

Small-Scale Water Efficiency Projects for FY2019
Funding Opportunity Announcement No. BOR-DO-19-F005

City of Big Bear Lake

Department of Water & Power



Water System Facilities Automation Project

Phase III

Applicant Information: City of Big Bear Lake
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TECHNICAL PROPOSAL

Section 1. Executive Summary

Date	April 24, 2019
Applicant	City of Big Bear Lake, Department of Water and Power
City, County, State	Big Bear Lake, San Bernardino, California
Project Name	Water System Facilities Automation Phase III
Project Length	18 months from award date
Estimated Completion Date	March 31, 2021

The City of Big Bear Lake, Department of Water and Power (DWP) is applying for \$75,000 in federal funding assistance from the United States Bureau of Reclamation's (USBR) WaterSMART Small-Scale Water Efficiency Projects (Fiscal Year 2019 Funding Opportunity Announcement No. BOR-DO-19-F005).

If awarded, the DWP will use funds for multiple interrelated efficiency projects that will modernize existing infrastructure. First, it will allow the DWP to equip three of its existing pumping plant controls with new variable frequency drive (VFD) units (including pressure sensors and water level monitoring controls). Once equipped, the DWP will contract to upgrade or install new telemetry components at all three sites in order to more accurately control and monitor water use and fluctuations using the new technology. Additionally, the DWP will install two SCADA QB Base Station Bridge Radios and five SCADA QB Radios, which will give the DWP the ability to more quickly and automatically identify potential water loss situations requiring immediate attention. With the real-time data provided by SCADA technology, DWP will be in the best position to proactively and optimally respond to changes in water production and consumption conditions.

The DWP has identified these projects as a high priority as they will allow staff to identify: (1) unusual drops in water levels (often indicative of large-scale water loss); (2) increases in water use (as experienced on high-traffic holiday weekends); as well as, (3) more accurately compare water production to water consumption. In a basin solely dependent on groundwater, these improvements will help the DWP to improve energy efficiency and have more control, ultimately enabling the DWP to conserve and use water more efficiently.

Once funding is approved and authorized to begin the project, the DWP estimates that it will take ten to twelve months to install the hardware and an additional six to eight months to upgrade the telemetry system. The Project is not located on a Federal Facility.

Section 2. Background Data

2.1 Source of Water Supply/ Water Rights

The DWP produces potable water from a combination of horizontal wells (gravity) and vertical wells (pumped) in the Bear Valley Groundwater Basin (CA DWR designation 8-9). The Bear Valley Groundwater Basin is un-adjudicated; however the DWP works closely with the other

public water provider, the Big Bear City Community Services District (BBCSD), to ensure the basin is not over drafted. The perennial yield of the entire Bear Valley Groundwater Basin is estimated at 5,500 acre-feet per year (afy) while the safe yield within the DWP’s service area is 3,100 afy. The DWP’s current demands are below the perennial yield of its service area and the DWP has adequate pumping facilities to meet those demands. Table No. 1, below, demonstrates that the average annual demand is within the safe yield for the DWP service area. The DWP does not use surface or imported water to meet its water demand, as importing water into the Bear Valley would be extremely costly and is not a viable option.

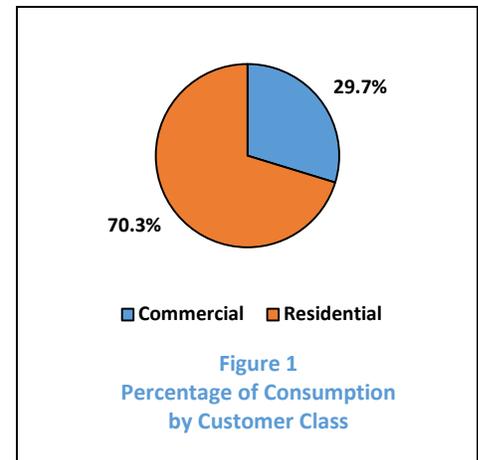
Table No. 1 Current and Projected Supply/Demand

Supply Source	Annual Pumping (afy)					
	2015	2020	2025	2030	2035	2040
Groundwater/ Total	2,095	2,169	2,246	2,326	2,408	2,494

Note: The calculations used for the demands are based on a 0.7% growth in demand each year, beginning in 2015. Supplies are assumed to equal Demand, up to 3,100 AFY (DWP’s share of the operating safe yield of the Bear Valley Groundwater Basin).

