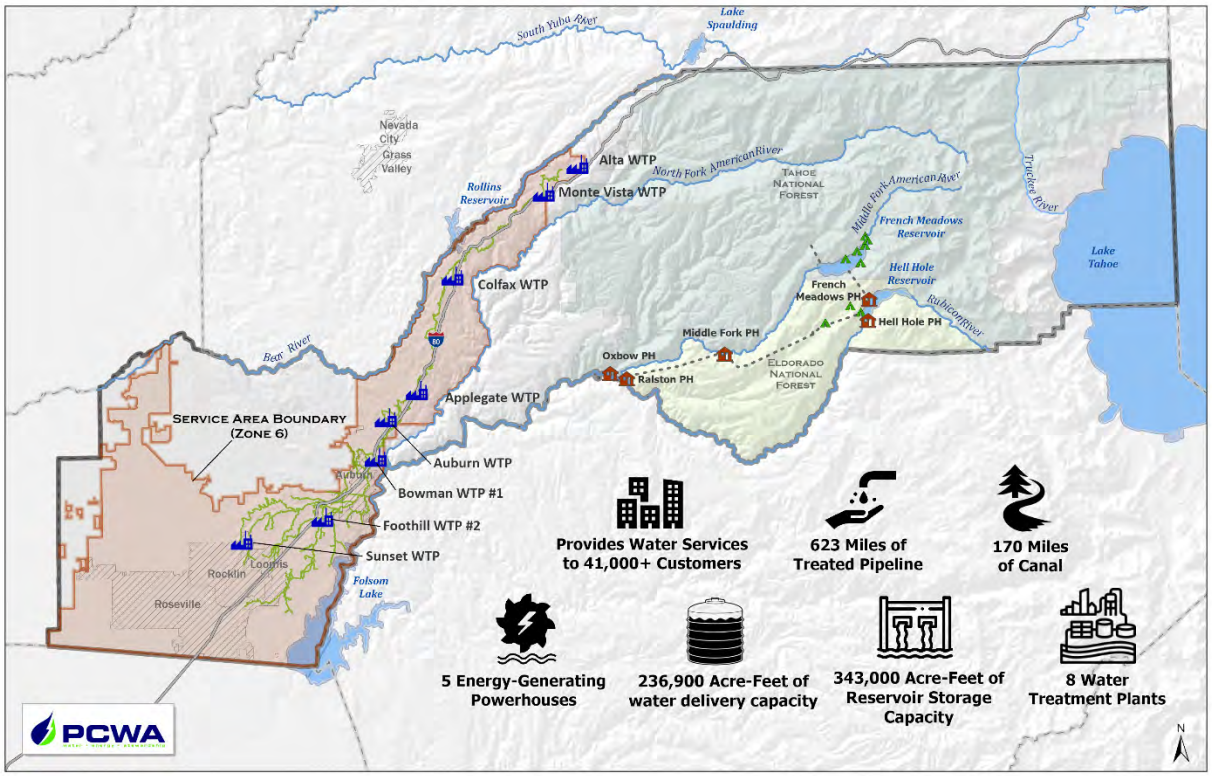

Figure 2. *Placer County Water Agency's Service Area*

The FlumeGates (a combined flow measurement and control gate) will be installed within PCWA's service area, as shown in Figures 3-6 below.

Latitidue and longitudes of each of the project locations for the 6 new Rubicon FlumeGates and SCADA integration sites are the following:

1. YB 193 38°59'24.99N, -121°00'14.63W
2. YB 96A 38°11'23.21N, -121°49'58.58W (two gates to be installed at this location)
3. YB 95A 38°12'08.41N, -121°48'07.42W
4. YB 181 38°52'20.52N, -121°09'16.52W
5. YB 168 38°52'20.57N, -121°09'16.54W

Latitudes and longitudes of each of the 10 sites where SCADA integration will be added to existing Rubicon automated gates:

1. YB 149 38°49'20.54N, -121°08'15.13W
2. YB 147 38°53'10.72N, -121°04'18.10W
3. YB 70 38°55'17.06N, -121°05'00.07W
4. YB 180 38°51'45.67N, -121°07'06.08W
5. YB 144 38°51'48.09N, -121°07'37.95W
6. YB 148 38°47'12.76N, -121°10'30.04W
7. YB 192 38°50'05.03N, -121°08'14.36W
8. YB 177 38°52'15.19N, -121°09'22.41W
9. YB 179 38°58'07.21N, -121°01'11.03W
10. YB 70A 38°55'17.06N, -121°05'00.07W

The 770 LF of canal lining along the Boardman Canal will be installed within PCWA's service area, as shown in Figure 7 below.

Latitude and longitude of the canal lining work location is:

