

Meter and SCADA System Expansion Project

FY20 WaterSMART: Small-Scale Water Efficiency Projects

Reclamation District 787

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Executive Summary

Date: March 4, 2020

Applicant Name: Reclamation District 787

City, County, State: Yolo County, California

Project Summary

Reclamation District No. 787 (RD 787 or the District) is proposing to install three flow meters and Supervisory Control Data Acquisition (SCADA) at the Big Bertha and Canpile Pumping Stations. The implementation of this project will allow the District to monitor the amount of water being discharged back into the Sacramento River. The proposed out-flow meters and SCADA, combined with the existing meters and SCADA that control pumping levels, will allow the District to monitor net-water use. The ability to monitor and control net-water use will allow the District to fine tune its water management practices and lower electricity costs. The total project cost is an estimated \$125,179.88. The District will provide the required 50% match through General Funds totaling \$62,589.94.

Project Timeline

Assuming a project start date of April 1, 2020, the estimated project duration is 12 months and the anticipated completion is April 30, 2021.

Project Location on Federal Facility

The proposed meter and SCADA expansion project is not located on a federal facility.

Background Data

RD 787 was formed under the general reclamation district laws of 1908 for the purposes of providing drainage and reclamation of the lands within its boundary. Irrigation water is delivered to agricultural users (primarily rice) within the District through a system of canals and ditches that are supplied primarily by surface water diversions from the Sacramento River. The respective landowners within the District (River Garden Farms, Cooling, Faye and Geer) have riparian and appropriative water rights, as well as water rights settlement contracts with the United States Bureau of Reclamation. Although the District does not own or operate water supply wells, there are private well owners within the District, including River Garden Farms, who operate several irrigation wells. A Memorandum of Understanding exists between the District and River Garden Farms (Attachment 1).

The District covers approximately 8,950 acres, most of which is irrigated agricultural land. The District has 15 miles of canals and 79 turnouts. The majority landowner in the District is River Garden Farms, which covers approximately 7,400 acres (nearly 82% of the District). Water demands within RD 787 have historically averaged between 25,000 to 30,000-acre feet per year (afy) over the last 40 years and have been met mostly with surface water diversions from the Sacramento River.

RD 787 overlies the Sacramento Valley Groundwater Basin, Colusa Sub-basin. The Colusa Sub-basin is part of the larger Sacramento Valley Basin, which includes areas underlying the Sacramento Valley, the Sacramento River, and its tributaries as they flow south and west toward the Sacramento-San Joaquin Delta. The Colusa Sub-basin is bounded on the east by the Sacramento River, on the north by Stony Creek, on the west by the Coast Ranges, and on the south by Cache Creek. The Colusa Sub-basin is about 1,400 square miles in area, and underlies portion of Tehama, Glenn, Colusa and Yolo Counties.

Practically all the water requirements in the District are met by diversions of surface water from the Sacramento River. River Garden Farms has a Contract Total Supply of 29,800 afy, of which almost all (29,300 afy) is Base Supply and the balance (500 afy) is Central Valley Project (CVP) Project Water. The Base Supply and Project Water components of River Garden Farms’ contract supply are limited to specific months; the entire amount is limited to the months of April through October, and is further limited to a total of 12,700 af in the critical months of July through September. Total surface water supply is also limited in Shasta critical years to 75 percent of total contract amount. Most of the other land within the District is riparian to the Sacramento River and thus has water supply availability subject only to reasonable, beneficial use.

Table 1. Water Rights Entitlement

	Central Valley Project Water	Base Supply Water Rights	TOTAL
River Garden Farms	500 afy	29,300 afy	29,800 afy

Source: Reclamation District No. 787 Groundwater Management Plan, October 2012 (page 18)
https://water.ca.gov/LegacyFiles/groundwater/docs/GWMP/SR-39_RD787_GWMP_2012.pdf

There are currently seven production wells in the District that are available to complement surface water supplies in addition to one supply well used for River Garden Farm’s headquarters (the “Shop PW” with a capacity of about 3,000 gpm). Commonly known by names that denote their location relative to the field numbering system, the wells have approximate capacities as follows:

Table 2. River Garden Farms Production Wells Capacity

Well	Capacity (gpm)
Field 65	2,500
Field 71	1,700
Field 91-09	2,840
Field 93	3,000
Field 98	2,500 – 3,000
Field 104	2,500
Field 104-09	2,990
Field 117	1,965

Source: Reclamation District No. 787 Groundwater Management Plan, October 2012 (page 19)
https://water.ca.gov/LegacyFiles/groundwater/docs/GWMP/SR-39_RD787_GWMP_2012.pdf

At those capacities, the seven production wells that have the capacity to produce a combined total of about 17,000 to 17,500 gpm, which equates to a maximum of about 13,700 to just over 14,000 af over a six-month irrigation season. An additional production well, at Field 93, constructed in Spring 2013, added another 3,000 gpm. The seven production wells can be used for regular irrigation water supply or can provide a substitute water supply for some of the Total Contract Supply from the Sacramento River.

Upon completion of the proposed project, RD787 will have 100% SCADA coverage and placing out-flow meters will allow RD 787 to monitor the entire basin more accurately and control water flow measurements better.

Past Working Relationships with Reclamation

RD 787 has maintained a good working relationship with the Bureau of Reclamation since the execution of its water rights contract for the CVP.

