

Upper Feather River IRWM

Proposition 1 IRWM Round 1 DAC Implementation / Urban Multi-Benefit Drought Relief Program

DWR Grant Agreement No. 4600013818

POST PERFORMANCE REPORT

Grantee/Submitted by:	Plumas County		
Implementing Agency:	Sierraville Public Utilities District (Sierraville PUD)		
Agreement No.:	4600013818	Funding Grant Source/Round:	DWR Prop 1 / R1, UMBDRP
Project Title:	Alternative Water Source Development		
Project Location:	Latitude 39.56185000	Longitude -120.371483	
Project Completion Date:	12/31/2023	Date of Report:	12/17/2024
Reporting Period:	2024	Report No.	1
Prepared by:	Paul Rose, Rose Water Systems, Contract Project Manager for Sierraville PUD		

1. Post-Performance Reports Schedule:

PPR 1	PPR 2	PPR 3
December 2024	December 2025	December 2026

2. Brief project description (per the Agreement):

The project consists of the demolition of the existing booster building and construction of a new fire-resistant booster building, booster pumps, control center, new Supervisory Control and Data Acquisition (SCADA) telemetry system, onsite power generation, and drainage and site improvements. Work will be performed in Sierraville at the current spring and booster site. The project will modernize and improve pumping reliability, provide power generation during Public Safety Power Outages, and increase firefighting capabilities. This will result in increased reliability for the approximately 55 acre-feet per year (AFY) water supply and greenhouse gas savings of 2 metric tons of carbon per year.

3. List the project benefits (as claimed in Grant application vs Actuals):

Project Benefit	Benefit Type	Benefit Value Claimed/Actual	Benefit Unit
Primary	Support uninterrupted water supply to community of Sierraville	24/7/365 pumping operation	N/A
Secondary	Reliable fire and emergency (PSPS) water supply	24/7/365 pumping operation	N/A

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4. Explain any reasons/causes for differences between the claimed versus actual project benefits.

The project has met expected benefits as a stable, reliable, and fire safe facility sufficiently sized to meet pumping, control, and monitoring needs not only for the current distribution of water supply, but the new well that will be coming online in late 2025. The project met its objectives to replace an aging, wood-framed building susceptible to wildfires that housed the Sierraville PUD's pumping station which was, and continues to be, the sole production and pumping station supplying storage tanks that feed the Town of Sierraville's distribution system. The new building is a 900% increase in square footage from the old building and, relative to the increased size, has proven to be a marked increase in energy efficiency. The new pumping facility saw a 30% increase in water production in 2024 from the previous year and, even with the increase in water production and increase in heated space, the corresponding energy consumption was only 38%, demonstrating a more efficient system overall.

5. Summary of any additional costs and/or benefits deriving from the project since its completion, if applicable.

The overall benefit of this project to Sierraville PUD and its customers is numerous. The project greatly enhances the District's ability to operate the sole production/pumping facility during all seasons, as well as during extreme environmental conditions caused by climate change. The facility also supports the future addition of controls and treatment facilities for a groundwater well construction project funded by the State's Small Community Drought Relief Program grant, scheduled for construction and completion in 2025.

The following are some of the specific additional benefits derived from the project's completion:

1. Fire resistant structure:

- a. The project is located on United States Forest Service (USFS) land within the Tahoe National Forest, therefore, exposed to the threat of wildland fires. The design and construction of a fire-resistant building improves the chances of continued operation during a wildland fire event.

2. 50 kilowatt (kW) propane fueled generator and automatic transfer switch:

- a. Greatly improves facility reliability by providing uninterrupted electrical power requirements during power interruptions due to Public Safety Power Shutoffs (PSPS) events, wildland fires, and winter related outages.
- b. Allows the structure to maintain interior temperature in the winter to prevent freezing pipes during winter related power outages.
- c. Prevents the need for increased operations costs caused by the need to rent, transport, install, and maintain a gasoline powered onsite generator during power outages.

3. Installation of an underground 1,000-gallon propane fuel tank:

- a. Underground installation protects the storage tank from wildland fires, providing enough reliable energy to drive the generator for extended periods of time.

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4. Dual variable-speed booster pumps:
 - a. The booster station only needs one pump to provide water from the spring to the storage tank. The addition of a second pump allows redundancy in the event of a pump or motor failure.
 - b. The efficiency of the variable speeds drive allows energy savings through its design, and by allowing pumping at lower volumes thus reducing energy demand from the motors.
5. Dedicated chemical room:
 - a. Allows the District to meet United States Department of Labor, Occupational Safety and Health Administration (OSHA) requirements for chemical handling.
 - b. Keeps corrosive chemicals and fumes away from electrical and mechanical equipment.
 - c. Proper ventilation enhances safety for operators.
6. Piping for future integration of a groundwater well:
 - a. Design includes space for future treatment facilities, as necessary.
 - b. Building provides space for pump, production meter, and SCADA control.
7. Reliability of the facility during limited ingress and egress:
 - a. The facility is located 0.7 miles from the nearest paved road, accessible by a USFS unmaintained dirt road. During heavy snow periods access is limited for periods of time. Because of the increased overall reliability of system components, physical access during times of heavy winter snow typically do not rise to the level of immediate response by the operator.
8. Installation of an in-building pressurized water system:
 - a. Allows washdown of concrete floor to maintain sanitary conditions in the pumphouse.
 - b. Provides water for operation of required eyewash stations.
9. Facilitates the future operation of a groundwater well:
 - a. Using groundwater to augment the primary water source, Railroad Springs, allows for enhanced downstream surface water availability in Sierra Valley and into the Upper Feather River watershed. The facility was designed to accommodate a future groundwater well source.
6. **Any additional information relevant to or generated by the continued operation of the project.**

The District anticipates the facility's lifespan to be at least fifty years or greater, allowing the District to incorporate into its future rate structures the replacement of the asset, allowing time to set aside the needed replacement funds over several decades rather than within a short period, and providing ratepayers the benefit of prolonged financing strategies.