1. Near YB 78 38°51'45.41N, -121°07'08.16W

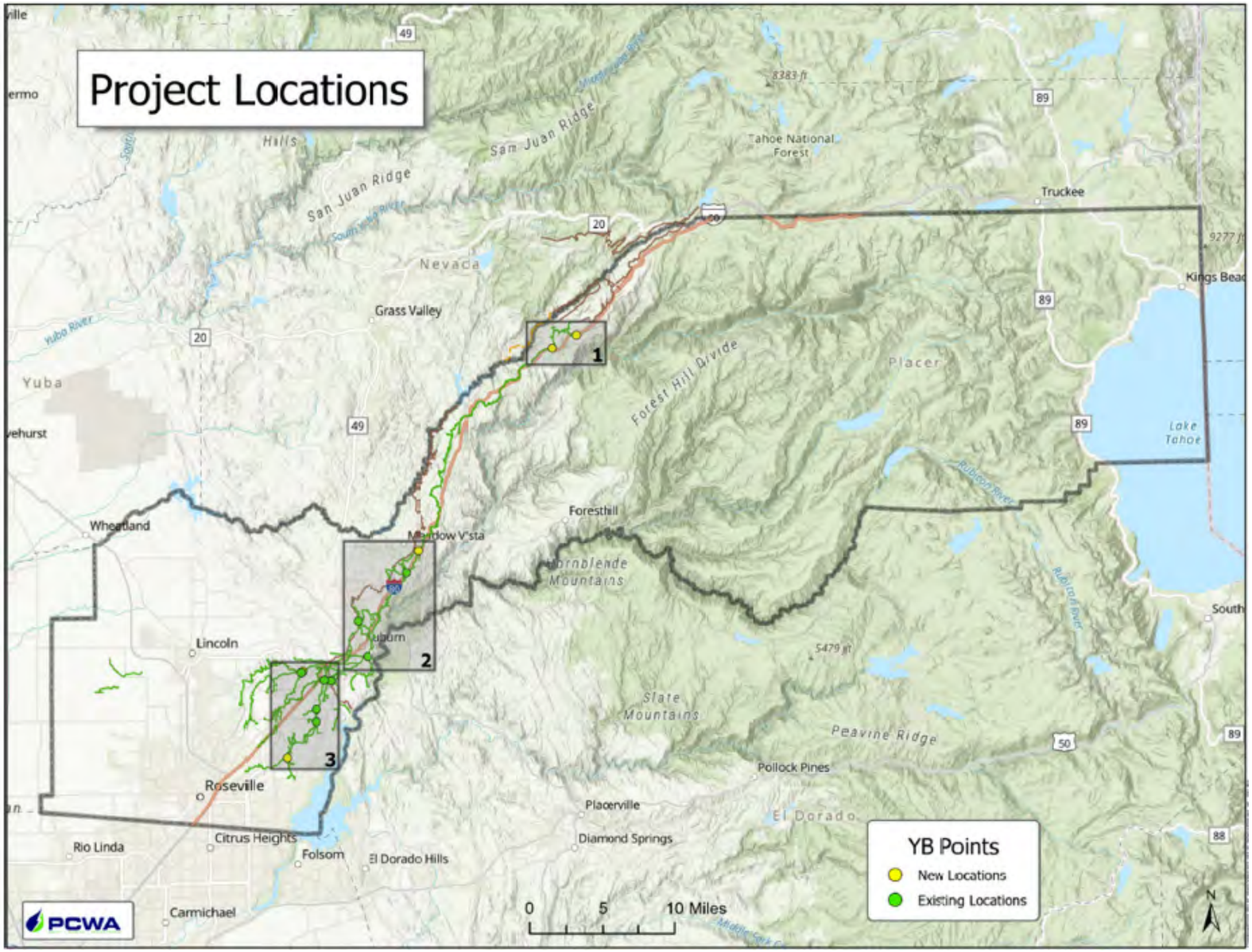

Figure 3. *Project Locations Overview – Rubicon Gate Installations*

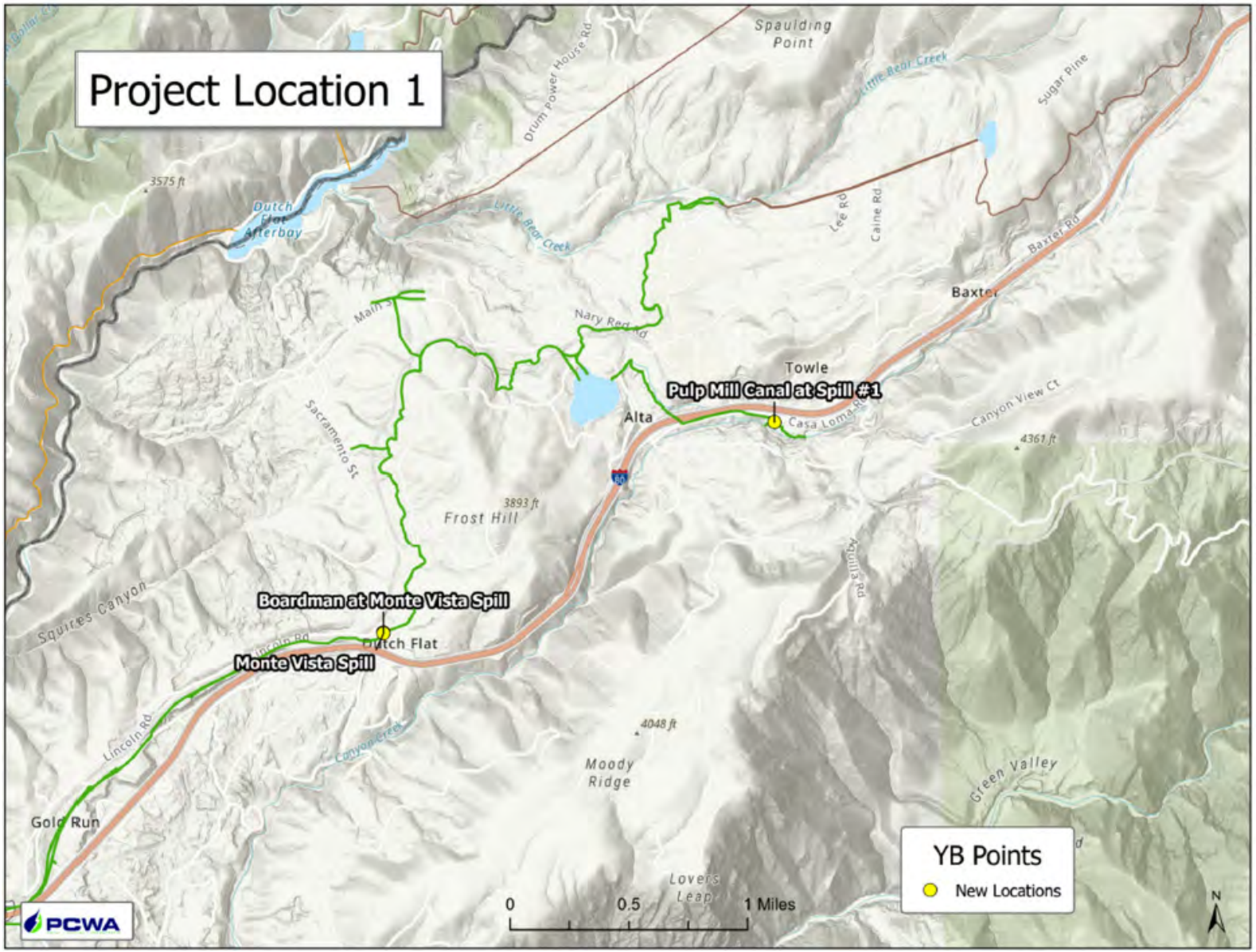

Figure 4. *Project Location 1 – Rubicon Gate Installations*

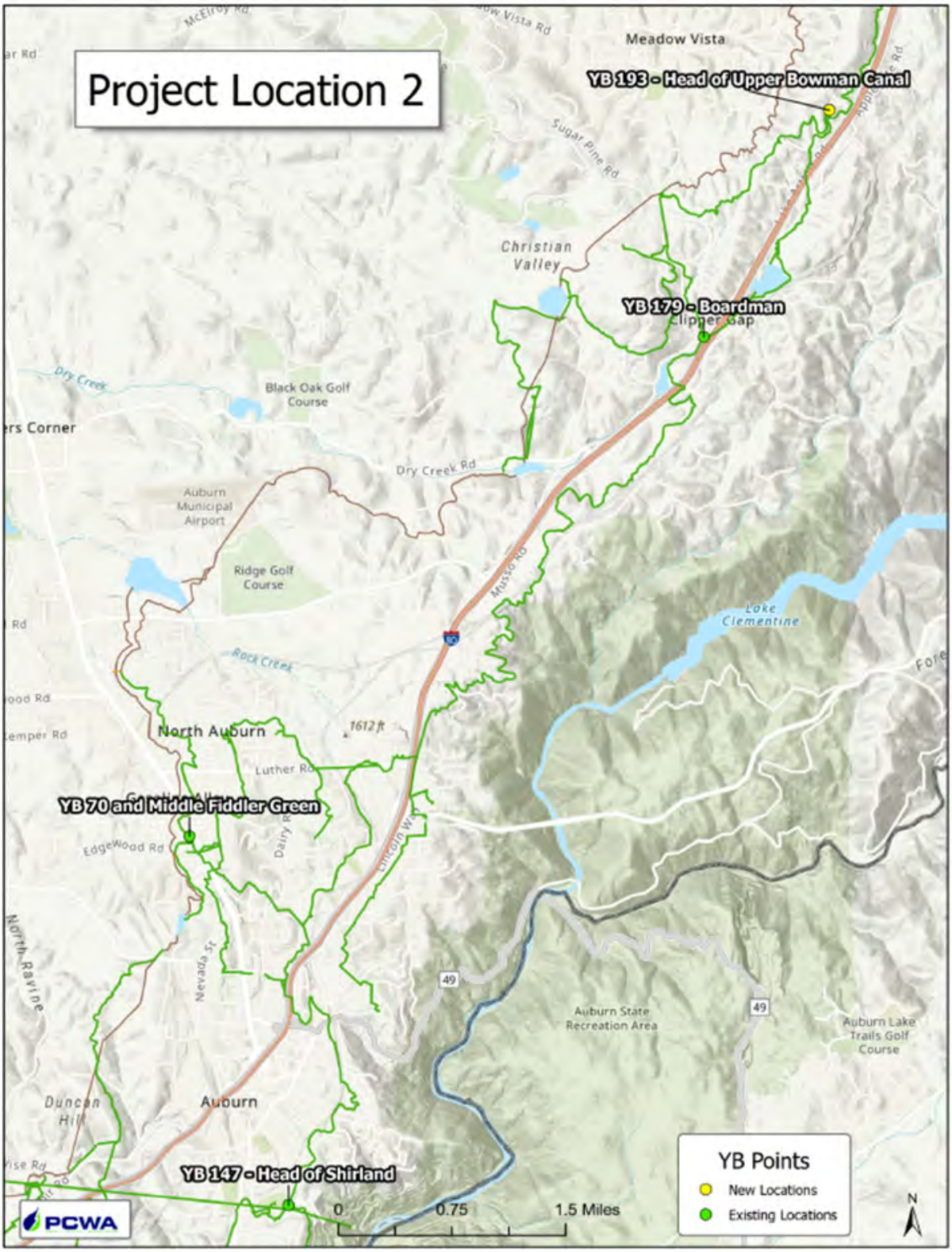

Figure 5. *Project Location 2 – Rubicon Gate Installations*

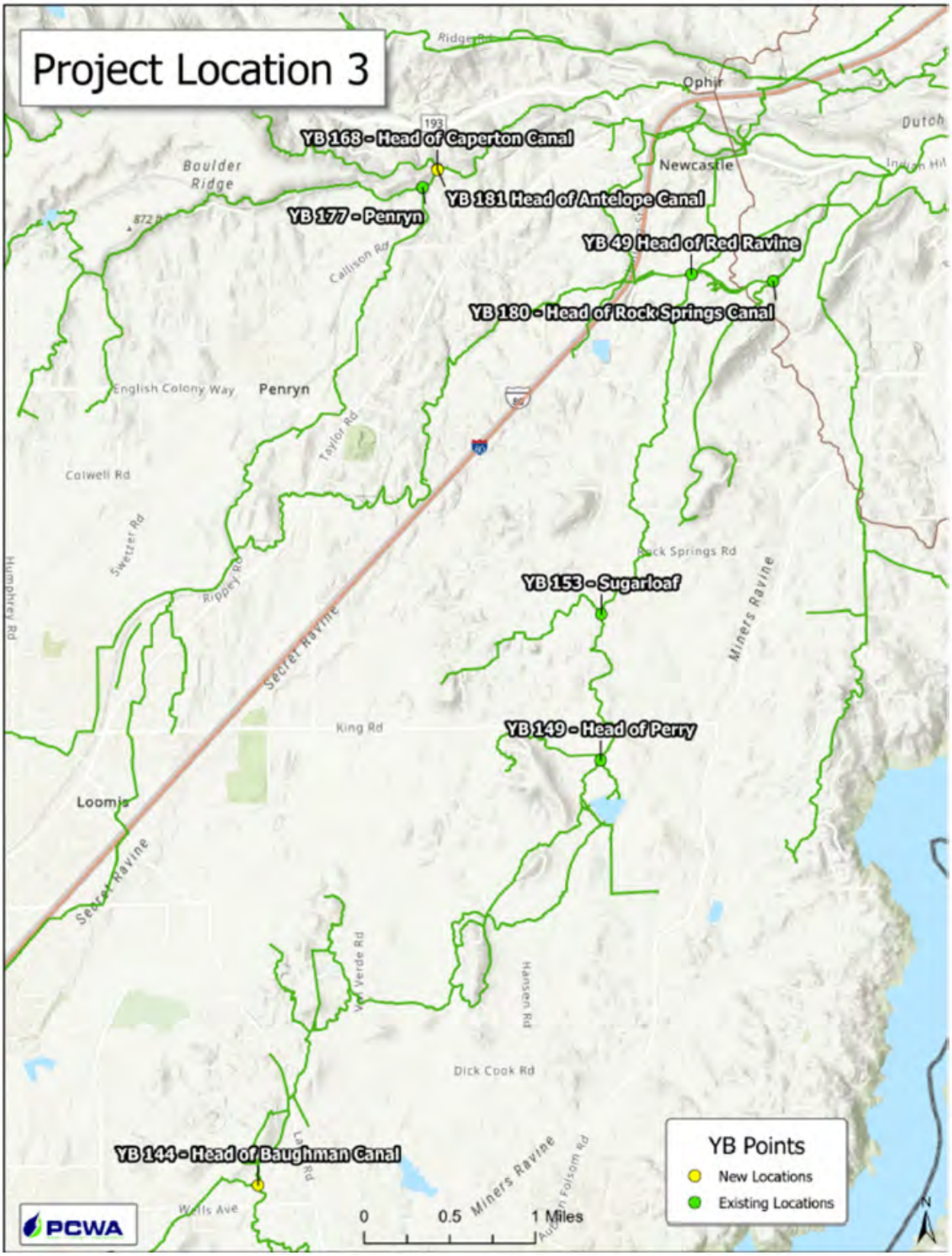

Figure 6. *Project Location 3 – Rubicon Gate Installations*

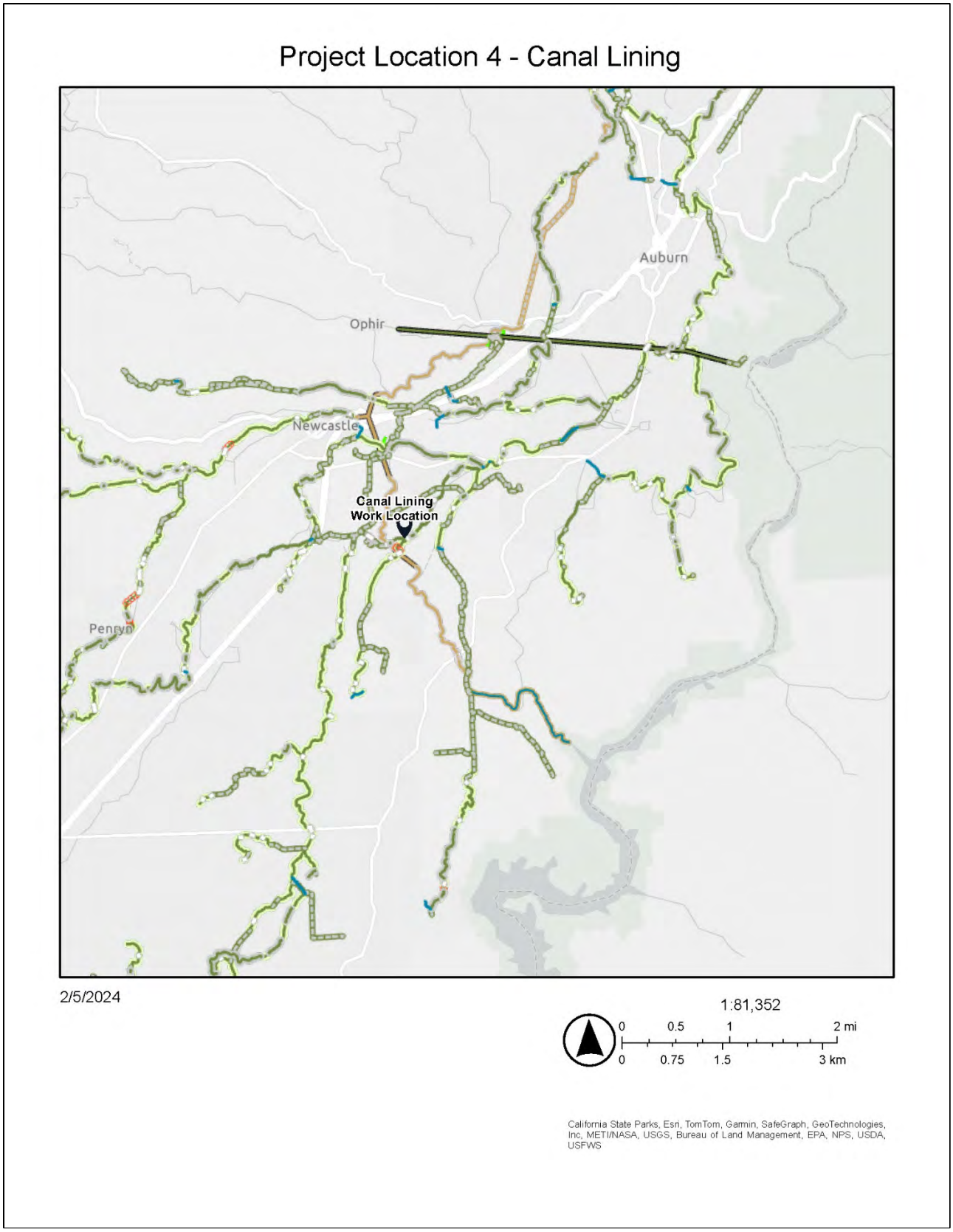

Figure 7. *Project Location 4 – Canal lining*

Technical Project Description

Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work.

The configuration of PCWA's current water delivery system lends to conservation and efficiency challenges due to the age, location, capacity, and individual infrastructure components. This Project will address water efficiency and conservation needs through improvements and upgrades to the raw water conveyance system and by changing customer behaviors and habitats through water conservation rebate programs and public education. These two components work together to encourage and incentivize water conservation throughout PCWA's service area while also improving reliability and maintaining a high degree of efficiency.

PCWA's network of raw water conveyance canals run generally from east to west down the slopes of the Sierra Nevada foothills in heavily forested rural areas. PCWA's raw water service area begins near the community of Alta California, at an elevation of 3,745 feet. These canals serve all eight of PCWA's Water Treatment Plants (WTPs), which sit in the lower elevations of foothills, and provide water to the more densely populated cities and urban areas on the Sacramento Valley floor (elevation of 285 feet). PCWA serves more than 4,000 customers from this raw water conveyance canal system, who in turn irrigate an unknown number of acres of farmland for Christmas trees, citrus, wine grapes, nurseries, stock watering, flowers, small farms, landscapes, green belts, and other general irrigation purposes. Currently, PCWA's raw water conveyance system comprises open channel earthen canals (50.5 miles), open channel lined canals (67.4 miles), piped sections (44.6 miles – AC, Steel, Ductile Iron), and flumes (1.5 miles).

The primary source of the raw water is surface water through agreements with Pacific Gas and Electric (PG&E) Drum/Spaulding hydroelectric project. Other sources of water include groundwater wells (used only during water supply shortages), pre-1914 water rights, and the Middle Fork Project, a hydroelectric project owned and operated by PCWA on the Middle Fork of the American River in Placer County. Surface water supplies for PG&E and PCWA are dependent upon precipitation to refill reservoirs, especially as accumulated snow. The snowpack acts like an additional reservoir, providing water storage, slowly melting to maintain reservoir levels into June or early July. With climate change, in recent years more precipitation falls as rain, effectively reducing the amount of water stored as snow, and snow is melting earlier in the season, impacting the amount of water available in the later summer months (Dauphin and Carlowicz, 2021).

Any water conserved from this proposed Project has the potential to remain in storage for use later in the year during high demands for water consumption or hydroelectric generation. There is a potential that some or all the conserved water will remain in the river system and ultimately add to the flow into Folsom Reservoir, a Reclamation-operated reservoir, or further downstream to the Sacramento Delta and made available for Central Valley Project, State Water Project, or environmental benefit.

Raw Water Conveyance System Improvements

Currently, each of the canals proposed for upgrade have a manually operated headgate or check boards to control the amount of flow into the canal, or to control the maximum water level in the canal before being released as a spill. Each of these canal features are manually adjusted by the canal operator, at minimum once a day, after a flow change in the main canal, or changes in demand in the branch canal. Water usage in the main and branch canals vary throughout the day, creating increases and decreases in the upstream water level which causes under- or over-deliveries into the branch canal. Under-deliveries result in customers along the branch canal not receiving water, whereas an over- delivery in the branch canal results in unrecoverable water loss at the end of the canal (spill).

The installation of Rubicon automated FlumeGates will modulate, as needed, to maintain a constant flow into each of the branch canals, regardless of the water level in the main canal, resulting in reduced unrecoverable losses at the termination of the canal. The Rubicon FlumeGates installed at the spills will regulate the upstream water level to prevent overtopping of the canal; measure the total amounts of flow through the gate; and calculate the amount and rate of water being spilled to reduce the potential of damage to the downstream spill channel, especially during times of heavy precipitation that has increased in recent years and is expected to become more frequent with climate change (Cawdrey and Carlowicz, 2023). These actions performed by the Rubicon gates are dependent upon the individual location and purpose within the overall canal system.

A FY2018 WaterSmart award (Agreement #R18AP00234) allowed PCWA to install five Rubicon automated FlumeGates, reducing water loss and increasing water management efficiency. After the installation of each FlumeGates, there was an immediate reduction in the number of “no water” instances from customers and a reduction of unrecoverable water loss from each of the canal ends. Photos from previously awarded automated FlumeGate installation sites are included in Figures 8 through 11.

Under the proposed Project, PCWA will install another 6 Rubicon FlumeGates and tie 10 existing Rubicon gates to SCADA to coordinate and regulate the inflow to the canals remotely, or automatically regulate releases from the canal to reduce spill. As previously performed, PCWA Field Services crews will construct mounting frames for each Rubicon automated gate, then remove the existing, manually operated headgates or checkboards and, if needed, modify the canal perimeter to accept the mounting frame. Under the supervision of Rubicon Water personnel, PCWA crews will install automated FlumeGate onto the fabricated mounting frames. Rubicon Water personnel will then commission each FlumeGate, making it operational. Concurrently, the 16 Rubicon FlumeGates will be integrated into the new SCADA system to allow for remote monitoring and control. Control logic and interface screens will be developed by PCWA SCADA staff. After installation, each FlumeGate will be visited considerably less often, only weekly to remove any debris and ensure all equipment is operational.

Figure 8. *Before FlumeGate Installation*

Figure 9. *After FlumeGate Installation*

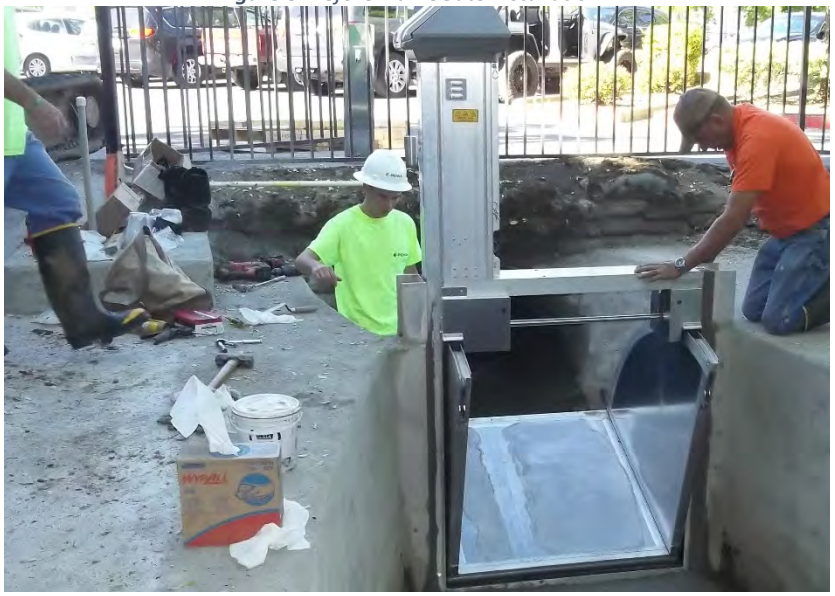

Figure 10. *During FlumeGate Installation*

Figure 11. *After FlumeGate Installation*

Currently, PCWA's raw water conveyance system contains 50.5 miles of open channel earthen canal. Open channel canals are exposed to surrounding elements and weather, including dirt, sticks, rock, debris, snow, heavy rain, and vegetation. Over time, debris accumulates in canals reducing their capacity. Regular cleaning and inspections are necessary for flow regulation and to identify when repairs and maintenance are needed.