RD 787 was awarded a \$29,399 FY 2019 WaterSMART Small-Scale Project grant to install water meters on two Sacramento River pumps and expand its existing Supervisory Control and Data Acquisition (SCADA) system. This project will enable the District to more accurately monitor water usage onsite and remotely, as well as deliver water more efficiently. The project is currently underway with an estimated completion date of June 2020.

Project Location

RD 787 is located in the northeastern portion of Yolo County, west of the town of Knights Landing and adjacent to the Sacramento River. The District is bound by the Sacramento River to the north and east, the Colusa Basin Drain Canal to the south, and County Road 98A to the west. State Highway 45 and Sycamore Slough generally bisect the District.

The flowmeter and SCADA project will be installed at the Can Pile pumping station located at latitude 45.258888N and longitude 111.145678W; and Big Bertha pumping station located at latitude 38.846659N and longitude 121.73061W.

Figure 1. Big Bertha Pumping Station



Figure 2. Can Pile Pump House and Pumping Facility



Figure 3. Colusa Groundwater Sub-basin and RD 787 Location

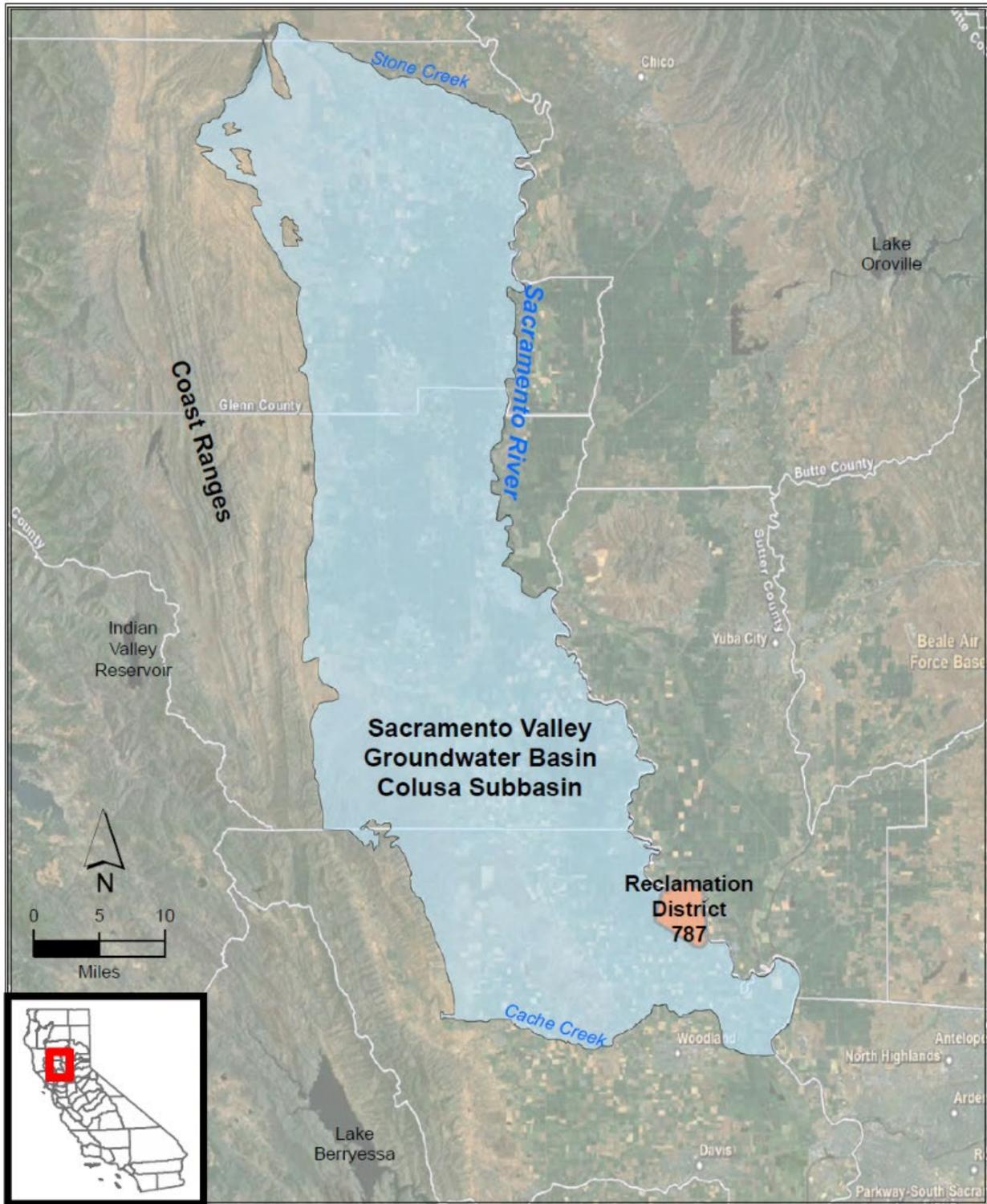
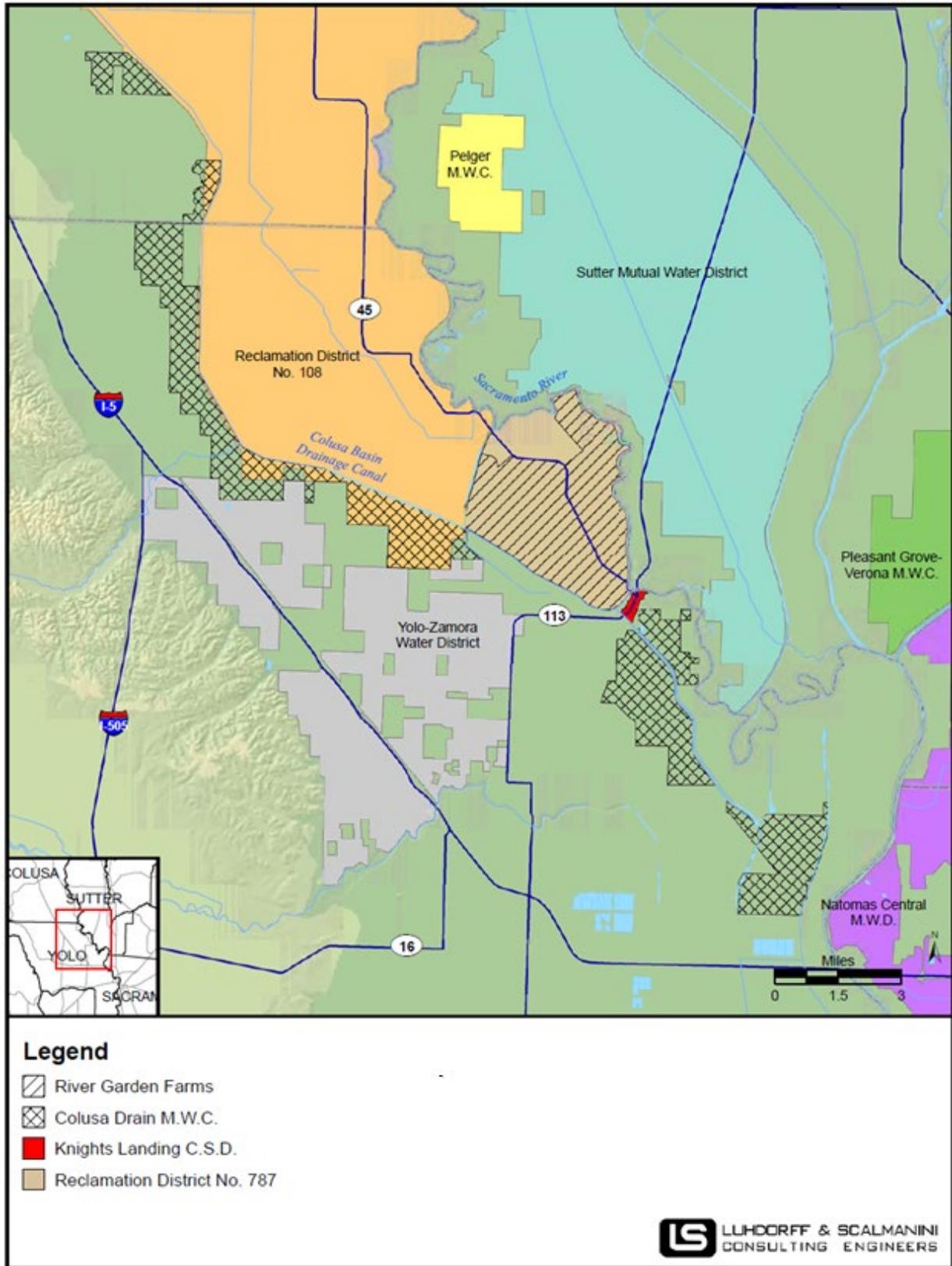


