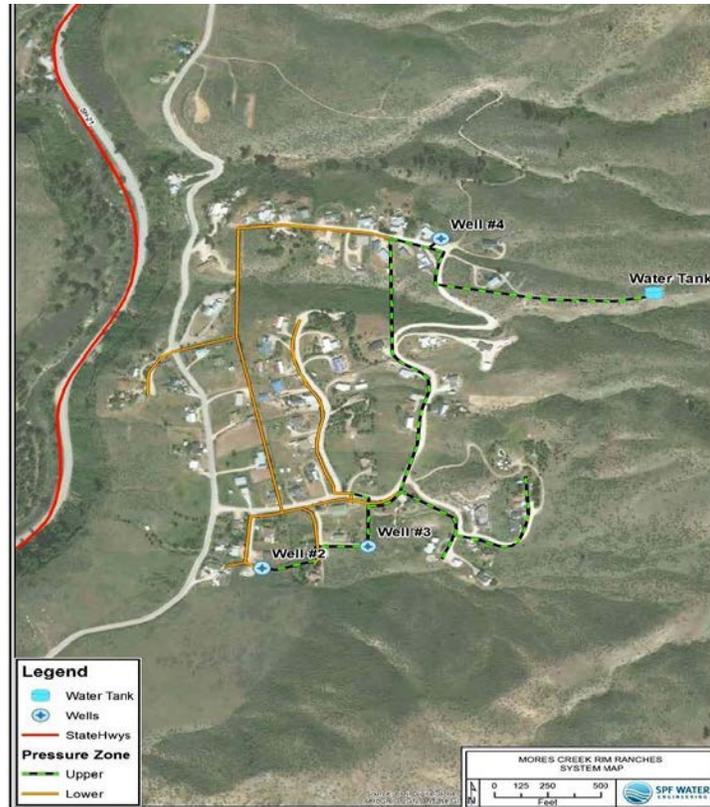


Drinking Water State Revolving Fund Green Project Reserve  
- Preliminary -



**Mores Creek Water District Drinking Water Project**  
**SRF Loan #DW1901 (pop. 175)**  
**\$985,000**

**Preliminary Green Project Reserve Justification<sup>1</sup>**

**Business Case GPR Documentation**

1. INSTALLS INFILTRATION GALLERY AND BOOSTER STATION WITH ENERGY-EFFICIENT PUMPS. Business Case GPR per 3.5-1: *Energy efficient ...new pumping systems...* (\$xxxx).

**Categorical GPR**

2. INSTALLS PRESSURE REDUCING VALVES (Water Efficiency). Categorical GPR per 2.2-12: *Installing water efficient devices.* (\$xxxx).
3. INSTALLS WATER METERS (Water Efficiency). Categorical GPR per 2.2-3a: *...replacing existing malfunctioning water meters ...* (\$xxxx).

<sup>1</sup> All data and information to be updated by loan recipient in the GPR Technical Memorandum due at the time of design submittal  
State of Idaho SRF Loan Program

# 1. New Premium Energy-efficient Pumps<sup>2</sup> (PRELIMINARY)

## Summary

- A total of 4 new premium energy-efficient pumps will be installed.
- Loan amount = \$985,000
- Energy savings (green) portion of loan = **xx%** (**\$xxxx**) (Preliminary cost)
- Simple pay-back period = **yy** years

## Background

- The Mores Creek Rim Ranches Water District (District) supplies municipal drinking water to 67 Equivalent Dwelling Units within the Mores Creek Rim Ranches Subdivision.
- Over its history, the District has battled elevated arsenic levels and diminishing supplies. Currently, the three operating wells run on an alternating schedule to prevent any one well from running dry.
- The District has expressed a desire to augment their available supply while eliminating the need for POU treatment.
- A new infiltration gallery beneath the creek will be added to the system. The gallery will be equipped with 2 premium submersible pumps to pump to the treatment plant.
- A booster pump station at the treatment plant will also be equipped with 2 premium pumps.

## Calculated Cost Effectiveness of Improvements<sup>3</sup>

**Motors:** The Baseline Standard Practice for comparison is a standard EPact motor<sup>4</sup>:

### (i) Infiltration Gallery Submersible Pumps

- The new motors are premium energy-efficient **xx-HP** models; the motor efficiency will be at least **95.4%**<sup>5</sup>.
- A similar EPAct motor would have a motor efficiency of approximately **93.5%**<sup>6</sup>.
- Energy savings of the Premium Energy-Efficient motor over the EPAct motor = **3,158 kWh/yr.** = **\$315.80/yr**<sup>3</sup>.
- EPAct motor cost = **\$7,300**; Premium motor cost = **\$8,700**. Simple pay-back period for the cost difference of the Premium motor over the EPAct motor = **4.4 years**<sup>3</sup>.