PCWA annually allocates funds to increase the efficiency of the operation of the raw water conveyance system by lining earthen segments of the canal system. This is accomplished by lining earthen canals with Gunite. Gunite is a cement sand mixture that is "shot in place" to the canal bottom and sides. Gunite helps avoid water loss from ground absorption (seepage) and leaks, and to minimize canal cleaning needs. In 2022, almost 13,000 linear feet (2.5 miles) of Gunite was applied throughout PCWA's canal system. Work is done year-round, as weather permits. With a large, sprawling system in heavily forested areas and more than 50 miles of canal remaining to line, a 2.5-mile per year pace is typical of PCWA's maintenance budget, crew availability, and competing priorities. Nonetheless, canal lining has resulted in a substantial reduction of unrecoverable water loss and an increase in raw water delivery efficiencies and remains a priority activity for PCWA's Field Services department.

For the canal lining component of this Project, approximately 770 linear feet will be lined along the Boardman Canal upstream of PCWA's Foothill Water Treatment Plant. Due to the flow volumes that pass through this canal section and the steep topography, this section sees scouring, erosion, vegetation overgrowth, and debris accumulation. Figure 12 shows a representative photo of this section of the Boardman Canal. Crews will clear debris, vegetation, trees and prepare the canal for Gunite application. Hauled rock and dirt will be used to fill voids and low spots within the canal bottom and graded to a consistent surface. Steel wire mesh, generally 10-gauge wire, will be used to line the canal sides and bottom to hold the Gunite in place and provide reinforcement. All work will be performed within PCWA's canal maintenance easement through a single property, and the property owner will be informed in advance of the work. It is anticipated that canal cleaning, preparation, and Gunite application will take approximately 5 weeks of a 5-man crew. Work will be scheduled to begin in January 2025 with an estimated completion date of June 2025.

Figure 12. *Proposed Boardman Canal lining segment*

Water Efficiency Rebates

Many of PCWA's customers have upgraded to beautiful, low-maintenance, and water-wise landscapes (see Figures 13 and 14), while incorporating new and more water-efficient household appliances. Water conservation incentives and services can make homes and businesses require lower water and energy usage and reduce maintenance costs. Further, increased water efficiency helps to reduce waste, pollution from irrigation runoff, and greenhouse gas emissions from water pumping and heating.

Although PCWA has been offering rebates for close to 10 years, in recent years PCWA has increased the visibility, promotion, and robustness of its rebate programs and has seen a 106% rise in customer applications. In 2021, 768 rebate applications were received and PCWA provided a total of $149,572 in rebates resulting in an outdoor water savings of 19 AF per year and an indoor savings of 10 AF per year. It is evident that rebate participation, and thus water savings is directly tied to the amount of promotion and education that PCWA conducts in the community. Under the proposed Project, PCWA will increase outreach and communication regarding rebates and water conservation to all customers across their service area. Rebates will be offered to all 41,000 treated and raw water customers within Placer County and will be available through PCWA's website.

In addition, there are tremendous opportunities to incentivize commercial customers to participate in rebate programs, as well as focused efforts to install highly efficient toilets, particularly within DACs. Expansion of the current water efficiency rebate programs and water savings goals will be achieved by the following:

- Doubling the entire rebate number and amounts available, see Table 1.
- Targeting commercial customers by increasing the total square footage of available rebates for lawn replacement, increasing Smart Controllers and irrigation efficiencies, and proactively offering water wise house calls.
- Focusing on DAC communities that need assistance with high-efficiency toilet installation by a specialized outreach strategy in these Census Tracts and an increased rebate amount.
- Raising the awareness of water conservation benefits and available rebates through a tailored outreach and promotion campaign.

According to the 2023 Toilet Saturation Study performed by RWA, approximately 70,000 toilets need to be upgraded to high-efficiency toilets within PCWA's service area and the largest market opportunity is single family homes. Moreover, there are three Census Tracts that are disadvantaged or severely disadvantaged and need 75% of their toilets replaced. PCWA's water efficiency team will develop an outreach strategy and tool, such as a flyer or postcard, for outreach to these customers and/or neighborhoods as candidates for toilet replacement.

Figure 13. *Before Residential Lawn Replacement Rebate Installation in 2023*

Figure 14. *After Residential Lawn Replacement Rebate Installation in 2023*

Table 1. PCWA Proposed Water Efficiency Rebate Program

Outdoor Rebates	2024 Proposed Rebates	Past Rebate
Residential Lawn Replacement Rebate	$3 per sq. ft, up to 1,000 sq ft $3,000 max per intervention	$2 per sq. ft, up to 1,000 sq ft $2,000 max per intervention
Commercial Lawn Replacement Rebate	$3 per sq. ft, up to 5,000 sq ft $15,000 max per intervention	$3 per sq. ft $8,000 max per intervention
Residential Irrigation Efficiencies Rebate	$500 max per intervention	$500 max per intervention
Commercial Irrigation Efficiencies Rebate	$2,000 max per intervention	Combined with lawn rebate – New**
Residential Smart Controller Only	$250 max per intervention	$250 max per intervention
Commercial Smart Controller Only	$1,500 max per intervention	New**
Residential Water Loss (Leak Rebate)	$1,000 max per intervention	New**
Commercial Water Loss (Leak Rebate)	$2,000 max per intervention	New**
Storage Tank	$1,000 for tanks >2,000 gallons $5,00 for tanks <2,000 gallons	New**
Indoor Rebates	**2024 Proposed Rebates**	**Past Rebate**
High-Efficiency Toilet (HET)/Urinal Rebate	$100 max per intervention	$50 max per intervention
High-Efficiency Clothes Washing Machine (HEW) Rebate	$150 max per intervention	$150 max per intervention

Evaluation Criteria

Evaluation Criteria A – Quantifiable Water Savings (25 points)

Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.

Quantifiable water savings from the multiple components of the proposed Project are estimated to be a total of approximately 487.11 acre-feet per year.

- Canal gate automation and SCADA improvements: 414 acre-feet
- Canal lining: 20.001 acre-feet
- Water Efficiency Rebates: 53.11 acre-feet

Describe current losses: Please explain where the water that will be conserved is currently going and how it is being used. Consider the following:

- ***Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch seeping into the ground)?***

There are various conveyance losses including unauthorized diversions, excessive authorized diversions, transpiration, and seepage. Over-deliveries result in spillage onto adjoining parcels, other irrigation ditches, or into natural watercourses. Seepage results in water that infiltrates the ground to the groundwater basin or can daylight to natural watercourses depending on the soil type, topography, and underlying bedrock formations. Current water losses from customer landscapes or indoor fixtures are either evaporated, infiltrated into the ground, or result in more wastewater for treatment.

- ***If known, please explain how current losses are being used. For example, are current losses returning to the system for use by others? Are current losses entering an impaired groundwater table becoming unsuitable for future use?***

Current water losses via spillage enter adjoining parcels, ditches, or into natural watercourses. The water spilled at the end of the ditch is deemed unrecoverable water. Further, groundwater infiltration may not be recoverable since, for the most part, groundwater in Placer County exists through fractured granite rock substrate and conventional groundwater basins are not common. Current water losses by customers include inefficient watering practices and/or landscapes that require excessive water use. These water losses are going to evapotranspiration or runoff from the customer's property. Similarly for indoor use, many homes, particularly in DACs, are still using inefficient water fixtures, such as washing machines, shower heads, and toilets, that send water losses to the wastewater system.

- ***Are there any other known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?***

No, there are no known benefits that PCWA is aware of.

- *Describe the support/documentation of estimated water savings: Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.*

The Rubicon FlumeGates installed for this Project, and the integration of all the Rubicon FlumeGates into the SCADA system is expected to increase efficiency in managing more than 36,000 acre-feet of water per year and reduce water losses from spills by 414 acre-feet per year. After the Rubicon FlumeGates are installed and integrated into the SCADA system, flows into the canal, and amounts of water spilled, will be compared to historical canal operator smartphone app entries and/or existing monthly spill totals recorded by the SCADA system. Monthly post-project water balance values will also be compared to pre-project mass balances during the months without precipitation events to evaluate if a mass balance comparison can be used to evaluate the performance of the Rubicon FlumeGates, generally between June and October annually. See the below irrigation flow measurement questions and responses for the detailed water savings calculations.

Canal lining component of this Project will result in a substantial reduction of unrecoverable water loss from ground absorption (seepage) and leaks. PCWA performed a study in 2005 that analyzed the cost effectiveness of canal lining, potential water savings, and a basis for selecting and prioritizing canal reaches for future lining. Potential water savings is calculated based on the approach outlined in the study and the following parameters: seepage coefficient of the soil (K), canal wetted area (A), and seepage opportunity time (T). See the below canal lining questions and responses for the detailed water savings calculations.

PCWA tracks water savings achieved by the water efficiency rebate program on an annual basis. With the resources allocated to the rebate program to date, the highest grossing year in water savings was 30 acre-feet. The methodology used to calculate for each type of rebate varies depending on the data that is collected and the industry accepted methodologies that are available. PCWA relies on RWA's regional developed methodologies and those provided by Environmental Protection Agency's (EPA) WaterSense program guidance The estimated annual water savings for this component is estimated to be 53 acre-feet based on the expanded rebate offerings. Appendix A provides the calculations and expected water savings for each of the rebate programs. Additionally, see the specific rebate questions and responses below for more water savings calculations.

Please address the following questions according to the type of infrastructure improvement you are proposing for funding.
(1) Canal Lining/Piping: Canal lining/piping projects can provide water savings when irrigation delivery systems experience significant losses due to canal seepage. Applicants proposing lining/piping projects should address:

- *How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.*

For canal lining projects, water savings are directly correlated to seepage losses for the segment of canal that would be going from an unlined condition to a lined condition. Calculations are presented in the next question response.

- *How have average annual canal seepage losses been determined? Have ponding and/or inflow/outflow tests been conducted to determine seepage rates under varying conditions? If so, please provide detailed descriptions of testing methods and all results. If not, please provide an explanation of the method(s) used to calculate seepage losses. All estimates should be supported with multiple sets of data/measurements from representative sections of canals.*

Extensive analyses of the canal seepage losses and potential water savings opportunities are described in a study performed by PCWA in 2005 entitled Technical Memorandum 2 – Canal Lining Feasibility for Placer County Water Agency dated May 2005. This study describes that the conveyance losses associated with this system are primarily from spillage, seepage and evaporation and the characteristics of the soil conditions that exist through the canal system. Through this study, the cost effectiveness of canal lining that has been performed to date was assessed and a basis for selecting and prioritizing canal reaches for future lining to eliminate seepage losses. Annual canal seepage losses are determined by the methodology presented in the study based on the following equation for the volume of seepage loss (V):

- V (acre-feet/yr) = [K (ft^3/ft^2-day) * A(ft^2) * T(days)] / 43,560(ft^3/ac-ft)
- V = [0.155 (ft^3/ft^2-day) * 15,400 (ft^2) * 365 (days)] / 43,560 (ft3/ac-ft) =
  - <u>20.001 acre-feet per year</u>
- *(K) seepage coefficient of the soil.* Two methods of determining seepage estimates were conducted by PCWA's 2005 Canal Lining Feasibility Study: ponding tests and inflow/outflow tests for select, representative locations within PCWA's entire raw water conveyance system. The seepage loss coefficient for this section of canal is considered moderately low, K = 0.155 (ft^3/ft^2-day), see Appendix A for excerpts from the study that characterizes this canal section.
- *(A) canal wetted area.* Length of canal section multiplied by the average width of the canal section in feet including the side slopes, A = 770 ft x 20 ft = 15,400 ft^2
- *(T) seepage opportunity time (T).* PCWA provides customers with water year-round in this section of the canal system, T = 365 days.

- *What are the expected post-project seepage/leakage losses and how were these estimates determined (e.g., can data specific to the type of material being used in the project be provided)?*

The expected post-project seepage loss is zero. Gunite lining provides a watertight surface that will result in zero seepage/leakage as long as proper periodic maintenance is performed to prevent Gunite cracking.

- *What are the anticipated annual transit loss reductions in terms of acre-feet per mile for the overall project and for each section of canal included in the project?*

The anticipated annual transit loss reductions are expected to only be related to the reduction of seepage, which is approximately 20 acre-feet per year. Evaporation, transpiration, and other transit losses are expected to remain unchanged.

- *How will actual canal loss seepage reductions be verified?*

Once the segment of the Boardman Canal is lined, previous inflow measurements at upstream points can be compared against new measurements to verify the amount of reduced seepage loss. Inflow/outflow testing will be conducted using an acoustic Doppler water velocity measurement device.

- *Include a detailed description of the materials being used.*

Approximately 190 yards of shot in place Gunite, approximately 10 rolls of 10-gauge wire, and approximately 450 tons of rock.

(2) Irrigation Flow Measurement: Irrigation flow measurement improvements can provide water savings when improved measurement accuracy results in reduced spills and over-deliveries to irrigators. Applicants proposing irrigation flow measurement projects should address:

- *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

Annual water savings estimates have been determined using spill data recorded by canal operators via an internal GIS webapp. Data was then compiled and analyzed to determine the approximate total of water lost via spills for the 2021 irrigation season (April-October). Data was then narrowed down to include only canals affected via this project to create an estimated total of relevant spills. Relevant spillage amounts total approximately 592 acre-feet of water under the criteria listed above. Based on other automation projects within PCWA's system, spill volumes have been reduced by approximately 40 to 60% when automated gates have been installed instead of manual gates. With the addition of operational efficiency techniques and further automation of all canals in PCWA's system, a conservative estimate in water spillage reduction is estimated at 70%. For the purposes of this exercise, 70% of spill reduction would conserve approximately 414 acre-feet per irrigation season under the above circumstances.

  - Reduced spillage due to automation = (0.70) *592 acre-feet = <u>414 acre-feet per year</u>

- *Have current operational losses been determined? If water savings are based on a reduction of spills, please provide support for the amount of water currently being lost to spills.*

Current operational losses have been determined via written spill records collected by canal operators. Data collected indicates that during PCWA's 2021 irrigation season (April-October) is approximately 592-acre feet of water was lost along canals identified within this project scope due to spills.

- *Are flows currently measured at proposed sites and if so, what is the accuracy of existing devices? How has the existing measurement accuracy been established?*

Flows are currently measured through the use of an open channel propeller meter upon adjustment of the headgate. Once the flowrate is set it is recorded along with the time of day onto a daily log sheet.

- *Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.*

Rubicon SlipMeters and FlumeGates automatically adjust to maintain a consistent flow rate in response to changes in upstream and downstream flows which reduces the amount of water deemed unrecoverable from spillage. Additionally, Rubicon automatic gates can be utilized to monitor and meter the flow of water with an accuracy of +/- 2.5%.