Figure 4. RD 787 and Nearby Water Districts



Technical Project Description and Milestones

RD 787's territory covers land owned by River Garden Farms, Cooling, Faye and Geer. When RD 787 closes out its FY 2019 WaterSMART Small Scale meter and SCADA project, almost all of its territory will be metered and covered by SCADA. The District has two remaining discharge pumping stations, Big Bertha and Can Pile, that are not metered or have SCADA. The two pumping stations are located on River Garden Farm property, of which RD 787 has a MOU (Attachment 1).

The lack of monitoring technology on RD 787's two remaining discharge pumps does not allow the district to track net water use. Currently, the District has the capability to monitor and control the amount of water being pumped; however, it does not know how much water is being discharged back into the Sacramento river. This means that the District does not have an accurate sense of water use.

Installing the three flowmeters and SCADA system on the Can Pile and Big Bertha pumping stations will tie the basin together into one integrated system and will help with the District's water management efforts. The new meters will provide discharge readings to a computer system for near-instantaneous tracking and viewing, greatly reducing the manual labor required for meter reading and allowing faster detection of water being discharged back into the Sacramento River. The additional SCADA system installations will allow operations personnel to operate the headgate remotely, saving time and mileage and improving operational efficiency.

Based on conversations and a tour of the property it was decided that two meters would be installed at Big Bertha's two discharge pipe and one meter will be installed on Can Pile Pumps intake weir. The Big Bertha meters would be installed as a minimum of 10 pipe diameters of straight run of pipe upstream and 2 pipe diameters downstream. Data from Flowmeters will be transmitted wirelessly from flow site back to the office and into the historian database. Each flow site will be timestamped and saved hourly for safe record keeping for future use.