2.2 Current Water Uses

The DWP has two customer classes: Residential and Commercial. The Commercial customer class includes multi-family housing units served through master meters. Commercial customer’s consumption comprises 29.7 percent of the DWP’s total customer consumption, as illustrated in Figure 1.



2.3 Water Delivery System and Water Users Served

The DWP distributes its potable water supply through a distribution system consisting of five water systems with 15 separate pressure zones, 180 miles of pipeline, 33 vertical wells, 22 slant wells, 15 reservoirs, 12 booster stations, 41 pressure reducing valves, 26 chlorination stations, and 22 sample stations. Table No.2, below, is a summary of DWP’s projected water use by customer class. Based on the data collected in the 2015 Urban Water Management Plan (UWMP), the average annual population in the DWP service area in 2015 was estimated at 25,601 (including full time and temporary populations). The 2015 UWMP assumed a growth rate of 0.7 percent for subsequent years.

Table No. 2 Summary of Projected Water Use by Customer Class

Customer Class	2020	2025	2030
	Population 26,510	Population 27,451	Population 28,425
	Demand (afy)	Demand (afy)	Demand (afy)
Residential	1,443	1,495	1,548
Commercial	474	491	509
System Losses	220	227	235
Unbilled	32	33	34
Total	2,169	2,246	2,326

2.4 Working Relationship with the Bureau of Reclamation

The DWP has been working in cooperation with Reclamation for more than three years, during which time the DWP has developed a proven history of completing projects promptly and meeting all Reclamation reporting milestones. During those three years, DWP has been awarded seven Reclamation grants, two in 2016, four in 2017, and one in 2018.

The DWP entered into Assistance Agreements R16AP0113, the “City of Big Bear Lake Advanced Metering Infrastructure Program” and R16AP0116, the “Big Bear Boulevard Replacement Pipeline” projects in July 2016, completing the projects in March of 2017, and submitting the Final Project Report and closeout documentation in September of 2017.

The DWP entered into Assistance Agreement R17AP00124, the “Division Well Field Solar Project,” in 2017. The solar and energy professionals hired for the project have completed the system design, the engineering, as well as, the material procurement. This project is anticipated to be completed in June 2019.

The DWP also entered into Assistance Agreement R17AP00185 for “Water System Facilities Automation Projects”. DWP has completed installation of the variable frequency drive (VFD) motor starter units and pump controls for the Division #7 and the Sheephorn well-pumping plant sites. The VFD for the Division #6 well-pumping plant site is expected to be installed by May 2019. DWP also completed the necessary upgrades to the related telemetry control systems and installed twenty well production water meters.

The DWP entered into Assistance Agreement R17AP00059, “BBLDWP Water Conservation Management Plan” which was awarded in August 2017. DWP prepared a Water Conservation Management Plan (Plan) and the Plan was adopted by the Board at the March 26, 2019 Board Meeting.

The DWP also entered into Assistance Agreement R17AP00287, the “Advanced Metering Infrastructure Program Phase III” in September 2017 and completed the project on September 18, 2018.

The DWP received notification that our 2018 WaterSMART Small-Scale Water Efficiency Project Grant for “Water System Facilities Automation Project Phase II” was accepted. The reference number for this Grant Agreement is R18AP00226 and the Agreement is pending.

We look forward to a continued productive relationship with the USBR for future projects.

Section 3. Project Location

DWP’s water service area is located within the Bear Valley, as depicted in Figure 2. This area is located in the San Bernardino Mountains in San Bernardino County, California approximately 77 miles east of Los Angeles. The DWP’s service area is located primarily along the south shore of Big Bear Lake. Fawnskin lies to the north of the Lake, and the Sugarloaf-Erwin Lake and Lake William systems are located east of Big Bear Lake. In total, the DWP’s service areas encompass approximately 13 square miles. A PDF file of the location is included in SF 424 Question 14.