- *Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?*

Annual farm delivery volumes will be reduced by PCWA maintaining an accurate water level in the canal. PCWA delivers water by the miners' inch by attempting to maintain 6 inches of water at the orifice plate that delivers the water to the customer. Currently, the water levels fluctuate, which over-delivers water and spills the remaining water that is not taken by the customer. These water savings are included in the estimated 70% reduction in spills, which equates to the 414 AF per year saved.

- *How will actual water savings be verified upon completion of this project?*

After the Rubicon FlumeGates are installed, flows into the canal, and amounts of water spilled, will be compared to historical canal operator smartphone app entries and/or existing monthly spill totals recorded by the SCADA system. Monthly post-project water balance values will also be compared to pre-project mass balances during the months without precipitation events to evaluate if a mass balance comparison can be used to evaluate the performance of the Rubicon FlumeGates, generally between June and October annually.

(3) Turf Removal: Applicants proposing turf removal projects should address:

- *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

Water saving estimates are calculated and totaled annually for each rebate using information from RWA's Water Efficiency Program and guidance from the EPA. Lawn replacement water savings are estimated to be 37 gallons per year per square foot of turf removed (for turf removals greater than 1,000 square feet) when replaced with qualifying water efficient landscaping. Irrigation efficiencies water savings are estimated at 33,000 gallons annually per intervention. See Appendix A for detailed water savings calculations.

- *What is the total surface area of turf to be removed and what is the estimated average annual turf consumptive use rate per unit area?*

The total estimated surface area of turf proposed to be removed in 2024 is 80,000 square feet for interventions over 1,000 square-foot per intervention. This includes 30,000 square feet for residential and 50,000 square feet for commercial customers turf removal projects. The estimated average annual turf consumptive rate and methodology is 37 gallons per square foot per year basis on 1,000 square feet or more per intervention.

PCWA does not calculate water savings for turf removal interventions/projects that are less than 1,000 square feet because PCWA does not have a current methodology to do so. Further, the average turf removal intervention in PCWA's service area is 800 square feet, so there are water savings that are not being calculated. Appendix A only presents water savings from interventions that are over 1,000 square feet. Therefore, the water savings estimated for turf removal is an underestimate for what will be realized. PCWA intends to develop a methodology to calculate water savings for turf replacement interventions that are less than 1,000 square feet.

- *Was historical water consumption data evaluated to estimate average annual turf consumptive use per unit area? If so, did the evaluation include a weather adjustment component?*

Yes, the 37 gallons per square foot per year is based on historical consumption that is specific to the region provided by RWA's Water Efficiency Program and is not PCWA specific. No, there was no adjustment for weather.

- *Will site audits be performed before applicants are accepted into the program?*

Yes, PCWA staff virtually audit all turf removal projects before and after the lawn replacement takes place. Customers are required to submit photo verification, receipts, and documentation that must be approved by PCWA's Water Efficiency Program Manager for the customer to receive their rebate. PCWA provides the rebate in the form of a credit issued to the customer's water bill account. PCWA reserves the right to visit the site and verify that the rebate has been installed properly, customers agree to this condition by signing their rebate application. Historically, PCWA has physically inspected 100% of all lawn replacement rebates issued but due

to constraints on resourcing and staffing availability. In 2023, PCWA moved to a virtual audit system to increase the number of rebates they were able to administer and increase the efficiency of the lawn replacement program for both customers and staff.

- *How will actual water savings be verified upon completion of the project?*

PCWA evaluates average water consumption for each participant in the lawn replacement rebate program by reviewing their usage through their water meter before and after the date of installation. PCWA then determines the total amount of reduction in water consumption for that participant and equates the amount of reduction in consumption to water savings. In 2021 consumption rates for customers that received the lawn replacement rebate decreased by an average of approximately 1.1 million gallons. In addition, PCWA has recently become a participant in the Alliance for Water Efficiency tracking program that can provide an integrated water management planning tool that can help track actual water savings. PCWA intends to use this tool to help track rebate success in 2024.

(4) Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles: Applicants proposing smart irrigation controllers, controllers with rain sensor shutoff, drip irrigation, or high-efficiency nozzle projects should address:

- *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

Water saving estimates are calculated and totaled annually for each rebate using information from RWA's Water Efficiency Program and the EPA's WaterSense Program. Replacing a standard clock-based controller with a WaterSense labeled irrigation controller can save an average home up to 15,000 gallons of water annually. These annual savings are assumed for each of the smart controller rebates provided to customers. See Appendix A for detailed water savings calculations.

- *Was historical water consumption data evaluated to estimate the percent reduction in water demand per unit area of irrigated landscape? If so, did the evaluation include a weather adjustment component?*

Yes, however, the water demand per unit area is based on the best available data (nationwide) from EPA's WaterSense Program and is not PCWA specific. It is unknown whether or not a weather adjustment component was used.

- *What types (manufacturer and model) of devices will be installed and what quantity of each?*

Customers must install EPA WaterSense approved Weather Based Irrigation Controllers. This includes manufacturers like Hunter, Rainbid, Rachio, Orbit, Aeon, and Wyze. Popular models for PCWA's customers are Hunter HPC and Pro-HC, Rainbird ST8, Orbit B-Hyve, and the Rachio3 Smart Sprinkler Controller. There are more than 150 Smart Controllers planned to be installed

with this proposed Project. The quantities of each type of controller are unknown, selections will be made by the individual customers.

- *Will the devices be installed through a rebate or direct-install program?*

Customers will install their own Smart Controller devices. PCWA provides the rebate in the form of a credit issued to the customer's water bill account.

- *Will site audits be performed before and after installation?*

Yes, PCWA staff virtually audit Smart Controller interventions after installation. Customers are required to submit photo verification, receipts, and documentation that must be approved by PCWA's Water Efficiency Program Manager for the customer to receive their rebate. PCWA reserves the right to visit the site and verify that the rebate has been installed properly, customers agree to this condition by signing their rebate application.

- *How will actual water savings be verified upon completion of the project?*

PCWA evaluates average water consumption for each participant in the Smart Controller rebate by reviewing their usage through their water meter before and after the date of installation. PCWA then determines the total amount of reduction in water consumption for that participant and equates the reduction in consumption to water savings. In 2021 consumption rates for customers that received the Smart Controller rebate decreased by an average of approximately 1.4 million gallons. In addition, PCWA has recently become a participant in the Alliance for Water Efficiency tracking program that can provide an integrated water management planning tool that can help track actual water savings. PCWA intends to use this tool to help track rebate success in 2024.

(5) High-Efficiency Indoor Appliances and Fixtures: Installing high-efficiency indoor appliances and fixtures can provide water savings for municipal water entities where there is significant potential for replacing existing non-efficient indoor appliances and fixtures. Applicants proposing high-efficiency indoor appliance and fixtures projects should address:

- *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

Water saving estimates are calculated and totaled annually for each rebate using information from RWA's Water Efficiency Program and the EPA. Replacing pre-1994, 3-gallon flush toilets with high-efficiency WaterSense labeled toilet (1.28 gallons per flush) saves 19 gallons per person per day. Replacing old clothes washing machines with a water-efficient clothes washer saves 15 gallons per load (average top loader is 30-40 gallons per load). See Appendix A for detailed water savings calculations.

- *What types (clothes washers, shower heads, etc.) of appliances and fixtures will be installed and what quantity of each?*

There are 450 high-efficiency (1.28 gallons per flush or less) WaterSense toilets planned to be installed as part of this proposed Project. There are 100 high-efficiency clothes washing machines (that have a CEE Advanced tier 1 or tier 2 water factor) planned to be installed as part of this proposed Project.

- *Have studies been conducted to verify the existence of non-efficient appliances and fixtures? Provide published water savings rates for each of these devices and reference the source for each of the device savings rates.*

PCWA participated in a 2023 Toilet Saturation Study performed by RWA to identify Disadvantaged Communities within PCWA's service area to find multi-unit customers eligible for indoor fixture direct installation if built prior to 1994. Water savings could be achieved if 3-gallon flush toilets are replaced with high-efficiency WaterSense labeled toilet (1.28 gallons per flush).

- *Will the devices be installed through rebate or direct-install programs?*

PCWA is participating in a direct-install pilot program provided by RWA. This pilot program is not part of this WaterSMART Grant Application funding request. However, a successful funding request through this WaterSMART grant Application would make it possible for PCWA to offer more rebate funds for customers and encourage them to participate in this direct-install pilot program.

- *How will actual water savings be verified upon completion of the project?*

Water savings estimates for the High-Efficiency Toilet (HET)/Urinal and High-Efficiency Clothes Washing Machine rebate programs are calculated annually using industry accepted methodologies such as those provided by RWA and the EPA. PCWA has recently become a participant in the Alliance for Water Efficiency tracking program that can provide an integrated water management planning tool that can help track actual water savings. PCWA intends to use this tool to help track rebate success in 2024 and implement it for the 2025 rebate program.

Evaluation Criteria B – Renewable Energy (20 points)

Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery – Section not applicable to this Project.

Describe the amount of energy capacity. For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

N/A

Describe the amount of energy generated. For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all

calculations in support of the estimate. Please explain how the power generated as a result of this project will be used, including any existing or planned agreements and infrastructure.
N/A

Describe the status of a mothballed hydropower plant. For projects that are bringing mothballed hydropower capacity back online, please describe the following: N/A

- *Clearly describe the work that will be accomplished through the WaterSMART Grant.*
- *Provide information about the capacity (in kilowatts) of the existing hydro system and the expected capacity once it is brough back on-line.*
- *Provide information about the duration that the hydro system has been offline and the reasons why it has been mothballed. Please include any regulatory reporting or filings (e.g., FERC filings) or other documentation regarding the system.*

Describe any other benefits of the renewable energy project. Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including: N/A

- *How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*
- *Expected environmental benefits of the renewable energy system.*
- *Any expected reduction in the use of energy currently supplied through a Reclamation project.*
- *Anticipated benefits to other sectors/entities.*
- *Expected water needs, if any, of the system.*

E.1.2.2. Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

- *If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.*

During times when the PG&E water supply may be reduced, especially during droughts, the conserved water may offset a portion of the need to pump water from the American River into the western PCWA service area, reducing energy requirements. Pumping from the American River to PCWA's canal system requires up to two pumping stations; the first station lifting water approximately 250 feet in elevation into a tunnel, and a second station lifting water approximately 200 feet in elevation out of the tunnel into a transfer basin, where the water enters a canal by gravity. The pumping is performed by 11 vertical turbine pumps that range in size from 17 cfs to 41 cfs. For the purposes of this exercise, a four-year annual average (2015-2019) energy usage for the two-lift pumping is used: 643 kwh per year to pump 1 acre-foot of raw water in the two-lift system.

PCWA anticipates an annual savings of approximately 434 AF in raw water through the proposed canal automation and lining components of this Project.

- 434 AF *643 kwh/AF per year =279,062 kwh per year.

In addition to the raw water savings, treated water is anticipated to be saved through the water rebate component of this Project and thus requires a different energy savings calculation. Water treatment processes use large quantities of energy to treat and distribute water to customers. Energy use for water treatment is expected to increase as more stringent water quality rules and improved disinfection technologies. Each of PCWA's WTPs are unique in their energy usage and ability to efficiently treat water based on the equipment, processes, and chemicals used at the specific plant. For the purposes of this exercise, a single WTP energy usage for treated water rate is used to represent PCWA's system: 1333.23 kwh to treat 1 million gallons of water per year.

PCWA anticipates an annual savings of approximately 53 AF or 17,313,800 gallons (17.3138 million gallons) in treated water through the proposed rebate component of this Project.

- 17.3138 MG * 1333.23 kwh/MG per year = 23,083.26 kwh per year.

In summation, total energy savings for this Project is:

- 279,062 kwh + 23,083.26 kwh = 302,145.26 kwh per year.

- *How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions*.

Creating automation within PCWA's canal system will address the impacts of climate change through the responsible usage of available water. The use of automated gates increases water conservation between 5-10% of total annual flow and mitigates the amount of water lost via spillage while maintaining a consistent flow rate for customers. With climate change, extreme amounts of precipitation in short periods of time are expected to fall as rain instead of snow in the Sierra Nevada Foothills during the winter months, resulting in increased runoff into the PCWA canals. The installation of the Rubicon automated FlumeGates will adapt to the changing canal water levels in real time, before the canal operator can drive to each site and make changes to the spill releases, or canal flows. Additionally, the automation of the canal negates the need for individual employees to travel to the site and manage the canal daily. The elimination of routine vehicle travel reduces the overall carbon emissions associated with manual operations of gates across such a large service area. Finally, canal lining will increase water conservation and mitigate the amount of water lost through ground seepage.

Reducing the amount of water used indoors for residential and commercial customers will also save water and energy, reducing the global warming pollution that results from wasted energy. The EPA estimates that if just one out of every 100 American homes were retrofitted with water-efficient fixtures, about 100 million kilowatt-hours of electricity per year would be saved—avoiding 80,000 tons of global warming pollution, or the equivalent of over 8 million gallons of

gasoline consumption. Using this comparison, an equivalent 0.0008 tons per kwh is calculated. Using PCWA's saved energy (in kwh) the total tons of global warming pollution is calculated as the following:

- 302,145.26 kwh per year * 0.0008 tons per kwh = 241.77 tons per year.

- *If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?*

The Project will result in reduced pumping and therefore reduced energy usage, see answer above to the first sub question for No. B.2.

- *Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.*

The estimated energy savings originate from the point of diversion.

- *Does the calculation include any energy required to treat the water, if applicable?*

Yes, this is described in the first sub question of No. B.2.

- *Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.*

Yes, the automation of the canal gates negates the need for individual employees to travel to the site and manage the canal. The elimination of routine vehicle travel reduces the overall carbon emissions associated with manual operations of gates.

- *Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).*

Though the proposed Project will not directly create renewable energy, PCWA receives water from the PG&E Drum/Spaulding hydroelectric project. Depending on where in the PG&E canal system PCWA receives water, PG&E water has passed through at least two and up to five hydroelectric power generators before being delivered to PCWA. Water conserved with this Project has the potential to increase hydroelectric production, dependent upon PG&E hydroelectric operations. Additionally, the automated gates are powered by solar panels that are placed atop the control pedestal which sits along the bank of the canal. The Project will install 16 total new solar panels for the automated gates.

Evaluation Criteria C – Other Project Benefits (15 points)

Resilience and Sustainability Benefits. *Will the project address a specific water and/or energy sustainability concern? Please address the following:*

- ***Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:***
- ***Describe recent, existing, or potential drought or water scarcity conditions in the project area.***

PCWA's service area is located in the foothills of the Sierra Nevada in Northern California. This region plays an essential role in water supply, as its snowpack, systems of waterways and meadows, and fractured granite groundwater act as a natural reservoir and more than 60% (CNRA, 2020) (some estimates are as high as 75%) of the State's water originates here (SNC, 2024 and Yosemite, 2024). The region is also subject to severe drought conditions, which threaten water supply and water quality resilience and sustainability. The droughts in California and throughout the American West have been worsened by rising temperatures caused by climate change. In 2022, scientists found that the region, from Montana to California to northern Mexico, experienced the driest 22-year period in more than 1,200 years (NOAA, 2024). The region's drought-related impacts result in inadequate drinking water supplies, inadequate agricultural water supplies, impacts related to lack of surface supply for aquatic habitats and critical downstream ecosystems, threats to downstream (out-of-PCWA's service area) groundwater basin overdraft, and increased risk of TMDL violations resulting from lower flows and higher concentrations of heavy metals. As a result of the most recent drought, PCWA reached Stage 2 of its water shortage continency plan. Although the region was pulled out of drought by extreme storms in the 2022 wet weather seasons, the volatility of the region's water cycle and weather is expected to increase, with "weather whiplash" being widely reported as the new normal for California (Spengeman and Osenga, 2023).