Flow site pumps will be automated. Setpoints changeable by district operators will give the user the ability to maintain a specified level, without the operator being on premises. Controller will make use of alarming setpoints to contact operator if pumps were to fault out, levels go above alarming setpoints, or even power failure. Alarm contact is made via telephone or computer. Operators will have the ability to view flow sites remotely on a PC computer, phone or tablet.

Timeline

Assuming a project start date of April 1, 2020, the estimated project duration is 12 months and the anticipated completion date is April 31, 2020. A detailed project timeline with tasks and milestones can be found in the [Evaluation Criterion C – Project Implementation](#) section. Information regarding Environmental and Cultural compliance can be found in the [Environmental and Cultural Resources Compliance](#) section of the application as well as in Attachment 2.

Evaluation Criteria

Evaluation Criterion A – Project Benefits

Describe the expected benefits and outcomes of implementing the proposed project.

The proposed project will allow RD 787 to manage water more effectively by being able to track the amount of water going in and out District wide. RD 787 expects to see the following benefits result through the installation of the flowmeters and SCADA systems at the Can Pile and Big Bertha pumping stations:

- Accurate understanding of overall water usage and supply reliability throughout the entire District
- Real time flow measurements
- Ability to control the discharge rate into the Sacramento River
- Lower electricity costs
- Reduced staff time traveling to check pumps
- Provide accurate discharge information related to environmental and ecological improvement projects in RD 787
- Increase responsiveness to pumping issues during critical high-water events.

What are the benefits to the applicant's water supply delivery system? Extent to which the proposed project improves overall water supply reliability.

RD 787 is intending to use the meters to improve efficiency of the District by increasing its ability to monitor the net-usage of water more accurately. Presently, the District is calculating water use based on instantaneous measurements from the megameters installed throughout its territory. The main disadvantage of calculating delivered water volumes based on an instantaneous measurement is that the measurement device doesn't directly record the volume of delivered water. This can be problematic for two reasons. First, an accurate record of the duration of the delivery must be maintained to convert the instantaneous measurement of flow rate into a volume. Secondly, if there are fluctuations in water surface elevations during the course of a delivery, these fluctuations will affect the rate of discharge, and hence, the volume of water delivered.

The proposed WaterSMART project will install flowmeters and SCADA at the Big Bertha and Can Pile pumping stations which will provide critical discharge data. The discharge data will allow the District to accurately monitor the volume of water usage and potentially could minimize diversions from the Sacramento River.

The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)

RD 787 overlies the Sacramento Valley Groundwater Basin, Colusa Sub-basin. The project will allow the District to more accurately monitor and adjust the amount of water being pumped in and out of its service area.

Extent to which the proposed project will increase collaboration and information sharing among water managers in the region

RD 787 and River Garden Farms have an executed Memorandum of Understanding (Attachment 1) which outlines that all levee operations and maintenance and equipment needs are overseen by River Garden Farms. As such, the District and River Garden Farms frequently and often share data with each other. RD 787 is also willing to share data collected through the implementation of this project with the nearby District and the County, as requested.

RD 787 recently developed a one-page information sheet which shows how the District is monitoring the entire basin and is an example of a holistic approach to surface water and ground water management. This project builds on the outreach and further improves real time decision making.

Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)

Installation of the discharge flow meters will allow RD 787 and growers to have an accurate measurement of net water use. This data will allow farmers to better regulate use of irrigation water and overwatering will be avoided.

Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.

River Garden Farms, located within RD 787, is eligible for EQIP and is exploring applying for funding in 2020. River Garden Farms would use EQIP funds to install variable frequency drives, expand its monitoring systems and install weather stations. The proposed WaterSMART project would complement these efforts by adding another layer of data available to the district to monitor water use efficiencies.

Evaluation Criterion B – Planning Efforts Supporting the Project

Describe how your project is supported by an existing planning effort. Does the proposed project implement a goal or address a need or problem identified in the existing planning effort? Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to potential projects/measures.

In 2012 RD 787 completed a [Groundwater Management Plan Update](#) (the Plan). The Plan includes a number of actions related to groundwater supply and the long-term sustainability of groundwater and interrelated surface waters within the District. A major goal outlined in the plan is “Groundwater and Surface Water Monitoring” which consists of monitoring groundwater levels, groundwater quality, production (pumping rates and volumes), land subsidence, and surface water flows. River Garden Farms currently has ongoing monitoring in wells on their property, using dedicated water level pressure transducers which record water levels on a regular basis. The proposed project will install meters and SCADA which will allow RD 787 to track and monitor additional data on water being pumped in and out of the District more accurately. This data will allow RD 787 to ensure the long-term sustainability of its resources and prevent potential overdrafts.

The District has participated in the [Sacramento Valley Water Management Programs](#) (SVWMP), which is a collaborative effort to coordinate water management and planning for the beneficial use of water resources while providing for the long-term sustainability of those resources and improving water quality and supplies for a variety of uses throughout California. As part of the SVWMP, dedicated monitoring programs are being developed for each area in the Valley (including RD 787) that might be involved in that Program or other similar activities. The monitoring programs include pumpage, groundwater levels, groundwater quality, subsidence, and surface water flows. RD 787’s participation in the SVWMP and the expansion of its ability to monitor and collect data through the proposed WaterSMART project will also ensure water in the District is being used efficiently.