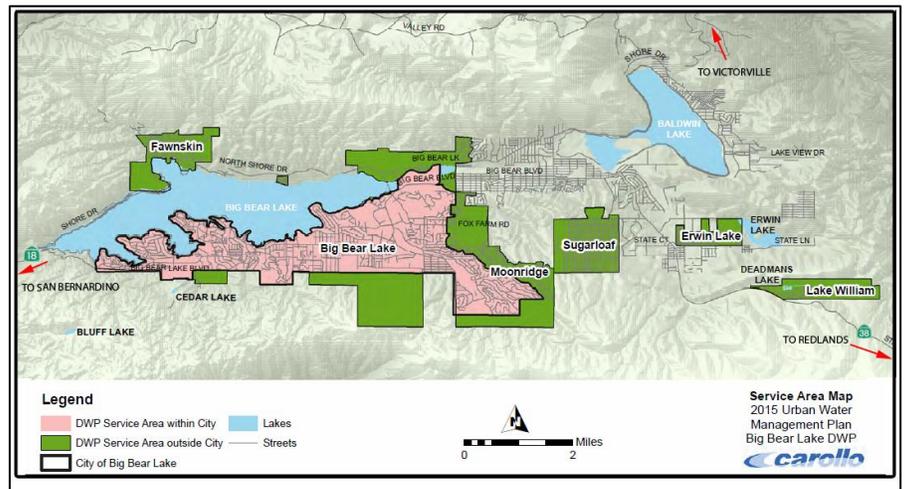


Figure 2 Project Location (A PDF file of the location is included in SF 424 Question 14)

Section 4. Technical Project Description

The technical project description should describe the work in detail, including specific activities that will be accomplished. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal. The technical project description must include milestones for the completion of the project, including but not limited to, environmental compliance, permitting, final design, and construction.

- Identify the problems and needs
- Describe how the project is intended to address the problems and needs
- Identify the expected outcomes

Section 4.1 Problems and Needs

The DWP has three multi-faceted issues that will be addressed by this project. First, and at the core of these issues, is the fact that a portion of the DWP infrastructure is lacking modern technology that makes it difficult to isolate water loss and accurately report production. Second, the service area is entirely dependent on groundwater with no outside water sources. Third, the system requires flexibility and energy efficiency as it experiences wide fluctuations in demand and the region is at high risk of natural disasters as well as, drought.

To expound, the City of Big Bear Lake took over the water system from the Southern California Water Company in June of 1989 after a condemnation proceeding and court order. Just prior to this point, the California Department of Health Services imposed a water connection moratorium for the Big Bear-Moonridge water system following a holiday season with water outages when the water system did not have the capacity and flexibility to serve all of its customers. Since that time, the DWP has invested more than \$65 million in infrastructure improvements. While having taken tremendous strides in modernization, the system still requires additional improvements to fully and efficiently monitor, control and report water production and storage in real time.

DWP serves a relatively isolated community at 6,750 feet above sea level. Past analysis has proven that imported water would be cost prohibited in the extreme. Being a mountain resort community, Big Bear experiences wide fluctuations in population, from less than 20,000 full-time residents on a given weekday, to over 100,000 during a holiday weekend. Given the influx of weekend and holiday visitors to the service area, it is estimated that the temporary population is four times the full-time population. As a result, the system must be managed in a way that provides for its full time population, but retains the flexibility to efficiently scale up production when dictated by an increase in demand.

An additional reason the DWP requires flexibility in production, real-time monitoring of well production and the ability to respond quickly is because the community is surrounded by national forest and located near the San Andreas Fault line. Peak demand frequently coincides with periods of increased risk in the community. Tourists flock to the valley during snow events, which can also result in road closures. Independence Day weekend sees the highest demand, but coincides with the time of year when wildfires are most frequent. The community has only three (paved) access roads into the Big Bear Valley which are susceptible to closures from rock fall, mudslides, wildfires, ice or snow. Therefore, if the community experiences a crisis during peak demand, that demand could continue until the crisis is complete and all routes of egress have been cleared.