Working to ensure that water system infrastructure is as up to date and resilient as possible is critical, given these factors. This Project would conserve over 480 acre-feet (156 million gallons) of water per year. This would result in increased drinking and agricultural water supply reliability. The amount of water PCWA needs to draw from PG&E reservoirs would be reduced resulting in reduced pumping electrical costs and would potentially reduce diversions upstream and improve instream flow benefits. This Project will upgrade infrastructure resulting in increased drinking and agricultural water supply reliability.

Small, rural and disadvantaged communities throughout the PCWA's service area are particularly ill-prepared for the financial and operational consequences of sustained drought and climate change impacts. Few of these districts have any contingency plans, needs assessments or feasibility studies to support development of proactive capital improvement planning. The vulnerable populations of these communities need to build capacity to prepare for the consequences of climate change. This proposed Project includes rebate and public outreach programs to help rural communities prepare pragmatically for the future.

Further, PCWA's service area is also subject to extreme wildfire conditions, especially during extended droughts. Large-scale and landscape-level wildfire in the region such as the Mosquito Fire in 2022 (over 76,000 acres) threaten water quality and water supply. This Project aims to increase the reliability of water supply in the drier years when wildfires are a major concern.

- *Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?*

The most recent and the most severe drought in the PCWA's service area occurred in 2011 to 2017, which was the longest drought on record, with calendar year 2013 being the driest on record since 1878. PCWA water managers remain concerned about the water supply outlook and in the face of climate change they must prepare for even more serious challenges with every means available.

- *Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).*

Climate change projections for the PCWA service area vary considerably. However, if the worst-case projections occur, the region will be hard hit. Climate change studies of the PCWA's service area, such as the 2022 American River Basin Study (ARBS) performed by Reclamation identified an increased likelihood of extreme events, including more severe droughts and floods.

The ARBS concluded water management in the area is facing the combined climate pressures of warming temperatures, shrinking snowpack, shorter and more intense wet seasons, and more volatile precipitation. Warming has complex and interrelated effects: it reduces the share of precipitation falling as snow, causes earlier snowpack melting and higher winter runoff, and raises water temperatures. Warming also amplifies the severity of droughts and floods: warmer, more intense droughts increase pressure to draw down groundwater resources and warmer, more intense storms add stress to surface reservoirs—making it harder to meet often competing objectives.

- *Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.*

With the current canal gates, unnecessary amounts of water are pumped through the PCWA raw conveyance system to maintain adequate flows. When water that has been pumped into the system is lost through spillage it creates an unnecessary energy expenditure which promotes needless fossil fuel usage. With reductions in annual water storage within the PG&E and PCWA reservoirs due to the declining snowpack, less water is available for hydroelectric generation, increasing the need for alternate generation sources, most likely from fossil fueled generations. Less water is also available for consumptive needs, potentially requiring flows in the PCWA raw water conveyance to be restricted to treatment plant use only. Reductions in the PG&E supply requires additional groundwater pumping and/or pumping from the American River, increasing energy use.

- *Please describe how the project will directly address the concern(s) stated above.*

This Project will reduce the amounts of water seepage, spillage and overtopping at both canal ends by an estimated 434 acre-feet per year, thereby reducing the amounts of water required to meet PCWA water demands from PG&E storage reservoirs. The conserved water remaining in PG&E reservoirs will either be used to meet PCWA consumptive water demands, or the conserved water will be used to produce additional hydroelectric generation, which is a renewable energy source that doesn't rely on burning fossil fuels. Water remaining in PG&E storage for PCWA use, will also reduce the energy required to pump water from the American River by an estimated 279,062 kwh per year.

- *Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?*

Yes, the project will increase the efficiency and sustainability of the delivery of water to agricultural providers by minimizing spillage through automation. Correctly timed releases aid in application efficiency that increases sustainability and resiliency during times of drought brought on by climate change. During the winter months, the ability to release excess water from the canals during precipitation events as conditions change reduces the potential of upstream canal overtopping and canal failure, while allowing only the required flow past the automated FlumeGates to meet the demands of PCWA and third-party water treatment plants. During the summer months/irrigation season, only placing the amount of water required into the canal to meet demands reduces water loss at the canal ends. Reductions in water loss means that the conserved water would remain in storage for use later in the year without the need to develop new sources of water or operate pumps to access water right water, or groundwater. Additionally, the SCADA integration will allow for a quicker response to changes within the system allowing for more efficient management of water to take place.

- *Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

Conserved water is likely to be used in multiple ways. Several agricultural customers supplement PCWA surface water deliveries with groundwater to supply their fields with water for planting and weed control. Reductions in water loss from this Project has the potential to be used to assist the agricultural customers in utilizing more surface water and less groundwater, potentially reducing the use of diesel and/or electrically powered deep well pumps. Water loss reductions result in less water purchased from PG&E and/or pumped from the American River into Auburn Ravine. Reductions in deliveries from PG&E leaves the water in the PG&E Drum/Spaulding hydroelectric project either for additional power generation or deferring the need to develop new water supplies for PCWA. Reductions in the amount of water pumped from the American River allows additional flows into Folsom Reservoir, potentially to be used for

additional hydroelectric generation at Folsom Dam. Any water conserved with the implementation of this Project will remain in PG&E storage. During times when the PG&E water supply is less than normal, the conserved water may remain in storage for use by PCWA, or be used for additional hydroelectric power generation, the actual use of the conserved water is dependent upon PG&E hydroelectric operations, outside of PCWA control. If the water is made available to PCWA, it would offset the amount of pumped groundwater from the basin or reduce the amounts of water pumped from the American River.

- *Indicate the quantity of conserved water that will be used for the intended purpose(s).*

The actual fate of the conserved water that remains within the PG&E Drum/Spaulding hydroelectric reservoirs is solely dependent upon PG&E operations. PCWA collaborates closely with PG&E determining the annual amounts of water available to PCWA to determine if demands can or cannot be met with PG&E water, and plan how limited supplies will be used, including the amount of pumping required to make up for any PG&E reductions. During times of limited PG&E water supplies, all the conserved water is expected to be available to PCWA to meet water use demands.

- *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

If, during times of limited PG&E water supply, and the conserved water remains in PG&E storage for PCWA use, the conserved water will be released, as needed, into the PCWA canal system throughout the summer months. In the event that the conserved water was not needed, PG&E may elect to use the conserved water to generate additional hydropower, potentially offsetting fossil fueled electrical generation.

- *Will the project assist States and water users in complying with interstate compacts?*

No.

- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

There is not any known water related crises within the PCWA service area, except for drought. Drought can impact the annual amounts of water available to PCWA to meet usage demands. The water conserved with this Project complements larger state and regional efforts.

Ecological Benefits. Please provide information regarding how the project will enhance drought resilience by benefitting the water supply and ecosystem, including the following:

- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).*

As already described, the proposed Project will help to ensure that more water can remain instream instead of being pumped and lost due to raw water conveyance system or customer

inefficiencies. The Project has the potential to benefit the fall-run Chinook salmon (a federal species of concern) and steelhead (federally listed as a threatened species under ESA) within the Lower American River by allowing more water to remain instream and provide additional cold-water storage and cooler water temperatures in the Lower American River.

- *Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels).*

Yes, this Project will improve PCWA's ability to control flow through the canal, resulting in water being held for longer durations of time. Through implementation of automation water usage will not only be able to be quantified, spills reduced, but the level of water will be maintained to a higher degree to ensure efficient deliveries to commercial, private and agricultural customers.

- *Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?*

As described above, the proposed Project will help to ensure that more water can remain instream instead of being pumped and lost due to raw water conveyance system and customer inefficiencies. This will benefit the fall-run Chinook salmon (a federal species of concern) and steelhead (federally listed as a threatened species under ESA) within the Lower American River by allowing more water to remain instream and provide additional cold-water storage and cooler water temperatures in the Lower American River. This will also indirectly support healthy aquatic habitat conditions, which can support multiple species throughout the ecosystem.

- *Please describe any other ecosystem benefits as a direct result of the project.*

The PCWA's service area supports a wide variety of habitats and vegetation communities, as the area encompasses a broad spectrum of environmental conditions, such as elevation, slope, aspect, soils, and precipitation. The proposed Project is designed to improve infrastructure and conserve water resulting in direct benefits to instream flow availability, especially during drought conditions when water is scarce. This will directly benefit aquatic habitats.

Climate Change: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.

- *Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?*

This Project will address several climate change-related impacts that the region faces: increasing resilience to drought, improving system resilience in times of high flow, and ensuring adequate water supplies. According to report from the Center for Climate and Energy Solutions, *Resilience Strategies for Drought,* "communities can act to be more resilient to drought by employing strategies to conserve water in homes, agricultural or industrial processes, access new water sources, and manage drought on a watershed level." This Project will advance nearly all these

actions in PCWA's service area. Although it will not access new water sources, it will assist PCWA in using the current water supply as efficiently as possible, helping to avoid development of new water sources in the future, which benefits ecosystems and avoids future costs.
Although the connection to drought resiliency for this Project is clear, it will also provide benefits during periods of high flows. The most recent winters have brought extreme precipitation to PCWA's service area, which can degrade earthen canals more quickly. By lining and stabilizing the stretch of the Boardman canal, this Project will increase its longevity and provide more reliable service to the Foothill WTP.

- *Does the project seek to improve ecological resiliency to climate change?*

An increase in water use efficiency within PCWA's system will result in a decreased need to pump water from the American River. Increasing the amount of water available for instream flows improves the ecological resiliency of the riparian system.

- *Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?*

The automation of canal gates proposed in this Project will negate the need for PCWA staff to travel to various sites for canal management. The elimination of routine vehicle travel will reduce the overall carbon emissions associated with manual operations of gate, thereby reducing air pollution. Reducing the amount of water used indoors for residential and commercial customers will also save water and energy. Approximately 18 tons of pollution are anticipated to be saved for the water efficiency rebate component of this Project.

- *Does the proposed project include green or sustainable infrastructure to improve community climate resilience?*

Yes, implementing high-efficiency plumbing fixtures, such as high-efficiency toilets, is an important part of sustainable infrastructure expansion. This Project will increase the use of high-efficiency fixtures throughout PCWA's service area.

- *Does the proposed project contribute to climate change resiliency in other ways not described above?*

In addition to the climate change resiliency elements described above, this Project will allow PCWA to emphasize the importance of water conservation with their customers. Climate change is often an overwhelming topic that many people feel powerless to do anything about. Communications regarding water conservation efforts and support for installation of high-efficiency fixtures can provide opportunities to highlight the pressures of climate change on our water supply while also enabling individuals to support resiliency through achievable actions they can undertake at home.

Evaluation Criteria D – Disadvantaged Communities, Insular Areas, and Tribal benefits (15 points)

Subcriterion D.1. Disadvantaged Communities

E.O. 14008 affirms the advancement of environmental justice for all through the development and funding of programs to invest in disadvantaged communities.

- ***Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), to identify any disadvantaged communities that will benefit from your project.***

There are several communities that are considered disadvantaged under the CEJST tool that could benefit from this Project.

1. DCT #06061021403 in Lincoln.
2. DCT #06061021603 in North Auburn.
3. DCT #06061021304 near Wheatland (partially disadvantaged).
4. DCT #06061023200 near Lincoln (partially disadvantaged).

Figure 15 provides a map of these identified communities within PCWA service area.

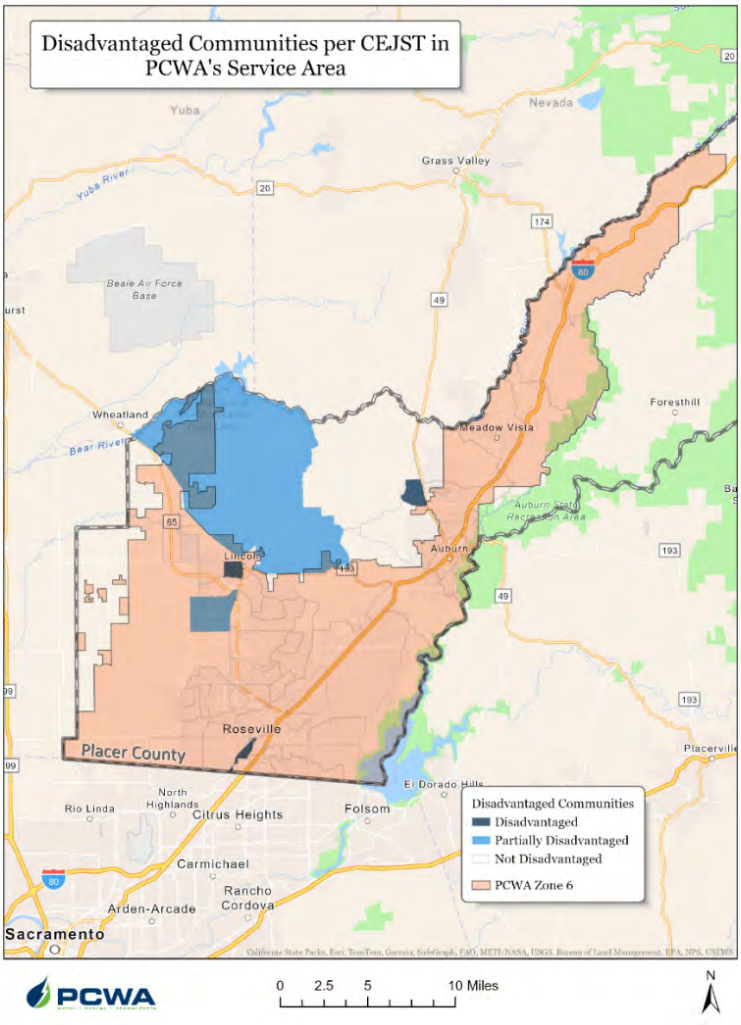

Figure 15. *Disadvantaged Communities per CEJST in PCWA's service Area.*

- *If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?*

Water conserved through the canal improvement component would become available for use without the need to develop new sources of water supply for these communities. The cost of developing new water supply sources in these areas—where groundwater supply is insufficient or not available and surface waters have been mostly developed within the last 150 years—would be tremendous.

The water efficiency rebate component of the proposed Project will benefit the disadvantaged communities in and near Lincoln, Auburn, and Wheatland. Additionally, the outreach program to install highly efficient toilets will be specifically focused within DACs. The 2023 Toilet Saturation Study performed by RWA used the Department of Water Resources DAC mapping tool and has identified three Census Tracts within PCWA's service area that are disadvantaged or severely disadvantaged and need 75% of their toilets replaced. Figure 16 displays the estimated share of toilets in each Census Tract that are inefficient, when a 0.75 is displayed, it can be interpreted as an estimate that 75% of the toilets in this Census Tract are inefficient toilet fixtures.