Evaluation Criterion C – Project Implementation

The expected project schedule, including major tasks, milestones and dates is shown in the table below.

Table 3. Estimated Project Schedule

Milestones/Tasks	Estimated Timing
Environmental Documentation Prepared and Approved by BOR	4 months
Install flow meters	2 months
Run conduit and wires to panel	
Test flow meters	
Install SCADA control boxes and infrastructure	4 months
Tie in new flow meters and existing well flow meters	
Integrate well controls	
All related work to integrate new station into River Garden Farms Server	
Final Reporting and Project Close Out	2 months

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

This project does not require approval or permitting.

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

Engineering and design work are not required for this project.

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

RD 787 does not anticipate any new policies or administrative actions required to implement this project. The SCADA and meters will be seamlessly integrated into the existing infrastructure to which staff are already trained and competent.

Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?

RD 787 reached out to the BOR Mid-Pacific Region staff to discuss the proposed project on February 14, 2020. BOR staff provided a conservative estimate that assumes some level of cultural resources reporting may be necessary due to the lack of detailed information on the method for installing the meters and SCADA and the age of the existing facilities, which will need to be evaluated (or treated) as eligible for the National Register of Historic Places. It is estimated that BOR Staff will need approximately 90 hours to conduct the environmental reviews with a total cost of \$8,734.80. See Attachment 2 for the quote provided by BOR.

Evaluation Criterion D – Nexus to Reclamation

Is the proposed project connected to a Reclamation project or activity? If so, how?

The proposed project is not connected to a Reclamation project or activity.

Does the applicant receive Reclamation project water?

River Garden Farms has a Contract Total Supply of 29,800 afy, of which almost all (29,300 afy) is Base Supply and the balance (500 afy) is Central Valley Project (CVP) Project Water.

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

This project does not directly involve Reclamation lands or facilities.

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

RD 787 overlies the Sacramento Valley Groundwater Basin, Colusa Sub-basin.

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

The proposed project will result in better water management, but it is not expected to contribute water to the Colusa Sub-basin.

Will the project benefit any tribe(s)?

The proposed project will not benefit any tribes.

Evaluation Criterion E – Department of the Interior and Bureau of Reclamation Priorities

The proposed water metering and SCADA project align with the following **DOI** priorities:

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

Expanding RD 787's meter and SCADA coverage to include discharge measurements from the Can Pile and Big Bertha pumping stations will result in having necessary water efficiency data to cover the District's entire service area and water basin footprint. The technology being deployed has been rigorously researched and proven to be effective in improving water monitoring and water usage efficiencies. The ability to have such data available will ensure the protection of the environment (avoid over drafting), minimize water resulting in water conservation, and improve water management practices.

Project Budget

Funding Plan

The Table below summarizes the funding sources for the Project. RD 787 will provide a cash match of \$62,589.94 through its General Funds.

Funding Sources	Amount
Non-Federal Entities	\$62,589.94
Cash on Hand	
Federal Entities	\$62,589.94
Requested WaterSMART Small-Scale Funding	
Total Project Funding	\$125,179.88

Budget Proposal

Budget Item Description	\$/Unit	Quantity	Quantity	Total Cost
Direct Costs				
Salaries and Wages				
<i>General Manager</i>	\$48.92/Hr	20	Hr	\$978.40
<i>Field Supervisor</i>	\$27.76/HR	30	Hr	\$830.10
<i>Accounting</i>	\$34.01 Hr	15	Hr	\$510.15
Fringe Benefits				
<i>General Manager</i>				\$176.11
<i>Field Supervisor</i>	18% of salaries and wages outlined above			\$149.42
<i>Accounting</i>				\$91.83
Equipment	<i>None</i>			
Travel	<i>None</i>			
Supplies and Materials	<i>None</i>			
Contractual/Construction				
<i>Innovative Controls – Flow Meters and SCADA</i>	\$98,709.07/each	1	Each	\$98,709.07
<i>Innovative Controls – Automation</i>	\$7,500/each	2	Each	\$15,000.0
Third-Party In-Kind Contributions	<i>None</i>			
Other				
<i>Environmental Compliance</i>	\$8,734.8/each	1	Each	\$8,734.8
TOTAL DIRECT COSTS				\$125,179.88
Indirect Costs				
<i>None</i>				
TOTAL ESTIMATED PROJECT COSTS				\$125,179.88

Budget Narrative

Salary and Wages

RD 787 will have three staff dedicated to the proposed WaterSMART project. Hourly wages were calculated based on yearly salary by the finance department and quantity of time dedicated to the project was determined based on previous experience installing SCADA and meters as well as conversations with other entities who have implemented similar projects.

The **General Manager** will be responsible for general oversight of the project as well as final reports.

$\$48.92/\text{hr} * 20 \text{ hours} = \978.40

The **Field Supervisor** will be responsible for project implementation oversight, monitoring the progress of the contractors executing the SCADA and meter implementation.

$\$27.67/\text{hr} * 30 \text{ hours} = \830.10

The **Accountant** will be responsible for financial reporting and tracking.

$\$34.01/\text{hr} * 15 \text{ hours} = \510.15

Fringe Benefits

Fringe benefits include FICA and health insurance costs and were calculated for each staff participating in this project. Fringe benefits are calculated as 18% of the salary.

Travel

Not Applicable.

Equipment

Not Applicable. All equipment costs are included in the Contractual line item found below.