Section 4.2 How the Project is Intended to Address Problems/Needs

The DWP has identified three well-pumping plant sites that would vastly benefit from the installation of variable frequency drive (VFD) motor starter units. VFD units are a type of motor controller that varies the frequency and voltage supplied to the motor, allowing for variable speed pumping operation, allowing the pump operator to vary the flow rate of the pump. As part of the VFD efficiency upgrade, the DWP will also add new pressure and water level sensing devices and displays. Without this technology, the existing pumps are designed to run at full speed, or not at all, resulting in higher energy costs and potentially added stress on the aquifer. This added efficiency will allow the DWP to make appropriate modifications in the volume of water pumped from each well. Without the ability to import water, the DWP must take great care in how and where water is extracted from the aquifer.

For these three well sites, the DWP will also update the SCADA telemetry control system, giving these sites the ability to remotely communicate directly with the main office and also directly to the DWP operators. Similar telemetry technology at a different site alerted the agency to a minor emergency in the past. In January of 2018, a DWP Operator received an alert about the

water level quickly dropping in a reservoir. Upon investigation, staff found that a vehicle had collided with a fire hydrant, which broke off its footings, with thousands of gallons of water gushing down the adjacent hillside and resulting in 203,000 gallons of water loss. With the telemetry technology, staff was able to respond quickly and prevent further loss.

Additionally, the DWP will install two SCADA QB Base Station Bridge Radios and five SCADA QB Radios. DWP's current radio system is slow. The new SCADA Radios will notify DWP in real time of situations requiring immediate attention such as power outages and well fails. With this enhanced technology, the DWP will be in a much better position to react quickly and effectively, minimizing water loss.

If the community were to experience a large-scale wildfire or earthquake affecting water supplies, the proposed system upgrades would give DWP water operators vital information to manage and control water supplies and production. Upgrading pumping plants with VFDs, providing a link with the Sensus radio read network, and installing SCADA QB radios will assist the DWP in overall production monitoring and reporting. Also, these upgrades will be a great asset in calculating water loss, a relatively recent California state law, and best practice. For these reasons, a reliable and flexible water supply is of the utmost importance. The ability to collect data and respond, in real time, is critical.

Section 4.3 Expected Outcomes

Major milestones for the Project with an anticipated start date of October 2019:

- Complete installation of SCADA QB Radios: Approximately April 30, 2020 (Project Day 210)
- Complete installation of VFD Motor Starter Units: Approximately March 31, 2021 (Project Day 540)
- Complete installation of SCADA Telemetry Control Systems: Approximately March 31, 2021 , (Project Day 540)

Upon project completion, the DWP will be able to control and regulate the pumping of each well based on system needs and aquifer water levels. Installation of the new equipment and the advanced technology will enable DWP staff to monitor and control the system in a way that not only protects the water system but the aquifer. The DWP will be able to prepare more accurate monthly production and water loss reports for State mandated reporting. Improved and timelier data will reduce field visits and costly administration time in recalculating total flows from each well.

Section 5. Evaluation Criteria

Section 5.1 - E.1.1. Evaluation Criterion A—Project Benefits (35 points)

Up to **35 points** may be awarded based upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including the significance of the anticipated water management benefits and the public benefits of the project. This criterion prioritizes projects that modernize existing

infrastructure in order to address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflict in the region.

In a small and isolated community, wholly dependent on groundwater, this project will improve water reliability by modernizing 30 to 45 year old infrastructure to better manage water production, production data, associated energy costs and potential water loss. The DWP will better be able to respond to emergency water loss as well as manage production in a crisis, such as responding to wildfires. In addition, with increasingly accurate production data, alongside accurate consumption data from the agencies AMI implementation, these upgrades will assist the agency in identifying, isolating and addressing system water loss. While a project of this scale may be minor in a large and connected urban community, it will make a large impact in the Big Bear Valley. Upon the completion of this project, the DWP will have made three necessary improvements to the water system.

- The first consists of installing variable frequency drive units on three older wells, replacing outdated starter equipment. The VFD units allow the DWP to monitor and control each well depending on what the system requires. These VFD units will allow water operators to regulate the production of the well according to what the water level is in the aquifer. Benefits include the ability to operate the well without the possibility of overpumping the aquifer as well as cutting down on electrical costs while extending the life of the motor.
- After VFD's are installed, the DWP will contract to upgrade the SCADA telemetry systems controlling these sites. This will enable operators to make any adjustments or changes remotely, and improve reporting capabilities. By modernizing infrastructure with real time alarms, staff will be able to respond quickly and from a remote location improving efficiency while reducing costly site visits.
- Finally, the DWP will install 2 SCADA QB Base Station Bridge Radios and 5 SCADA QB Radios, enabling DWP to quickly and immediately respond to real time data and thus minimize water loss.