Lastly, completing needed upgrades to water supply conveyance systems and fixtures within homes will contribute to water affordability. Support from Reclamation for the proposed Project will allow PCWA to improve its facilities and customer support without having to overburden communities with the related costs of water loss and system repair.

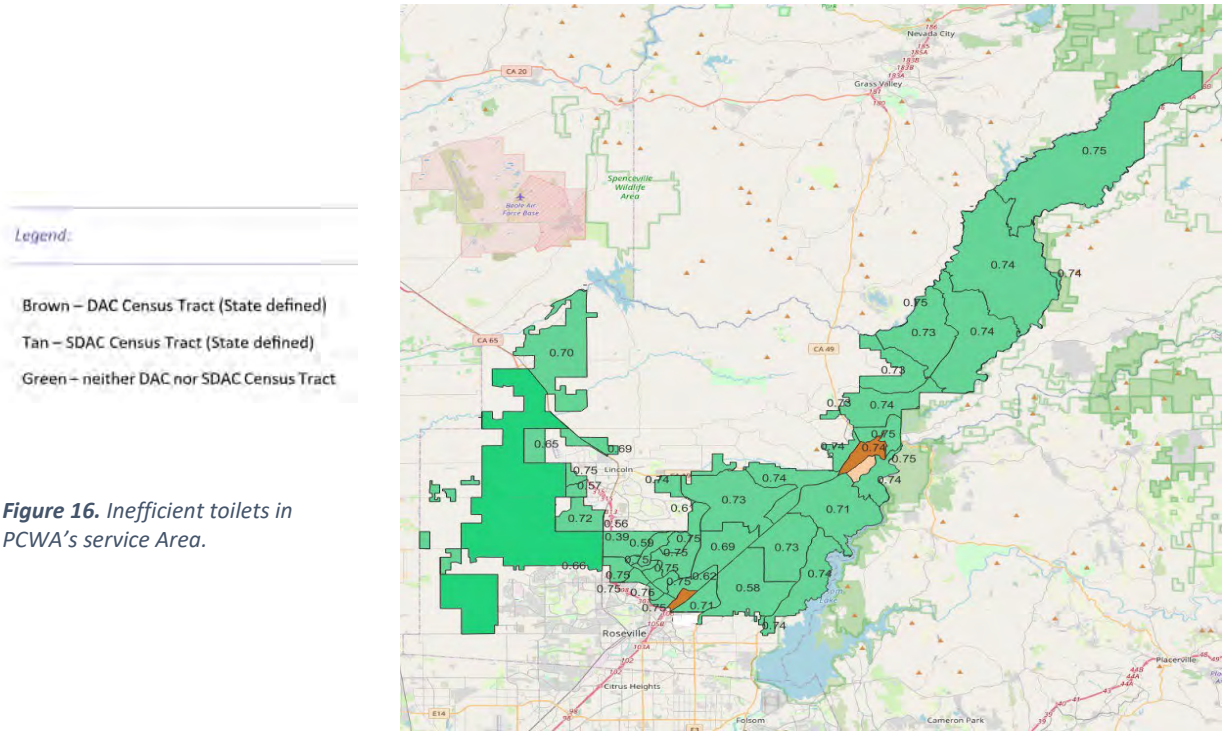

Figure 16. *Inefficient toilets in PCWA's service Area.*

Subcriterion D.2. Tribal Benefits
(3) Tribal Benefits: The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum "Tribal Consultation and Strengthening Nation-to-Nation Relationships" asserts the importance of honoring the Federal government's commitments to Tribal Nations. Please address the following, if applicable:

- *Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?*

The water efficiency rebate component of this proposed Project will benefit PCWA's entire service area, including the United Auburn Indian Community. United Auburn is a PCWA customer at two locations, Thunder Valley Casino near Lincoln and off Indian Hill Road in Auburn.

- *Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?*

No.

- *Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, increased renewable energy, or economic growth opportunities?*

Water conserved with this the canal improvement component would become available for use without the need to develop new sources of water supply to support water reliability and security for the United Auburn Indian Community.

- *Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?*

No.

Evaluation Criteria E – Completing On-Farm Irrigation Improvements (8 points)

If the proposed project will complement an on-farm improvement eligible for NRCS assistance, please address the following:
Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies. **– Section not applicable to this Project.**

- *Provide a detailed description of the on-farm efficiency improvements.*

This proposed Project does not have any complementing on-farm irrigation improvements.

- *Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?*

- *If available, provide documentation that the on-farm projects are eligible for NRCS assistance, that such assistance has or will be requested, and the number or percentage of farms that plan to participate in available NRCS programs.*
- *Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*

N/A

Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.

- *Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how? For example, installing a pressurized pipe through WaterSMART can help support efficient on-farm irrigation practices, such as drip-irrigation.*

N/A

OR

- *Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?*

N/A

Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.

- *Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.*

N/A

Please provide a map of your water service area boundaries. If your project is selected for funding under this NOFO, this information will help NRCS identify the irrigated lands that may be approved for NRCS funding and technical assistance to complement funded WaterSMART projects.

N/A

Evaluation Criteria F – Readiness to Proceed (8 points)

Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- *Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description provided in Section D.2.2.2. Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.*

Once funding for the canal automation component of this Project is awarded and a Notice-to-Proceed (NTP) is issued by Reclamation, PCWA Field Services crews will begin ordering the FlumeGates and materials. Once PCWA receives notification of the delivery date of the Rubicon FlumeGates, a firm schedule for installation will be finalized and canal outages scheduled. Scheduling will be arranged in such a manner that several Rubicon FlumeGates can be commissioned each day. Most of the work is expected to occur between April 1, 2025, and June 30, 2025. It is expected to take two days to install each FlumeGate; one day to prepare the canal, and one day to install and commission the FlumeGate.

For the Boardman canal lining component of this Project, it is anticipated that canal cleaning, preparation, and Gunite application will take approximately 5 weeks of a 5-man crew. Work will be scheduled for January 2025 through April 2025. PCWA Field Services crews have the Gunite reinforcement wire in stock and do not need to rent any additional equipment for this work. An existing on-call contract will supply the Gunite contractor and will be scheduled once funds have been awarded and a NTP has been issued by Reclamation.

This Project is considered maintenance on existing facilities within PCWA's raw water conveyance system. Construction and any ground disturbing activities will be performed within a small radius of the existing canal. Ground disturbing activities will be minimal, no permits are expected to be required. Prior to any work, the PCWA Environmental Scientist will revisit each work site(s). All work will be required to comply with PCWA's Natural Resources Management Plan for Raw Water Distribution O&M Activities dated April 2009 and implement any best management practices to avoid or minimize any impacts to the canal system in compliance with the California Environmental Quality Act.

The water efficiency rebates will be available from January 1, 2025, through December 31, 2026. All PCWA's water efficiency rebates are available to all customers within its service area and can be accessed and processed online through PCWA's website.

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

No environmental regulatory permits are anticipated to be required to complete this Project. It is expected that all work will be conducted within PCWA's existing canal easements.

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

Each automated FlumeGate installation is unique, requiring some modification to the canal. PCWA Field Services crews are familiar with the construction and installation of the Rubicon FlumeGates from past installations. Engineering designs are not required to be performed for the FlumeGate installations.

Further, engineering designs are not required for the canal lining component of this Project. PCWA Field Services crews are familiar with the construction and perform it on an annual basis in other areas of the canal.

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

No new policies or administrative actions will be required to implement and complete this Project.

- *Describe the current design status of the project. If additional design work is required prior to construction, describe the planned process and timeline for completing the design work.*

There is no design work associated with this Project.

- *Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation Regional or Area Office?*

Figure 17 provides a schedule of proposed Project's major tasks and milestones. The expected timeline for the environmental and cultural compliance has not yet been discussed with the local Reclamation offices.

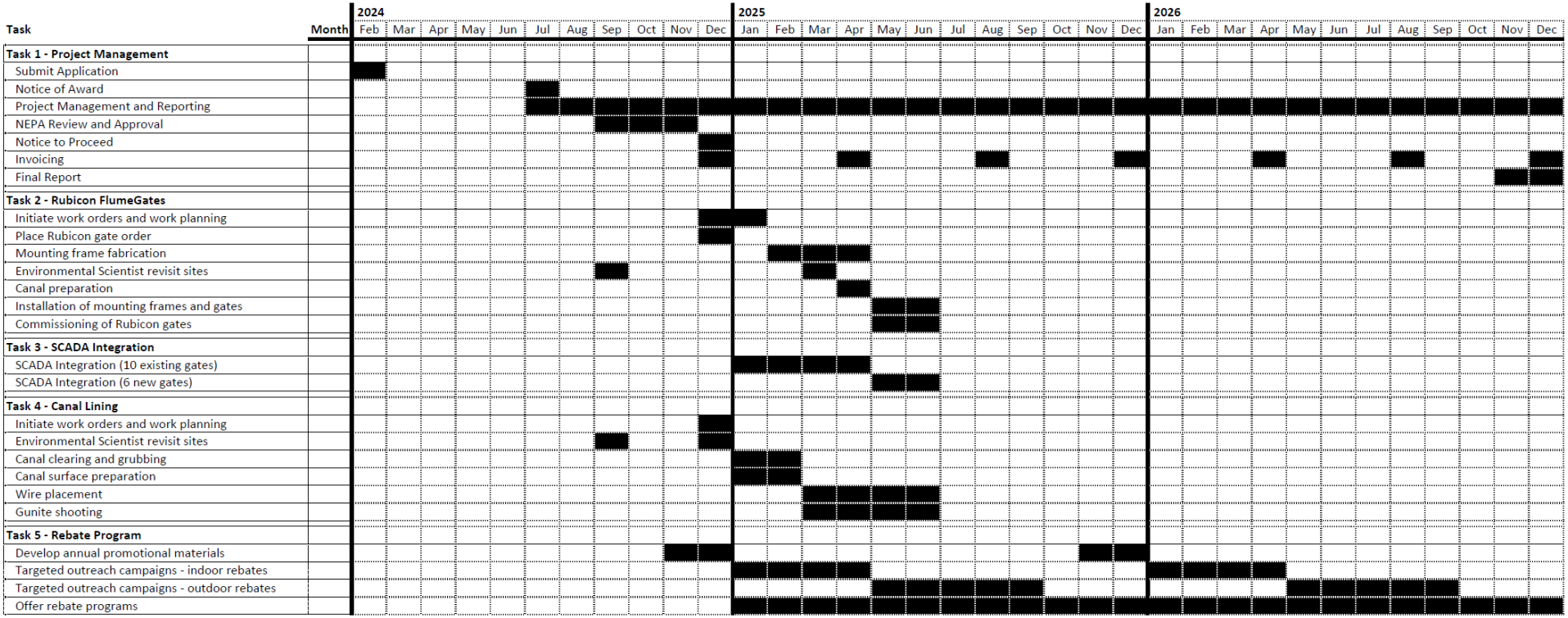

Figure 17. *Proposed Project Schedule*

Evaluation Criteria G – Collaboration (5 points)

Please describe how the project promotes and encourages collaboration. Consider the following:

- *Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?*

PCWA continually collaborates with PG&E, Placer County, and PCWA customers with regards to the operation and maintenance of PCWA's canal system. Decreases in water losses and increased efficiency of water management and deliveries, specifically the intentional release of water in a controlled manner during heavy precipitation events that are expected due to climate change, is essential to operating a raw water conveyance system. This is especially true for those spill channels that cross public and private roads or railroad tracks.

For the Boardman canal lining component, the property owner had previously been adamantly against vegetation removal and lining of this canal section over the past decade. However, now that the vegetation overgrowth is causing blockage within the canal and possibly leading to future overflow issues, the property owner has agreed to cooperate and is supportive of the project. Additionally, PCWA Field Services crews have helped to educate the property owner that regular maintenance of canal section and the lining would be a benefit to all parties. They now recognize the need to prevent losses and to eliminate additional vegetation growth, sediment accumulation, erosion, and other O&M issues within the canal. This type of continued education and open communication is common for PCWA Field Services crews to help property owners understand the operation of the canal and how to achieve a mutually beneficial outcome.

RWA is a significant advocate and supporter of PCWA's efficient management and conservation programs because they will help ensure regional supplies continue to meet future needs, which is part of RWA's primary mission. RWA is a joint powers authority representing 22 public and private water suppliers serving over 2.2 million residents in Sacramento, Placer, El Dorado, Nevada, Yolo, and Sutter Counties. RWA leads water conservation efforts, research, development of best-management practices and integrated water management funding programs within the region. PCWA water efficiency team works hand-in-hand with RWA's Water Efficiency Program to provide educational opportunities to the community, promote water use efficiency techniques, conduct research, host communities' events and demonstrations, and actively participate in California Department of Water Resources workgroups on implementing Making Conservation a California Way of Life through Assembly Bill 1668 and Senate Bill 606 legislation (see Figure 18). Finally, PCWA is participating in a toilet direct-install pilot program provided by RWA that would be complementary to this Project and funds provided by Reclamation. The direct-install pilot program is not part of this WaterSMART Grant Application funding request.

- *What is the significance of the collaboration/support?*

Increases in water management efficiencies result in fewer customer calls about a lack of water in the canal due to insufficient inflows. Implementation of the Rubicon SCADA system will allow the canal operators to know where and how much water is in the canal system at any time, providing customers and PCWA treatment plants with better estimates of when water flows will be restored after maintenance outages or other flow interruptions. Having better estimates and more real-time controls allow faster and more efficient communication, to PCWA customers, PG&E suppliers, and affected parties like Placer County's Road Department and Office of Emergency Services during weather emergency situations.

RWA's collaboration in the water efficiency rebate component of this Project is significant because the studies they have conducted are helping PCWA directly understand where and what are the biggest opportunities for water savings in their service area. Specifically, their 2023 Regional Toilet Saturation Study, which identified approximately 70,000 toilets that need to be upgraded to high-efficiency toilets within PCWA's service area. RWA will actively help promote PCWA water efficiency rebate program, spread the information through their social media channels and membership, and assist in further educating the region on the needs and benefits of water conservation.

Figure 18. *PCWA and RWA Water Efficiency Staff participate in supplier continuing education together at Nimbus Fish Hatchery*

- *Will this project increase the possibility/likelihood of future water conservation improvements by other water users?*

PCWA is always open to discuss water loss reduction efforts with other water purveyors, and to visit their locations to see how elements of their efforts may integrate into the PCWA water system to further reduce water loss or increase operational efficiencies. For example, a nearby water authority recently visited PCWA to discuss the operation of Rubicon FlumeGates previously installed, to determine if they would be appropriate for installation into their system. Rubicon Water representatives were also on site to answer any technical questions about how the FlumeGate software adapts to changing water levels and flows.

In addition, PCWA has been considering doing a larger-scale grant funded canal lining project in partnership with their neighboring water purveyor, Nevada Irrigation District (NID). The canal lining component of this Project will allow PCWA to test the viability of a larger future endeavor for lining more canals. NID has very similar unlined canals and struggles to find available financial resources to complete lining at a more substantial pace.

Finally, with this Project's increased attention on toilet replacements (especially in disadvantaged communities), PCWA may be able to reach end users that don't know understand how many gallons can be saved from replacing 1 toilet (nearly 13,000 gallons of water savings per year). PCWA collaborates with local school districts to offer fun and interactive educational programs to 3rd and 5th grade students about the impact of water efficient toilets, see Figure 19.