Materials and Supplies

Not Applicable. All materials and supplies costs are included in the Contractual line item found below.

Contractual

RD 787 received quotes from vendors in order to estimate the cost of each element.

The SCADA and flow meters implementation quote of \$98,709.07 was provided by *Innovative Controls* (see Attachment 3). The quote includes the following labor and material for a Turn-Key Flow Monitoring and Remote Manual Pump Control System installation at the Big Bertha and Can Pile pumping stations:

Description	Big Bertha Quantity	Can Pile Quantity
Stilling Well	1	1
Level Transducer	1	1
Wire Protection Kit	1	1
Conduit	1	1
Conduit Fittings	1	1
Wire Protection Kit	1	1
Stilling Well Enclosure	1	1
24x24x8 NEMA 12 Enclosure	1	1
24x24 Backpan	1	1
BRX PLC	1	1
Xetawave Radio	1	1
Power Supply	2	2
Comm. Cables	4	4
Switch	1	1
Misc Panel Comp.	1	1
Jumper	1	1
Polyphaser	1	1
Connectors	2	2
½" Helix	30	30
Antenna Pole	1	1
Antenna	1	1
Transformer 480/120V AC	1	1
Flowmeters	2	3
TOTAL COST	\$45,029.4	\$53,679.67

Innovative Controls will also implement the automation at both sites and provided a verbal quote of \$7,500 per site (\$15,000 total).

Third-Party In-Kind Contributions

Not Applicable.

Environmental and Regulatory Compliance Costs

RD 787 reached out to the BOR Mid-Pacific Region staff to discuss the proposed project on February 14, 2020. BOR staff provided a conservative estimate that assumes some level of cultural resources reporting may be necessary due to the lack of detailed information on the method for installing the meters and SCADA and the age of the existing facilities, which will need to be evaluated (or treated) as eligible for the National Register of Historic Places. It is estimated that BOR Staff will need approximately 90 hours to conduct the environmental reviews with a total cost of \$8,734.80. See Attachment 2 for the quote provided by BOR.

Other Expenses

Not Applicable.

Indirect Costs

Not Applicable.

Environmental and Cultural Resources Compliance

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

The proposed project involves installing three flow meters and SCADA on existing pipes at the Big Bertha and Can Pile Pump Stations. There will be no excavation, dirt work, or changes to pumping station infrastructure required to complete this project.

Based on conversations and a tour of the property it was decided that two meters would be installed at Big Bertha's two discharge pipes and one meter will be installed on Can Pile Pumps intake weir. The Big Bertha meters would be installed as a minimum of 10 pipe diameters of straight run of pipe upstream and 2 pipe diameters downstream. Data from Flowmeters will be transmitted wirelessly from flow site back to the office for the historian database. Each flow site will be timestamped and saved hourly for safe record keeping for future use.

Flow site pumps will be automated. Setpoints changeable by district operators will give the user the ability to maintain a specified level, without the operator being on premises. Controller will make use of alarming setpoints to contact operator if pumps were to fault out, levels go above alarming setpoints, or even power failure. Alarm contact is made via telephone or computer.

Operators will have the ability to view flow sites remotely on a PC computer, phone or tablet.

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?

Located within the project area includes the giant garter, yellow-billed cuckoo, California tiger salamander, California red-legged frog, Delta Smelt, Valley Elderberry Longhorn Beetle, Vernal Pool Fairy Shrimp, and Vernal Pool Tadpole Shrimp. There are no critical habitats in the area. None of these species are located close to the project site and it is anticipated that they will not be impacted by the project.

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

No

When was the water delivery system constructed?

1950s

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.

No, this project does not involve any modifications to the existing irrigation system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

There are no historic buildings, structures or features in the irrigation district listed on the National Register of Historic Places.

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

There are no known archaeological sites in the proposed project area.

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

The proposed project will not impact low income or minority populations.

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

There are no sacred sites or tribal lands that will be impacted by the proposed project.

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

This project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

Required Permits or Approvals

RD 787 does not anticipate the need for any permits or approvals as part of this project.

Official Resolution

Resolution No #20-01
Reclamation District 787

RESOLUTION AUTHORIZING THE SUBMITTAL OF A FINANCIAL ASSISTANCE APPLICATION TO THE BUREAU OF RECLAMATION FOR INSTALLING 3 WATER METERS AND SUPERVISORY CONTROL DATA ACQUISITION (SCADA) SYSTEMS; AUTHORIZING THE BOARD OF DIRECTORS TO EXECUTE ALL NECESSARY APPLICATION DOCUMENTS; AND AUTHORIZING THE SUBMISSION OF THIS APPLICATION

WHEREAS, Reclamation District 787 desires to improve water monitoring and management of its entire service area; and

WHEREAS, the Project involved installing three water meters and Supervisory Control Data Acquisition systems (SCADA) on two Sacramento river pumping stations; and

WHEREAS, the Reclamation District 787's Groundwater Management Plan and the Sacramento Valley Water Management Program recognize the need for monitoring water use and using water efficiently; and

WHEREAS, the U.S. Bureau of Reclamation (USBR) has announced the availability of funds for small-scale water efficiency projects through FY 2020 WaterSMART Grants: Small-Scale Water Efficiency Projects; and

WHEREAS, said funding is intended to conserve and use water more efficiently; mitigate conflict risk in areas at a high risk of future water conflict; and accomplish other benefits that contribute to water supply reliability in the western United States; and

WHEREAS, said funding includes grants at reasonable terms; and

WHEREAS, Reclamation District 787 will comply with all applicable laws and regulations relating to the project, including NEPA prior to implementation of the Project; and

WHEREAS, various documents are required to be filed with the USBR related to the FY 2020 WaterSMART Grants: Small-Scale Water Efficiency Projects application.