Working together, the equipment and technology will support DWP efforts to more efficiently meet varied water demands, such as those experienced most drastically in a resort community. These improvements will conserve and use water more efficiently and contribute to water supply reliability in the western United States.

Section 5.2 - E.1.2. Evaluation Criterion B—Planning Efforts Supporting the Project (35 points)

Up to **35 points** may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant's existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the applicant. This criterion prioritizes projects that are identified through local planning efforts and meet local needs.

The elements of this proposal have been identified in multiple planning efforts and documents including a past five-year capital improvement plan, the early stages of the next five-year capital improvement plan, as well as, DWP's Water Conservation Management Plan adopted on March 26, 2019, which was funded by the Bureau in 2017.

Managing water loss is identified as a key component of DWP's Water Conservation Management Plan. The Water Loss component consists of three elements that are addressed as part of this project: (1) annual accounting of production, sales by class and non-revenue water, (2) thorough meter testing and repair/replacement program, and (3) to identify and quantify known legitimate uses of non-revenue water, unaccounted for water losses and ultimately lower the infrastructure leakage index (ILI).

In 2017 and in 2018, the Bureau awarded the DWP funding for similar small-scale water efficiency projects. The current proposal would expand upon that progress.

DWP's Board of Commissioners recently adopted a new five-year capital improvement plan and strategic plan. In 2015, California passed Senate Bill 555 requiring annually validated water loss reporting. A team of three DWP staff members from Water Production, Conservation and Customer Service departments, attended all available training through the Water Loss Technical Assistance Program and the agency has one certified Water Loss Auditor. Current DWP planning efforts go beyond monitoring water demand through telemetry and VFD's and extends into using that data to minimize water loss and maximize energy efficiency. Current planning efforts support the DWP's longtime planning approach to update facilities and adopt technology as they become available, affordable and reliable.

Section 5.3 - E.1.3. Evaluation Criterion C—Project Implementation (10 points)

Up to 10 points may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed 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.

- Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

If funded, the project will commence immediately. Based on past experience, the DWP has developed a project schedule based on the days from award/agreement, rather than a static calendar, to account for any variation in which notification and/or a signed agreement are complete.

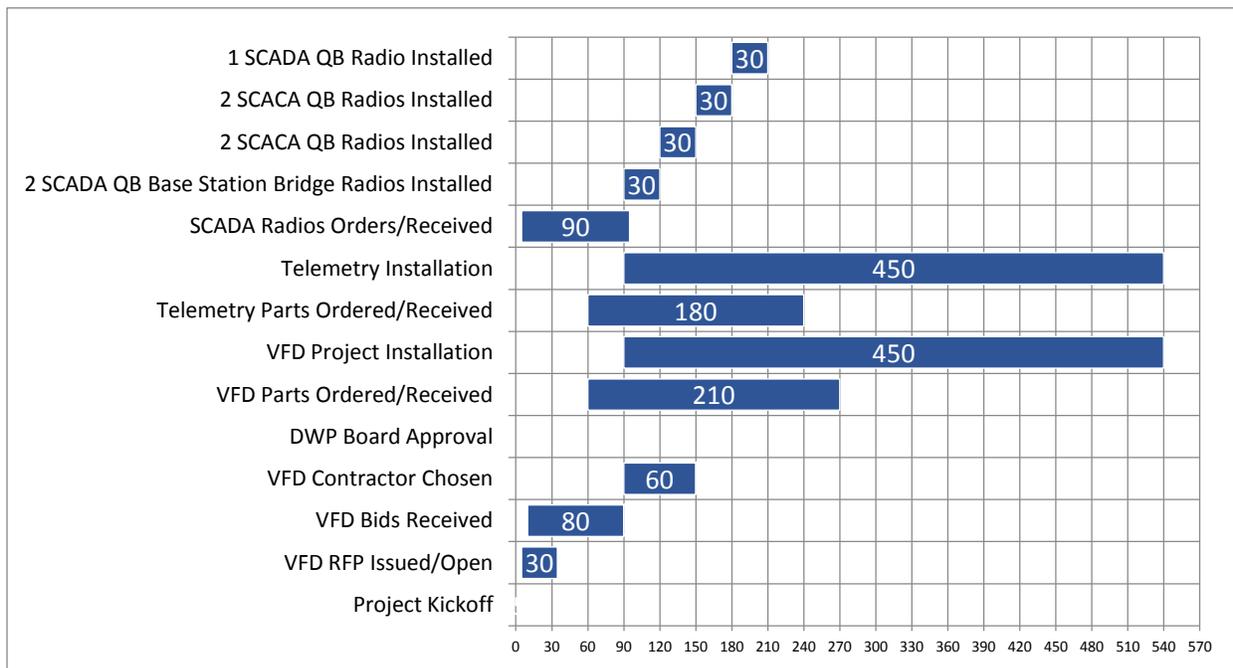
Table No. 3, the project schedule, shows each of the major tasks associated with the DWP Water System Facilities Automation Project. The horizontal axis shows the total number of days from the project kick-off while each horizontal bar shows the number of days that particular task is expected to take. Project kickoff is expected to be October 2019. Each vertical line