Figure 19. *PCWA collaborates with local school districts to offer fun and interactive educational programs to 3rd and 5th grade students about the impact of water efficient toilets.*

- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

Water conserved with this Project may be available for use or to meet demands without developing new water sources, benefiting all PCWA customers. Water remaining in storage for longer periods of time allows for additional recreation, where permitted, on the PG&E storage reservoirs and instream flows that many people recreate on during the summer months. Conserved water may also be used to generate additional hydroelectric power.

- *Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).*

A letter of support from RWA is included in Appendix D.

Evaluation Criteria H – Nexus to Reclamation (4 points)

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider:

- *Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?*

Yes, PCWA has a water supply contract with Reclamation for Central Valley Project (CVP) supply of 35,000 AF per year through Reclamation's Appropriative Permit 011317. PCWA does not currently utilize this contract but has been planning to for the buildout condition for Placer County through a regional water supply project called RiverArc.

Additionally, PCWA actively participates with Reclamation and the Region Area office in the Sacramento Water Forum Agreement and their water Flow Management Standard (FMS) operations workgroup. The Water Forum Agreement (which PCWA and RWA are a part of) is a voluntary agreement between 40 agencies, organization, and businesses that balances regional water supplies and environmental resources to help preserve the Lower American River. The FMS workgroup uses the best available science to set targets for minimum river flows and cold-water storage at Folsom Reservoir (a Reclamation reservoir part of the CVP), to help preserve water storage in Folsom Reservoir to guard against drought and improve water temperature in the Lower American River for salmon and steelhead. PCWA is an integral participant in the FMS workgroup because they supply water to Folsom Reservoir through their Middle Fork Project permits 13856 and 13858 and can help contribute to flows and cold-water that ultimately flows into Folsom Reservoir.

- *If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?*

PCWA is a Reclamation contractor but does not currently use the water supply. PCWA has other water supplies through their Middle Fork Project permits 13856 and 13858, PG&E Drum/ Spaulding Hydroelectric Project, and four other pre-1914 Appropriative water rights.

PCWA delivers water through their Middle Fork Project permits 13856 and 13858 and PG&E Drum/Spaulding Hydroelectric Project Agreements, to three water purveyors and one homeowner's association out of Folsom Reservoir. From time to time, PCWA sells this water to other purveyors downstream of Folsom Reservoir. Each water purveyor and purchaser of PCWA's water from Folsom Reservoir does so through a Warren Act agreement.

- *Will the proposed work benefit a Reclamation project area or activity?*

During the operation of PG&E Drum/Spaulding Hydroelectric Project, water stored in the upper PG&E reservoirs can flow into Folsom Reservoir through PCWA's raw water conveyance system and tributary creeks and streams. There is a potential that all or a portion of the water conserved through the canal improvements components of this Program could enter Folsom Reservoir and could potentially becoming available to go through Reclamation's hydropower facility at Folsom.

The fate of the conserved water is dependent on PCWA demands and how PG&E operates their Hydroelectric Project.

The water conserved through the water efficiency rebate component of this Project could potentially allow PCWA to decrease diversion through its American River Pump Station which would allow more water to flow to Folsom Reservoir for discretion uses. This may be particularly helpful during dry and critically dry years when Reclamation is challenged to balance the demands on Folsom Reservoir and supplies are limited.

- *Is the applicant a Tribe?*

No, PCWA is not a Tribe.

Performance Measures

Performance measures for all three components of the proposed Project are presented below.

Canal gate automation and SCADA improvements - Performance Measure 1: Measurement of reduced spill flows.

Pre-project quantification of benefits will be completed through the evaluation of historical spill records collected via canal operator hard copy entries. Canal ends within the Project scope do not currently have SCADA and are therefore unable to produce data for comparison.

After the Rubicon FlumeGates are installed and integrated into the SCADA system, flows into the canal, and amounts of water spilled, will be compared to historical canal operator hard copy entries and/or existing monthly spill totals. Monthly post-project water balance values will also be compared to pre-project mass balances during the months without precipitation events to evaluate if a mass balance comparison can be used to evaluate the performance of the Rubicon FlumeGates, generally between June and October annually.

All PCWA's treated water infrastructure is on SCADA, so there are dedicated staff for operating and maintaining the SCADA system. The PCWA's SCADA team has been expanding to support the raw water infrastructure and will include supporting this Project.

Canal lining – Performance Measure 1: Measurement of upstream and downstream flows

The current annual seepage lost for this section of the Boardman canal was estimated using methodologies established by PCWA's 2005 Canal Lining Feasibility Study and the following equation: seepage loss (acre-feet/yr) = [seepage rate K (ft3/ft2-day) * wetted area A(ft2) * time T(days)] / 43,560(ft3/ac-ft). A full explanation of the calculation and estimated water savings is provided on page 21.

PCWA Field Services crews will take flow measurement before and after construction of this Project. PCWA staff will take historical inflow and outflow measurements at upstream and downstream points and compare those against new measurements to verify the amount of

reduced seepage loss. Inflow/outflow testing will be conducted using an acoustic Doppler water velocity measurement device.

Water Efficiency Rebates – Performance Measure 1: Measurement of upstream and downstream flows

There are many other factors that influence customer behaviors and their associated water usage such as the media attention on droughts and conservation, unexpected leaks in their private property pipelines, and additions/expansions of residents within the home; it can be hard to isolate the effects of the rebate if they are installed at the same time. The best way for PCWA to see how much less water the customer is using due to the installed rebate is to compare their average annual water use (for multiple years) prior to the rebate installation with their water usage after the installation. PCWA conducts this analysis on an annual basis for all the customers and water meters that participate in the rebate program before and after the date of installation of the specific rebate issued. PCWA then determines the total amount of reduction in water consumption for that year. This helps PCWA learn where improvements can be made and adjusts the rebate program on an annual basis.

For this Project, the number of customers provided with water conservation education materials, the number of rebates issued of each rebate type, and number of high-efficiency fixtures/devices installed will be tracked and water savings calculated using industry accepted methodologies such as those provided by RWA and the EPA. Appendix A provides the calculations and expected water savings for each of the rebate programs. PCWA will compare these estimates with reduced consumption usages for each of the rebate programs as a proxy for actual water savings.

PCWA has recently become a participant in the Alliance for Water Efficiency tracking program that can provide an integrated water management planning tool that can help track water savings. PCWA intends to use this tool to help better track and understand actual water savings in 2025.

Project Budget

The Project Budget section is compromised of the funding plan, letters of commitment, the Project budget proposal, and a budget narrative.

Funding Plan and Letters of Commitment

Please identify the sources of the non-Federal cost-share contribution for the project, including:

- ***Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments).***

PCWA cost-share requirement will be 55% or $572,268.99 for this Project and will be from the annual Water Division Capital and Operations budgets, and/or reserves. There are no identified constraints to the funding for this Project. Table 2 provides a summary of the Project funding plan.

Table 2. Project Funding Plan

Funding Sources	Funding Amount
Non-Federal Share (Placer County Water Agency)	$572,268.99
Other Federal Share (None)	$0.00
Requested Federal (Reclamation) Share	$468,220.09
Total Project Funding	**$1,040,489.08**

- ***Any costs that will be contributed by the applicant.***
  - ❖ Staff labor and equipment used to complete Project.
  - ❖ Materials required to prepare and promote rebate programs.
  - ❖ Materials required to construct the automated FlumeGate mounting frames.
  - ❖ Equipment/materials needed to remove existing manual FlumeGateheadgate and prepare the canal to receive the automated FlumeGates.
  - ❖ Equipment/materials needed to install FlumeGates.
  - ❖ Equipment/materials needed to prepare the canal to receive Gunite lining.
  - ❖ Any “shot in place” Gunite needed for a complete project.
  - ❖ Other expenses as they occur.

- ***Any third-party in-kind costs (i.e., goods and services provided by a third party).***

None.

- ***Any cash requested or received from other non-Federal entities.***

None.

- ***Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied.***

None.

- *Letter of Funding Commitment.*

See Attachment Appendix F.

Budget Proposal

Table 3 provides a summary of the costs for the different components of the Project. The following tables, Table 4 – 6, provide detailed estimates for each of the components.

Table 3 – Project Budget Summary by Component

Component	Direct Costs	Indirect Costs Default de minimis (10%)	Total
Canal Automation and SCADA	$ 403,362.71	$ 40,336.27	$ 443,698.98
Canal Lining	$ 211,536.45	$ 21,153.65	$ 232,690.10
Water Efficiency Rebate Programs	$ 331,000.00	$ 33,100.00	$ 364,100.00
Total:	**$ 945,899.16**	**$ 94,589.92**	**$ 1,040,489.08**

Table 4 – Canal Automation and SCADA Component Budget

Placer County Water Agency: 2024 Canal and Rebates Water Savings Program
NOFO: R24AS00052

Budget Item Description	Computation $/unit	Computation Quantity	Quantity Type	TOTAL COST
Canal Automation and SCADA				
Administration				
Salaries and Wages				
Project Manager - Capital Improvement Program Specialist	$ 40.33	150	Hour	$ 6,048.90
Estimated Fringe Benefits (PCWA Labor)				
(Actual costs to be reported when occurred)	38%			$ 2,298.58
Environmental				
USBR NEPA Review	$ 40,000	1	Each	$ 40,000.00
(Holdback amount for Reclamation Environmental review)				
Salaries and Wages				
PCWA Environmental Scientist	$ 60.89	20	Hour	$ 1,217.84
Estimated Fringe Benefits (PCWA Labor)				
(Actual costs to be reported when occurred)	38%			$ 462.78
Construction				
Salaries and Wages				
PCWA Service Worker	$ 39.36	200	Hour	$ 7,872.40
PCWA Service Worker	$ 39.36	200	Hour	$ 7,872.40
PCWA Maintenance Worker 2	$ 34.83	200	Hour	$ 6,966.60
PCWA Maintenance Worker 2	$ 34.83	200	Hour	$ 6,966.60
PCWA Real Property Manager	$ 63.93	30	Hour	$ 1,918.02
Estimated Fringe Benefits (PCWA Labor)				
(Actual costs to be reported when occurred)	38%			$ 12,006.49
Total PCWA Labor				
Salaries and Wages				$ 38,862.76
Estimated Fringe Benefits				$ 14,767.85
Total				$ 53,630.61
Equipment - 2020 USAC Region 7 Rates				
1 1/2 Ton Cab Chasis 4x4 16,500 GVRW	$ 38.38	200	Hour	$ 7,676.00
1 1/2 Ton Cab Chasis 4x4	$ 38.38	200	Hour	$ 7,676.00
Excavator - Deere 35D	$ 22.37	80	Hour	$ 1,789.60
Backhoe - Deere 410L	$ 60.53	60	Hour	$ 3,631.80
Dump Truck - 5 Yard Capacity	$ 46.23	80	Hour	$ 3,698.40
Construction Materials				
60# Sack Concrete	$ 5.49	250	Each	$ 1,372.50
S4S Lumber (2x12" x 12')	$ 4.70	250	Each	$ 1,175.00
1/4" Angle Aluminum (4" x 4" x 12')	$ 118.12	15	Each	$ 1,771.80
1/4" Channel Aluminum (1 1/2" 6" x 12')	$ 500.00	15	Each	$ 7,500.00
1/4" Plate Aluminum (1/4" x 24" x 60")	$ 239.50	4	Each	$ 958.00
Gunite	$ 495.21	100	Yards	$ 49,521.00
6" x 6" Reinforcing Wire	$ 1.85	800	Feet	$ 1,480.00
Rubicon Flume Gate 48 inch opening	$ 22,620.00	1	Each	$ 22,620.00
Rubicon Flume Gate 60 Inch opening	$ 28,530.00	1	Each	$ 28,530.00
Rubicon Flume Gate 48 Inch opening	$ 27,615.00	1	Each	$ 27,615.00
Rubicon Flume Gate 48 Inch opening	$ 34,120.00	1	Each	$ 34,120.00
Rubicon Flume Gate 52 Inch opening	$ 28,230.00	1	Each	$ 28,230.00
Rubicon Flume Gate 48 Inch opening	$ 28,895.00	1	Each	$ 28,895.00
Remote Mast	$ 1,000.00	6	Each	$ 6,000.00
Lithium Battery	$ 512.00	6	Each	$ 3,072.00
Level Tuning (For FlumeGates)	$ 1,500.00	6	Each	$ 9,000.00
SiteConnect Live (SCADA)	$ 1,000.00	16	Each	$ 16,000.00
SiteConnect Live Subscription (Annual)	$ 450.00	16	Each	$ 7,200.00
Rubicon Gate Commission	$ 1,700.00	6	Each	$ 10,200.00
TOTAL CANAL AUTOMATION DIRECT COSTS				$ 403,362.71
Indirect Costs				
Default de minimis rate of 10%	10%			$ 40,336.27
TOTAL CANAL AUTOMATION ESTIMATED COSTS				$ 443,698.98

A specific quote for the Rubicon FlumeGates, dated January 29, 2024, is provided in Appendix B.

Table 5 – Canal Lining Component Budget

Placer County Water Agency: 2024 Canal and Rebates Water Savings Program
NOFO: R24AS00052

Budget Item Description	Computation		Quantity Type	TOTAL COST
	$/unit	Quantity		
Canal Lining				
Construction				
Salaries and Wages				
PCWA Service Worker	$ 39.36	200	Hour	$ 7,872.40
PCWA Service Worker	$ 39.36	200	Hour	$ 7,872.40
PCWA Maintenance Worker 2	$ 34.83	200	Hour	$ 6,966.60
PCWA Maintenance Worker 2	$ 34.83	200	Hour	$ 6,966.60
PCWA Maintenance Worker 2	$ 34.83	200	Hour	$ 6,966.60
Estimated Fringe Benefits (PCWA Labor)				
(Actual costs to be reported when occurred)	38%			$ 13,924.95
Total PCWA Labor				
Salaries and Wages				$ 36,644.60
Estimated Fringe Benefits				$ 13,924.95
Total				$ 50,569.55
Equipment - 2020 USAC Region 7 Rates				
1 1/2 Ton Cab Chasis 4x4 16,500 GVRW	$ 38.38	200	Hour	$ 7,676.00
1 1/2 Ton Cab Chasis 4x4	$ 38.38	200	Hour	$ 7,676.00
Excavator - Deere 35D	$ 22.37	200	Hour	$ 4,474.00
Excavator - Deere 35D	$ 22.37	200	Hour	$ 4,474.00
Dump Truck - 5 Yard Capacity	$ 46.23	200	Hour	$ 9,246.00
Track Dump Truck - 5 Yard Capacity	$ 46.23	200	Hour	$ 9,246.00
Brush Chipper - 15" Capacity	$ 43.60	100	Hour	$ 4,360.00
Construction Materials				
450 tons of rock	$ 34.00	450	Tons	$ 15,300.00
Gunite	$ 495.21	190	Yards	$ 94,089.90
Gunite 10-gauge wire (7'x200')	$ 442.50	10	Rolls	$ 4,425.00
	TOTAL CANAL LINING DIRECT COSTS			$ 211,536.45
Indirect Costs				
Default de minimis rate of 10%	10%			$ 21,153.65
	TOTAL CANAL LINING ESTIMATED COSTS			$ 232,690.10

Table 6 – Water Efficiency Rebate Component Budget

Placer County Water Agency: 2024 Canal and Rebates Water Savings Program
NOFO: R24AS00052

Budget Item Description	Computation		Quantity Type	TOTAL COST
	$/unit	Quantity		
Water Efficiency Rebate Programs				
Outdoor Landscape Efficiency Rebate and Promotion Program	$231,700.00	1	Each	$ 231,700.00
Indoor Efficiency Rebate and Promotion Program	$ 99,300.00	1	Each	$ 99,300.00
			TOTAL DIRECT COSTS	$ 331,000.00
Indirect Costs				
Default de minimis rate of 10%		10%		$ 33,100.00
			TOTAL WATER EFFICIENCY ESTIMATED COSTS	$ 364,100.00

Budget Narrative

Salaries and Wages

All PCWA employees that perform any work directly related to this Project will be accounted for as a reimbursable expense. For the development of the budget, the highest hourly wage for each position expected to work on this Project was used to calculate the total projected labor costs. Actual amounts paid to each employee, including fringe benefits, will be reported in reimbursement requests.