NOW, THEREFORE, BE IT RESOLVED:

1. That the Board of Directors authorized the submittal of a financial assistance application with the USBR for the meter and SCADA system expansion project.
2. That the Board of Directors is authorized to sign all necessary Project application documents.
3. That the Board of Directors supports the grant application.

The foregoing resolution was duly **passed and adopted** by the Board of Trustees of Reclamation District No. 787 at a meeting thereof held on March 3, 2020 by the following roll call vote:

AYES: 2
NOES: 0
ABSTAIN: 0
ABSENT: 1

Signed by me after its passage this 3rd day of March 2020.



Roger Cornwell, President RD 787

Unique Entity Identifier and System for Awards Management



A NEW WAY TO SIGN IN - If you already have a SAM account, use your SAM email for login.gov.

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Attachment 1: MOU

RECLAMATION DISTRICT NO. 787

RESOLUTION NO. 19-01

**A RESOLUTION BY THE BOARD OF TRUSTEES OF RECLAMATION DISTRICT
NO. 787 TO AUTHORIZE CONTRACTING FOR LEVEE REPAIRS AND
MAINTENANCE**

WHEREAS, Reclamation District No. 787 (District) has an ongoing need to hire contractors to perform maintenance and repair work on the District levees;

WHEREAS, historically the most economical way to provide such services has been to contract with Trustees and landowners for those services; and

WHEREAS, Government Code Section 1090 prohibits members of the board of trustees from being financially interested in any of the District's contracts; and

WHEREAS, Government Code Section 1091(b)(13) defines a board member's financial interest as "remote" in a contract for reimbursement of expenses, salary or per diem; and

WHEREAS, Government Code Section 1091.4 defines a board members' financial interest in a contract as remote in the case of certain contracts for maintenance and repair; and

WHEREAS, the District is a landowner voter district with a population of less than 5,000 people that does not distribute water for domestic use, pursuant to Government Code 1091.4, and the work to be performed is for levee maintenance and repair;

WHEREAS, pursuant to Government Code 1091.4 the District's need for maintenance and repair services has been widely advertised; and

WHEREAS, as demonstrated by previous bills from known area contractors, the proposed rate of reimbursement for this work is reasonable and will result in materially less expense to the district than the expense that would have resulted under reasonably available alternatives.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. After a review of the relevant documents and information, the District Board of Trustees has determined that the District cannot hire an independent contractor to perform the needed work at a reasonable price.
2. In light of the District's ongoing need for such services and lack of available personnel to provide them, the Board has determined that it is in the District's best interest to periodically hire board members or their companies to perform such work on an as-needed basis, and to reimburse those individuals for their expenses associated with that work.

3. The Board hereby authorizes the reimbursement of board members, or companies in which the board members are financially interested, to conduct maintenance and repairs on District levees until March 2020, at which time the District intends to re-advertise the work and reevaluate whether an independent contractor can be hired for a reasonable price.

4. No board member who is hired to conduct this periodic work shall participate in making the contract on behalf of the District and will abstain voting on whether to approve the contract.

PASSED AND ADOPTED by vote of the Board of Trustees on February 6th, 2019.

By 
President, Board of Trustees

CERTIFICATION

I, Roger Coan, certify that I am, and at all times mentioned herein was, the duly appointed, qualified and acting Secretary of the Board of Trustees of Reclamation District 787, a reclamation district organized and existing under and by virtue of the laws of the State of California; that the foregoing is a full, true and correct copy of a Resolution duly and regularly adopted at a meeting of the Board of Trustees of said District duly and regularly held on 2-6-19, a majority and quorum of the members of said Board being present and voting in favor of said Resolution; and that said Resolution has not been modified, rescinded, altered or amended and is now in full force and effect.

WITNESS my hand this 6th day of February, 2019.


Secretary, Board of Trustees

Attachment 2: BOR Consultation

FY20 SWEF Grant
Cost Estimate for, CGB-153 Cultural and CGB-152 Environmental
(Costs for In-House Review Only)

RD 787: Pre-application FY20 SWEF Grant Cultural Resources Cost Estimate Request

Cultural Resources

Project Description: The proposed project includes installing 4 water meters as well as Supervisory Control and Data Acquisition (SCADA) system on existing structures (pipes already there). There will be no ground disturbance for installation of the meters. The existing structures were built in 1950.

The estimate provided below is a conservative estimate that assumes some level of cultural resources reporting may be necessary due to the lack of detailed information on the method for installing the meters and SCADA and the age of the existing facilities, which will need to be evaluated (or treated) as eligible for the National Register of Historic Places.