represents 30 days or one month.

Major milestones for the Project with an anticipated start date of October 2019:

- Complete installation of SCADA QB Radios: Approximately April 30, 2020 (Project Day 210)
- Complete installation of VFD Motor Starter Units: Approximately March 31, 2021 (Project Day 540)
- Complete installation of SCADA Telemetry Control Systems: Approximately March 31, 2021 , (Project Day 540)

Table No. 3 Project Schedule



Upon approval, the DWP will kick off the project by issuing Request for Proposals or Bids on the VFD component of the project. This includes the variable frequency drive units, pressure transmitters, level displays and associated electronics. The DWP anticipates this work will be completed by an electrical contractor. Immediately following project kick off, DWP staff will order the two SCADA QB Base Station Bridge Radios and the five SCADA QB Radios. Within two months of kickoff, the telemetry vendor will be authorized to order all necessary supplies and materials. The telemetry contractor is a sole source for proprietary equipment; therefore no bid process is required. Once the VFDs and related components are in place, the telemetry equipment will be installed, allowing the DWP to control and monitor the wells.

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

Because there is no earth-disturbing work, and because all equipment will be installed on

existing infrastructure or facilities, no permits are required for this project.

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

The engineering or design work for this project will be prepared by DWP staff.

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

No new policies are required to implement this project. If any of the project component bids exceed \$25,000, those contracts will require approval by the DWP Board of Commissioners.

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

Because there is no earth-disturbing work, the DWP does not anticipate any environmental compliance costs.

Section 5.4 - E.1.4. Evaluation Criterion D— Nexus to Reclamation (10 points)

Up to ten points may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity.

The DWP has not specifically identified a nexus to a Reclamation project or activity. That being said, the objective of this funding opportunity is to invite water agencies like the DWP, to leverage their money and resources by cost sharing with the Reclamation on small-scale on-the-ground projects to conserve, better manage, and make more efficient use of water supplies. DWP is seeking this opportunity to modernize our infrastructure and increase water supply and reliability.

Section 5.5 - E.1.5. Evaluation Criterion E— Department of the Interior Priorities (10 points)

Up to ten points may be awarded based on the extent that the proposal demonstrates that the project supports the Department of Interior priorities.

1. *Creating a conservation stewardship legacy second only to Teddy Roosevelt*

- a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;

The City of Big Bear Lake and surrounding areas (Bear Valley Basin) are located over multiple smaller sub basins. These aquifers all have a maximum amount of water that can be yielded without over pumping. The volume of a safe yield can fluctuate drastically depending on population and weather. With the addition of the Variable Frequency Drive units and upgraded SCADA Telemetry, the DWP staff will now be able to safely regulate the production of each well based on running water levels and changes to the environment. The community had repeatedly experienced multiple drought years. However, according to The National Drought Mitigation

Center, San Bernardino County, California where the Bear Valley resides is currently not in a drought.

In May of 2016, California Governor Jerry Brown signed Executive Order B-37-16, “to establish long-term water conservation measures and improved planning for more frequent and severe droughts.” As part of that process urban water suppliers and rural communities are required to take proactive measures in response and readiness during drought conditions. The ability to more accurately control production during periods of drought will become increasingly vital in the future.