Fringe Benefits

PCWA employees are paid a salary or hourly wage commensurate with their current job title and wage step. PCWA employees are also provided with fringe benefits. The amount of fringe benefit paid to each employee varies from pay period to pay period due to how the benefits are calculated each pay period.

A 2020 study performed by the PCWA Financial Services Department estimated fridge benefits paid to PCWA employees, including management, is an additional 38% of actual wages earned. Fringe benefits expected to be paid to PCWA employees are listed as a separate line item in the budget.

Travel

No travel expenses are expected, nor will any travel expenses be included or authorized in conjunction with this Project.

Equipment

No new motorized equipment will be purchased for this Project. This Project is expected to only use motorized equipment within the current PCWA fleet and ownership. If required to complete

the Project, motorized equipment may be rented from an approved PCWA vendor at the rates provided by the vendor, without any markups by PCWA.

Any PCWA owned equipment used to complete this Project will be accounted for at the 2020 USACE Region 7 Hourly Equipment Ownership and Operating Expense rates. Where the exact equipment expected to be used did not appear on the USACE Hourly Equipment Ownership and Operating Expense, the USACE equipment that approximately matched the PCWA owned equipment, was used.

Materials and Supplies

Materials required to complete the canal efficiency improvements component of this Project include, but are not limited to: Rubicon FlumeGates (various sizes); lengths of aluminum angle, strap and channel metal for frame construction; sack concrete and reinforcing wire for pad construction for the Rubicon gate pedestal and communication cabinet; solar panels, batteries, Gunite to reshape canal for Rubicon gate installation or to increase height of upstream berm; rough cut redwood to create forms to construct concrete pads and other features; Gunite "shot-in-place" lining; 10-gauge wire reinforcement, electrical conduit, various fasteners, sealants and other miscellaneous items. Where possible, supplies within the PCWA warehouse will be used, with the costs based upon the variable average weighted cost of each item used.

Materials required to the water efficiency component of this Project include promotional materials such as flyers, mailers, door tags, PowerPoint presentations, and other materials of this nature to advertise and education PCWA customers about the rebate program.

Other Expenses

No expenses of this type are expected.

Indirect Costs

PCWA does not have a Federal negotiated indirect cost rate and will be using the default de minimis rate of 10% for any indirect costs, if incurred. Indirect costs include, but are not limited to incidental administrative salaries and fridge benefits, copying, USPS mail costs, etc.

Environmental and Regulatory Compliance Costs

Environmental and regulatory compliance costs are anticipated to be minimal due to the nature of the Project being to maintain and upgrade existing facilities. PCWA will call upon Reclamation to assist with all environmental and regulatory compliance requirements prior to any construction activities related to the canal efficiency improvements component of this Project. Estimated cost for Reclamation's assistance with regulatory compliance is included within the budget.

There are no environmental and regulatory compliance requirements for the water efficiency rebate component of this Project.

Contractual

PCWA will use an established “on call” contractor to apply Gunite to those areas directly related to the Rubicon gate installation and for the Boardman canal lining project component.
The commissioning of the Rubicon gates, the process needed to initialize and or “tune” each Rubicon gate to make it operational, will be performed by technicians from Rubicon Water, the manufacture, at a per FlumeGate flat rate cost.

Third-Party In-Kind Contributions

N/A

Environmental & Cultural Resource Compliance

Please answer the questions from Section H.1. Environmental and Cultural Resource Considerations in this section.

- *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 work locations for the installation of the Rubicon FlumeGates and canal lining are not expected to adversely impact the surrounding areas. FlumeGate installations may require the removal of existing Gunite, reshaping of the canal and placement of new Gunite. Earthwork will be minimal and limited to the canal and berms, in previously disturbed soils, typical of routine PCWA canal maintenance activities.

- *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?*

No known species or critical habitats are known to occur at or near any of the Project work areas. Each Project work area will be revisited by the PCWA Environmental Scientist prior to construction to ensure that no listed or endangered species or critical habitats may be present.

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

There are no wetlands or other surface waters within or potentially within the Project boundaries. Each of the Project work sites are directly on the canal, or canal berm.

- *When was the water delivery system constructed?*

The raw water conveyance system construction began in 1855 to provide water needed for gold mining. In 1910 PG&E purchased the reservoirs and canal system and began installing hydroelectric generators and delivering raw water to supply western Placer County agriculture. Gradually, the canals also delivered water to treatment plants for a growing urban population, changing alignment and construction materials to facilitate the construction of railroads, roads, highways and housing.

In 1967, PCWA formed Zone 1 by purchasing the lower treated and raw water system from PG&E, later purchasing the upper Zone 3 treated and raw water system. Today, there are 170 miles of raw water conveyance and over 600 miles of treated water distribution pipes.

- *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.*

This Project is replacing existing gates and check boards with automated gates. Each of the existing gates were installed, modified, or replaced within the last 30 years with gates that were purchased "off the shelf" as a stock offering from a gate manufacturer. Since the existing gates have been installed, no modifications have been made other than the normal replacement of worn parts and maintenance. The raw water conveyance system was originally constructed as an unlined system and has been lined or converted to pipe in specific areas over time. Currently, the raw water conveyance system is comprised of earthen canals (50.5 miles), lined canals (67.4 miles), pipe (44.6 miles – AC, Steel, Ductile Iron), and flumes (1.5 miles).

- *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.*

None are known to exist within the raw water distribution system. All features within the raw water distribution system have been continually maintained or replaced since before PCWA took ownership of the water system in 1967 and continues to be replaced and maintained as a function of maintenance, ongoing efforts to decrease water loss and increase operational efficiencies.

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

There are no known archeological sites in the proposed work areas. Construction activities are expected to be limited to a 30-foot radius of the existing headgate/spill and 30-foot offset of the canal alignment in previously disturbed soils.

- *Will the proposed project have a disproportionate and adverse effect on any communities with environmental justice concerns?*

No. This Project will not affect any populations of any sort. This Project strives to increase the efficiency of raw water deliveries to customers and potentially reduce irrecoverable water losses.

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

No, this Project will not restrict access.

- *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, there are no known noxious weeds or non-native species known to occur at or near any of the proposed work locations. PCWA Brush and Weed control division continually manages all weeds and vegetation along the canal berms and access routes to each of the Project gates to facilitate operation and maintenance of the canal system.

Required Permits and Approvals

Permits and approvals are not expected to be needed for this Project as all activities are within the canal, canal berm, and PCWA operated facilities with PCWA's canal easements. No work is expected to be performed within a State, County, or Railroad right-of-way, negating the need for encroachment permits. Work will be completed in previously disturbed areas, typical of routine PCWA canal maintenance activities.

Overlap or Duplication of Effort Statement

No overlap exists between the proposed Project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel.

PCWA has not applied for any other Federal or non-federal funding considerations for this proposed Project.

Conflict of Interest Disclosure Statement

There are no existing or potential conflicts of interest among Placer County Water Agency and its employees regarding this proposed Project.

Uniform Audit Reporting Statement

All U.S. states, local governments, federally recognized Indian Tribal governments, and nonprofit organizations expending $750,000 USD or more in Federal award funds in the applicant's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System. U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

Certification Regarding Lobbying

Applicants requesting more than $100,000 in Federal funding must certify to the statements in 43 CFR §18, Appendix A. If this application requests more than $100,000 in Federal funds, the authorized official's signature on the appropriate SF-424 form also represents the applicant's certification of the statements in 43 CFR § 18, Appendix A. https://www.ecfr.gov/current/title-43/subtitle-A/part-18#Appendix-A-to-Part-18. See Appendix C for PCWA's certification statement.

Disclosure of Lobbying Activities

Not applicable.

Letters of Support

Regional Water Authority Letter of Support, dated February 2, 2024, is included in Appendix D.

Letters of Partnership

Not applicable.

Official Resolution

PCWA Resolution 22-16 is provided in Appendix E.

Letters of Funding Commitment

PCWA Letter of Funding Commitment is provided in Appendix F.

Bibliography

California Natural Resources Agency (CNRA), California Environmental Protection Agency (CalEPA), and California Department of Food and Agriculture (CDFA). (2020). California Water Resilience Portfolio. Retrieved February 12, 2024, from https://waterresilience.ca.gov/wp-content/uploads/2020/07/Final_California-Water-Resilience-Portfolio-2020_ADA3_v2_ay11-opt.pdf

Cawdrey, K and Carlowicz, M. (2023). *Warming makes droughts, extreme wet events more frequent, intense.* NASA Jet Propulsion Laboratory California Institute of Technology. Retrieved February 12, 2024, from https://gracefo.jpl.nasa.gov/news/220/warming-makes-droughts-extreme-wet-events-more-frequent-intense/

Dauphin, L. and Carlowicz, M. (2021). *A Long View of Sierra Snow.* NASA Earth Observatory. Retrieved February 12, 2024, from https://earthobservatory.nasa.gov/images/148595/a-long-view-of-sierra-snow

National Oceanic and Atmospheric Administration (NOAA). (2024). *Research Spotlight: Climate-Driven Megadrought.* Retrieved February 13, 2024, from https://www.drought.gov/research-spotlight-climate-driven-megadrought#:~:text=Credit%3A%20Guenter%20Albers%2C%20nvelichko%2C,in%20at%20least%201%2C200%20years

Rodell, M and Bailing, L. (2023). *Changing intensity of hydroclimatic extreme events revealed by GRACE and GRACE-FO.* Nature Water. Retrieved February 12 2024, from https://www.nature.com/articles/s44221-023-00040-5.epdf?sharing_token=e9F5Sie2caj_xK3I98iJx9RgN0jAjWel9jnR3ZoTv0PgIO8qj4_9Dplvo9OtFAjxls5R1eUQbdMp8g1hckKImwWw3OwCmH7Phu01nlkQI_fSsElxTYewMbrxD-gwTOeEMenTXlLvcQnFhYfzTkacdkMj7c0dlXuLTVp9s46ua9Y%3D

Sierra Nevada Conservancy (SNC). (2024). *Water Supply.* Retrieved February 13, 2024, from https://sierranevada.ca.gov/what-we-do/water-supply/

Spengeman, S and Osenga, E. (2023). *Climate Whiplash is the new normal for Califonria, experts say. The state has recently swung from years of drought to piles of snow.* Yale Climate Connections. Retrieved February 13, 2024, from https://yaleclimateconnections.org/2023/06/climate-whiplash-is-the-new-normal-for-california-experts-say/

Yosemite Field Station. (2024). *Hydrology.* Retrieved February 13, 2024, from https://snrs.ucmerced.edu/natural-history/hydrology

RESOLUTION NO. 22-16 OF THE BOARD OF DIRECTORS
OF THE PLACER COUNTY WATER AGENCY
AUTHORIZING STAFF TO SUBMIT GRANT APPLICATIONS
TO THE BUREAU OF RECLAMATION

WHEREAS, the Placer County Water Agency (Agency) is committed to providing a safe and reliable water supply to the residents of Placer County; and

WHEREAS, the Agency desires to seek grant funding from the Bureau of Reclamation (Reclamation) that supports water and energy efficiency, a safe and reliable water supply, improves water quality, reduces greenhouse emissions, increases sustainability, reduces vulnerabilities, and mitigates against future hazards; and

WHEREAS, the Agency seeks to streamline the grant application process; and

WHEREAS, the Agency intends to work with Reclamation to meet established deadlines for entering into a grant funding agreement.

NOW BE IT RESOLVED that the Board of Directors of the Placer County Water Agency:

1. Authorize the General Manager or designee to sign and file, for and on behalf of the Agency, all grant applications to Reclamation.
2. Certify that the General Manager or designee is designated to provide assurances, certifications, and commitments required for grant applications and agreements.
3. Designate the General Manager or their designee, in the event the grant is awarded and approved, to represent the Agency in carrying out the Agency's responsibilities under grant agreements, including certifying disbursement requests on behalf of the Agency and compliance with state and federal laws.

The foregoing resolution was duly passed at a regular meeting of the Board of Directors of the Placer County Water Agency held on August 4, 2022, by the following vote on roll call:

AYES: Graham "Gray" Allen, Primo Santini, III, Robert Dugan, Joshua Alpine, and

Chair Michael "Mike" Lee

NOES: none

ABSTAINED: none

ABSENT: none

Signed and approved by me after its passage this 4th day of August 2022.

Michael R. Lee, Chair of the Board
Placer County Water Agency

ATTEST:

Lori Young, Clerk to the Board

PCWA
water • energy • stewardship

PLACER COUNTY WATER AGENCY
SINCE 1957

BOARD OF DIRECTORS
Gray Allen, District 1
Primo Santini, District 2
Mike Lee, District 3
Robert Dugan, District 4
Joshua Alpine, District 5

Andrew Fecko, General Manager

BUSINESS CENTER
144 Ferguson Road
MAIL
P.O. Box 6570
Auburn, CA 95604
PHONE
(530) 823-4850
(800) 464-0030
WWW.PCWA.NET

February 14, 2024

WaterSMART Grants
Water and Energy Efficiency Grants
Projects for Fiscal Year 2024

RE: Letter of Commitment for Funding Opportunity No. R24AS00052
2024 Canal and Rebates Water Savings Program

Placer County Water Agency is committed to providing the highest level of service to their rate payers, seeking to continually improve both the raw and treated water delivery efficiencies, while reducing unrecoverable water losses where feasible. This proposed project is an example of Placer County Water Agency ongoing dedication to improve operational efficiencies and reductions in unrecoverable water losses. Specifically, this includes improvements to the raw water conveyance system (gate automation, SCADA integration, canal lining) as well as changing customer behaviors and habitats through water conservation rebate programs and education.

Placer County Water Agency is committed to provide matching funds for this funding opportunity and any costs which exceed the proposed grant budget in the form of in-kind services (labor and indirect costs), equipment costs (PCWA equipment and rental), materials required for a complete project, and monetary contributions, as needed. Funds for this project will be from the annual Water Division Capital and Operating Budget and/or reserves. The Placer County Water Agency cost share is expected to be $572,269.

If additional information is required, do not hesitate to contact me.

PLACER COUNTY WATER AGENCY

Joseph Parker

Joseph Parker
Director of Financial Services
Jparker@pcwa.net
P 530-823-4875