Assumptions:

- 1) One Reclamation Archaeologist at GS-11-5 and one Reclamation Architectural Historian at GS-12-8.
- 2) Costs are non-reimbursable.
- 3) Reclamation is in a review and consultation role only (Reclamation will not complete cultural resources inventory or evaluation reporting).
- 4) If needed, a separate cultural resources inventory and evaluation report will be completed by the applicant's cultural resources contractor and submitted to Reclamation's cultural staff for review. **Please coordinate with Reclamation's cultural resources staff on the level of effort and qualifications of contractor staff needed for this reporting prior to survey work being conducted, to determine the level of effort needed.** The reporting may result in survey of the project footprint [including any ground disturbance areas, staging, and access routes] by the applicant's cultural resources consultant. Any cultural resources found will need to be evaluated for the National Register of Historic Places.
- 5) If needed, tribal consultation will be conducted by Reclamation cultural resources staff.
- 6) The vertical area of potential effect (APE) will need to be determined for any ground disturbing activities, so consultant may need to create and employ a buried sites identification plan, scoped to the proposed project activities.

- 7) Geoarchaeological sensitivity assessment for buried resources must be included within the reporting and be scoped to the proposed project activities.
- 8) Assumes the project will result in, at maximum, no adverse effect to historic properties, otherwise costs will go up. Additional cost estimate for resolution of adverse effect and execution of a Memorandum of Agreement can be provided, if needed.
- 9) Assumes there are no prehistoric sites identified in the APE. If prehistoric sites are identified, additional consultation and coordination may be required. This could result in an increase in costs.
- 10) Reclamation cultural staff will review and provide content for National Environmental Policy Act (NEPA) documentation.

Position	Hours	Cost	Tasks
Archaeologist (11-5)	24	\$2,272.80	2 (phone) Meeting GIS Mapping Tribal Consultation Report Review SHPO Consultation NEPA Section Preparation/Review
Architectural Historian (12-8)	40	\$3,592.00	2 (phone) Meeting Provide Guidance for Applicant/Consultant Report Review SHPO Consultation Review NEPA Section Preparation/Review
Regional (13-5) Archaeologist	2	\$270.00	Review and Signature
			Total: \$6,134.80
Travel Costs		0	

Environmental

Position	Hours	Cost	Tasks
Natural Resource Specialist	10	\$1100	Prepare CEC and prepare or review endangered species assessment
Natural Resource Specialist (Endangered Species)	8	\$880	Review endangered species assessment and consultation if needed
Natural Resource Specialist (Review)	4	\$440	Review CEC
Supervisory Natural Resource Specialist (Review and approval)	2	\$280	Final CEC review and branch approval

TOTAL		\$2700.00	
Travel Costs		0	

It is the project sponsor's responsibility for any field studies and subsequent study reports. The Environmental Compliance Branch only reviews and comments on the reports.

Attachment 3: Quote



Lic # 965664

To: River Garden Farms

Attn: Dominic

Project: Big Bertha/ Canpile

Date: 2/19/20

Project Scope:

This project will provide labor and material for a Turn-Key Flow Monitoring and Remote Manual Pump control system.

5 Total Flow Monitoring

Canpile will be a lengthy setup, extra labor and material has been added to the quote to help with its install.

4 Remote Manual Pump Control

Automatic control can be added any time in the future when needed.

Big Bertha		
	Description	Qty
1	Stilling Well	1
2	Level Transducer	1
3	Wire Protection Kit	1
4	Conduit	1
5	Conduit Fittings	1
6	Wire Protection Kit	1
7	Stilling Well Enclosure	1
8	24x24x8 NEMA 12 Enclosure	1
9	24x24 Backpan	1
10	BRX PLC	1
11	Xetawave Radio	1
12	Power Supply	2
13	Comm. Cables	4
14	Switch	1
15	Misc Panel Comp.	1
16	Jumper	1
17	Polyphaser	1
18	Connectors	2
19	1/2" Heliac	30
20	Antenna Pole	1
21	Antenna	1
22	Transformer 480/120VAC	1
23	Flowmeters	2

	Description
1	Labor
2	PLC Programming
3	HMI Programming
4	Radio Programming
5	Build Panel
6	Debug
7	Engineering

Big Bertha Total \$45,029.40

Canpile		
	Description	Qty
1	Stilling Well	1
2	Level Transducer	1
3	Wire Protection Kit	1
4	Conduit	1
5	Conduit Fittings	1
6	Wire Protection Kit	1
7	Stilling Well Enclosure	1
8	24x24x8 NEMA 12 Enclosure	1
9	24x24 Backpan	1
10	BRX PLC	1
11	Xetawave Radio	1
12	Power Supply	2
13	Comm. Cables	4
14	Switch	1
15	Misc Panel Comp.	1
16	Jumper	1
17	Polyphaser	1
18	Connectors	2
19	1/2" Heliac	30
20	Antenna Pole	1
21	Antenna	1
22	Transformer 480/120VAC	1
23	Flowmeters	3

	Description
1	Labor
2	PLC Programming
3	HMI Programming
4	Radio Programming
5	Build Panel
6	Debug
7	Engineering

Canpile Total \$53,679.67

Clarifications:

1. This quote is good for 30 days.
2. 1 Year Warranty parts and Labor
3. RGF will aid in the install of the flowmeters on all five pipes.
4. Assume all existing equipment is in good working condition.
5. RGF will assist in covering trench's and help set in Stilling Wells in ditch's
6. Tax and Shipping not included.

Should you have any questions or require any clarifications please contact us.

Innovative Controls

Phone 1.800.301.4814

Email ryan@icscada.net