

Drinking Water State Revolving Fund Green Project Reserve
- Interim GPR –



City of Preston FY18 Water System Project
SRF Loan #DW9921A (pop. 5,354)
\$1,046,577

Green Project Reserve Technical Memorandum

Business Case GPR Documentation

1. REPLACEMENT OF LEAKING DUCTILE IRON TRANSMISSION LINE WITH C-905 PVC PIPING (Water Efficiency). Business Case GPR per the criteria requirements 2.4-1...*reducing water consumption*; per 2.4-3: *Efficient water use*; also per 2.4-4: *Proper water infrastructure management should address where water losses could be occurring in the system and fix or avert them.* (\$1,021,906).

Categorical GPR Documentation

2. INSTALLS PRESSURE SUSTAINING VALVE (Water Efficiency). Categorical GPR per 2.2-12: *Installing water efficient devices.* (\$24,671).

1. New Water Transmission Lines

Summary

- Existing leaking transmission line will be replaced to conserve water and to increase system reliability.
- Loan amount = \$1,046,577
- GPR-eligible portion of loan = 98% (\$1,021,906) (Bid Cost basis)

Background

- The water system is experiencing significant water losses and fluctuating pressure events due to aging, deteriorating transmission lines.
- As part of the Facility Plan¹, various distribution alternatives were evaluated to identify potential pipeline rehabilitation/replacement projects. A priority alternative selected was the provision of new transmission lines.
- This project will replace 7720 feet of existing 20" Ductile Iron transmission line with 5113 feet of new 20" inch C-905 PVC pipe, and 4227 feet of 24" C-905 PVC pipe.

Water Savings²

- By installing 7,720 feet of new transmission line, the City anticipates conserving water. The old DIP currently leaks at a rate of 250 to 300gpm.
- The cost of culinary water for the City of Preston is \$.08 per gallon³. If the replacement of leaking transmission lines eliminates 250gpm of losses, the value of recovered water = \$8,640 per month.
- For the period an estimated annual cost savings of at least \$103,680 would be realized by the project. With this annual cost savings, the payback period for the project would be 10.1 years, well within the 40-year life of the new PVC transmission lines.

Conclusion

- The project has an attractive payback period, well within the life of the installed components and is GPR-eligible by a Business Case.
- **GPR Costs:** 7,720-foot transmission line = \$1,388,041 (multi-agency funding)
GPR-eligible Costs \$1,021,906 (SRF Bid Cost basis)
- **GPR Justification:** The project is Business Case GPR-eligible (Water Efficient) per 2.4-1 *...reducing water consumption*; per 2.4-3: *Efficient water use*; also per 2.4-4: *Proper water infrastructure management should address where water losses could be occurring in the system and fix or avert them.*

¹ Interim Drinking Water Facilities Planning Study, 2017

² Per data furnished by the City by email June 4, and June 6, 2018

³ \$40 for 50,000 gallon/month

2. PRESSURE SUSTAINING VALVE

Summary

- A Pressure Sustaining Valve will be installed to ensure a preset pressure in the system is maintained.
- Loan amount = \$1046,577
- GPR-eligible = 2% (\$24,671) (Bid Cost basis)

Background

- Installing a 10” pressure sustaining valve at the water tank will ensure a steady reliable pressure is maintained in supplied water.

Results

- Installing pressure-sustaining valve (PRV) – is the most important feature for controlling the pressure fluctuations in a system, improving reliability and reducing inefficiencies.

Conclusion

- Pressure Regulating valve (PRV) installation = \$24,671
- The PRV is categorically GPR-eligible as it is a water efficient device.
- **GRP Costs Identified** :
PRV installed = \$24,671 (Bid Cost basis)
- **GPR Justification:** The PRV is Categorically GPR-eligible (Water Efficiency) per Section 2.2-12⁴: *Installing water efficient devices...*



⁴ Attachment 2. April 21, 2011 EPA Guidance for Determining Project Eligibility