2. Modernizing our infrastructure

- a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure;

The existing wells were drilled in the 1970’s and 1980’s and still operate under decades old technology. The existing motors simply turn from off to on at full speed, with no regulation. If well pumps and motors run continuously, the safe yield is prone to drop as the aquifer becomes stressed. With modern technology, the DWP will have the ability to automatically ramp the well production up or down depending on the current needs of the system. The DWP’s current well production meters have limited ability to transfer production data. The new modern production meters will be equipped to communicate through the SCADA telemetry system and be capable of communicating with the pumping equipment so that it can increase or decrease the pumping rate, extending the life of the equipment.

PROJECT BUDGET

Section 1. Funding Plan and Letters of Commitment

The DWP will fund any costs for the Project above and beyond the amount funded by the federal government with revenue from water rates, and/or capital improvement reserves. The budget proposal does not include any project costs that have been or may be incurred prior to the award.

Table No. 4 Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCE	FUNDING AMOUNT
Non-Federal entities	
Recipient Capital Improvement Reserves	\$81,184.92
Non-Federal subtotal:	\$81,184.92
Other Federal entities	
None	-
Other Federal subtotal	-
Requested Reclamation Funding:	\$75,000.00

Total Project Funding	\$156,184.92
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Section 2. Budget Proposal

A budget proposal is provided in the following tables. Table No. 5 identifies both the DWP contributions and the U.S. Bureau of Reclamation grant funds required to implement the project.

Table No. 5 Budget Proposal

Budget item description	Computation		Quantity Type (hours/days)	Total Cost
	\$/unit	Quantity		
Salaries and wages				
				-
Fringe Benefits				
				-
Equipment				
				-
Supplies/materials				
SCADA QB Base Station	\$15,000.00	2	Total	\$30,000.00
Bridge Radios				
SCADA QB Radios	\$4,500.00	5	Total	\$22,500.00
Contractual/construction				
Variable Frequency Drive Electrician	Varies per pump	3	Total	\$69,330.00
Telemetry Contractor	Varies per pump	3	each	\$34,354.92
Third-Party In-Kind Contributions				
Other				
				-
Total Direct Costs				\$156,184.92
Indirect costs				
Type of rate	Percentage - %	\$ Base		-
Total Estimated Project Costs				\$156,184.92

Section 3. Budget Narrative

Salaries and Wages

The DWP is not including salaries or wages in the budget proposal. All DWP salary and wage costs will be paid by the DWP independent of the funding proposal.

Fringe Benefits

The DWP is not including fringe benefits in the budget proposal.

Travel

DWP is not requesting reimbursement for travel costs for this project.

Equipment

DWP is not requesting any equipment costs.

Materials and Supplies

Table No. 6 Materials and Supplies

2019 Small Scale Automation Grant	
Maple Well VFD and Pump Controls	\$25,525.00
Division #2 Well VFD and Pump Controls	\$23,841.00
Lakeplant #5 Well VFD and Pump Controls	\$19,964.00
Sub-Total	\$69,330.00
Maple Well SCADA Upgrade	\$13,614.96
Division #2 Well SCADA Upgrade	\$7,125.00
Lakeplant #5 Well SCADA Upgrade	\$13,614.96
Sub-Total	\$34,354.92
2 – SCADA QB Base Station Bridge Radios	\$30,000.00
5 – SCADA QB Radios	\$22,500.00
Sub-Total	\$52,500.00
GRAND TOTAL	\$156,184.92

The DWP has solicited and received informal estimates for all equipment listed.

Contractual

The telemetry contractor is a sole source for proprietary equipment; therefore no bid process is required. Electrical work on variable frequency drive motors is considered a specialty area. In the past, the DWP has received a limited response to VFD related electrical work following the Request for Proposals. The estimated amounts shown above are engineer's estimates created by contractors that have done similar work for the DWP in the past.

Third-Party In-Kind Contributions

DWP will not be accomplishing any of the work for the Project through third-party contributors.

Environmental and Regulatory Compliance Costs

Since no environmental review is required (no earth disturbing work to be completed) the DWP anticipates that there will be no cost to the USBR to conduct any environmental compliance activities.