### (ii) Booster Pumps

- The new motors are premium energy-efficient **yy-HP** models; the motor efficiency will be at least **95.4%**<sup>4</sup>.
- A similar EPAct motor would have a motor efficiency of approximately **94.1%**<sup>5</sup>.
- Energy savings of the Premium Energy-Efficient motor over the EPAct motor = **3,803 kWh/yr.** = **\$380.30/yr**<sup>3</sup>.
- EPAct motor cost = **\$5,800**; Premium motor cost = **\$6,900**. Simple pay-back period for the cost difference of the Premium motor over the EPAct motor = **2.9 years**<sup>3</sup>.

<sup>2</sup> 6-30-2019 Email: R Manning P.E., SPF Engineering to K McNeill, IDEQ SRF

<sup>3</sup> WEG Electric Motor Payback Tool, energy cost @ **\$0.10/kWh**.

<sup>4</sup> NYS Energy Research and Development Authority, Energy Evaluation Memorandum, Village of Greenport WWTP Upgrade 8-2009.

<sup>5</sup> NEMA Table 12-12 Full Load Efficiencies for 60 HZ NEMA PREMIUM Efficiency Electric Motors

<sup>6</sup> NEMA MG-1 Table 12-11 Full Load Efficiencies of EPAct Efficient Electric Motors

## Conclusion

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- **GRP Costs Identified :**  
Pumps = \$77,300  
**Total = \$77,300**
- **GPR Justification:** The Pumps are Business Case GPR-eligible (Energy Efficiency) per Section 3.5-1: *Energy efficient retrofits, upgrades, or new pumping systems and treatment processes.*

## 2. PRESSURE SUSTAINING VALVES<sup>7</sup> (PRELIMINARY)

### Summary

- Pressure Reducing Valves will be installed to ensure a preset pressure in the system is maintained.
- Loan amount = \$985,000
- GPR-eligible = \$xxxx (y%) (Preliminary)

### Background

- The Pressure Reducing Valve (PRV) on Paloma Dr. separating the upper and lower pressure zones is oversized and located in a small vault making servicing difficult.
- The water pressure on Rimrock Way is well above 80 psi, violating current DEQ standards.

### Results

- The PRV and vault on Paloma Drive will be upgraded to provide improved operation and access.
- A PRV should be installed in the lower zone to serve Rimrock Way to reduce pressure at all service connections to less than 80 psi to meet current DEQ standards.



### Conclusion

- Pressure Regulating valve (PRV) installation = \$xxxxx
- The PRVs are categorically GPR-eligible as they qualify as water efficient devices.
- **GRP Costs Identified**  
PRVs installed = \$zz ea x 2 = **Total** = \$xxxx (Preliminary)
- **GPR Justification:** The PRVs are Categorically GPR eligible (Water Efficiency) per Section 2.2-12<sup>8</sup>: *Installing water efficient devices...*

<sup>7</sup> Mores Creek SRF Application

<sup>8</sup> Attachment 2. April 21, 2011 EPA Guidance for Determining Project Eligibility

### 3. EXISTING WATER METER REPLACEMENT (PRELIMINARY)

#### Summary

- Replacing old and malfunctioning water meters.
- Loan amount = \$985,000
- GPR portion of loan = xx% (\$yyyyy) (Preliminary cost estimate)

#### Background

- The District's existing 75 water meters are over 20 years old and at the end of their service life. Meter accuracy has diminished over time, resulting in significant under accounting of water usage.
- The existing water meters are approximately 15 years old, are not radio-read, are malfunctioning, and not reliable.
- Increased water loss, due to leaks and inaccurate meter readings, are partly attributed to the old meters.

#### Results

- The District's existing 75 water meters will be replaced with AMR meters.



#### Other Benefits

- Replacing the old meters will increase water efficiency by decreasing the amount of water lost and by providing more accurate water-use information to customers and the system.

#### Conclusion

- Accurate metering of water consumption is an important conservation measure because providing more accurate water bills sends a strong price signal to customers and will result in more efficient consumption.
- Water leakage and inaccuracy increases with water meter age; therefore, an investment in water meters today will lead to additional water and dollar savings over time. Also, the water savings from the meter replacement will extend the life of the water supply and delay capital expansion projects.
- **GPR Costs:** Replacing malfunctioning water meters  
75 meters = \$80,000 (Preliminary)
- **GPR Justification:**
  - The project is Categorical GPR-eligible (Water Efficiency) per Section 2.2-3a: *replacing existing malfunctioning water meters...*<sup>9</sup>.

<sup>9</sup> 2010 EPA Guidelines for Determining Project GPR-Eligibility. Attachment 2.