Other Expenses

No other expenses are anticipated for this project.

Indirect Costs

No indirect cost reimbursement is being requested for this project.

Total Costs

The total estimated project cost is \$156,184.92. The requested Federal share is \$75,000; the total non-Federal share is \$81,184.92.

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.

- There is no earth-disturbing work related to the project. However, any minor impacts created during the Project will be mitigated with best management practices.

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?

- The DWP is not aware of any Federal threatened or endangered species, or designated critical habitat in the project area. It is not anticipated that any species would be negatively affected by any activities associated with the proposed project.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (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 inside the project boundaries that potentially fall under CWA jurisdiction as "waters of the United States."

When was the water delivery system constructed?

- The majority of DWP's water system was constructed during the 1940's, 50's, and 60's.

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

- The project will not result in any modifications or effects to individual features of an irrigation system.

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

- There are no buildings, structures, or features in the project area listed or eligible for listing on the National Register of Historic Places.

Are there any known archeological 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?

- No.

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

- No.

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.

REQUIRED PERMITS OR APPROVALS

There are no required permits anticipated for this project.

OFFICIAL RESOLUTION

A DWP Board resolution is attached (Appendix A).

UNIQUE ENTITY IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT

The DWP is registered with SAM, ASAP and Grants.gov. The DWP unique entity identifier has been provided in the SF-424. SAM registration will be maintained throughout the grant period.

Appendix A. Official Resolution

RESOLUTION NO. DWP 2019-05

**A RESOLUTION OF THE BOARD OF WATER AND POWER COMMISSIONERS OF
THE CITY OF BIG BEAR LAKE, DEPARTMENT OF WATER AND POWER,
COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA,
REGARDING PARTICIPATION IN FUNDING FOR THE BUREAU OF
RECLAMATION SMALL-SCALE WATER EFFICIENCY PROJECTS FOR
FISCAL YEAR 2019 GRANT PROGRAM
FUNDING OPPORTUNITY ANNOUNCEMENT NO. BOR-DO-19-F005**

WHEREAS, the City of Big Bear Lake was incorporated on November 28, 1980, and

WHEREAS, the electors of the City of Big Bear Lake did in 1985 adopt an Amendment to the City of Big Bear Lake Charter which created a Department of Water and Power; and

WHEREAS, the United States Department of Interior, Bureau of Reclamation, under its Small-Scale Water Efficiency Projects for Fiscal Year 2019 Grant Program, has made available to qualifying applicants grant funding on a matching fund basis, funds for Small-Scale Water Efficiency Projects; and

WHEREAS, the City of Big Bear Lake, Department of Water and Power has identified projects that exemplify the objectives of the Small-Scale Water Efficiency Projects for Fiscal Year 2019 Grant Program;

NOW, THEREFORE, BE IT RESOLVED that the Board of Water and Power Commissioners of the City of Big Bear Lake, Department of Water and Power does hereby adopt Resolution No. DWP 2019-XXX confirming the following:

1. The Board of Water and Power Commissioners of the City of Big Bear Lake, Department of Water and Power verify that the General Manager, Reginald A. Lamson has legal authority to enter into an agreement with Bureau of Reclamation.
2. The Board of Water and Power Commissioners of the City of Big Bear Lake, Department of Water and Power support the grant application.
3. The City of Big Bear Lake, Department of Water and Power is capable of providing the amount of funding and/or in-kind contributions specified in the funding plan.
4. That if selected for a Small-Scale Water Efficiency Projects Grant under the Bureau of Reclamation's Fiscal Year 2019 program, the City of Big Bear Lake, Department of Water and Power will negotiate and execute a Cooperative Agreement with the Bureau of Reclamation on/or prior to the established deadline, to fund a minimum of 50% of the projects costs and will provide documentation showing the 50% matching funds are not funded by a Federal Agency.

PASSED, APPROVED, and ADOPTED this 26th day of March 2019.

AYES: *Hjoth, Lee, Tarras*
NOES:
ABSTAIN:
ABSENT:



Bob Tarras, Chair
DWP Board of Commissioners

ATTEST:



Leeanne Eagleson, Board Secretary
DWP Board of Commissioners