

Green Business Case

City of White Sulphur Springs, Montana

Water System Improvements Project

Green Reserve Project Description

The project being approved can be generally described as the installation of approximately 900 feet of 10-inch PVC water distribution main and the installation of a 540,000 gallon prestressed concrete water tank with an associated chlorine gas disinfection building, controls, telemetry and all associated site work. The water main replacement work will include all valves, fire hydrants, fittings, service lines, service connections, appurtenances, curbs, gutters and asphalt replacement. The project also included minor improvements to the existing water disinfection and control systems.

Documents submitted and reviewed by the State:

The city's 2010 Water System Preliminary Engineering Report (PER), prepared by Great West Engineering, recommended improvements with estimated capital costs of approximately \$2.4 million for water system improvements. The recommended improvements were selected based on the need to reduce water loss and improve the overall operation of the system. The city of White Sulphur Springs has prioritized these recommendations and selected improvements based on system needs and available funding. The selected work will have a capital cost of approximately \$2 million dollars. The top priorities included replacement of the leaking water storage tank, replacement of approximately 900 feet of aging water main and upgrading the systems disinfection and control systems.

List of eligible Green Project Reserve components:

1. Identify the component(s) - See project description
2. Total project cost = \$2,073,000
3. Total 2010 DWSRF Loan/Grant Request = \$2,073,000
4. Total project cost eligible for Green Project Reserve = \$1,865,700 (90%)

Green Reserve Project – Categorical Project:

This project is not considered categorically green as defined by the USEPA guidance documents.

Green Reserve Project – Business Case Evaluation:

“As stated in the USEPA March 2, 2009 Memorandum, for traditional projects that are not categorically green, for the project, or components of the project, to be counted towards the 20% requirement, the State project files must contain documentation that a clear business case for the project (or portion) investment includes achievement of identifiable and substantial benefits that qualify as Green Project benefits. The documentation should reference to a preliminary engineering or other planning document that makes clear that the basis upon which the project (or portion) was undertaken included identifiable and substantial benefits qualifying for the Green Project Reserve. The March 12, 2009 USEPA webcast slides 20 and 21 state that two components, the technical component and financial component, must be provided in the Business Case.”

Green Project Reserve Type:

This project fits in the water efficiency and energy efficiency type.

Technical Component Evaluation:

The existing White Sulphur Springs water system consists of a filtered surface water source, two wells, 450,000 gallon concrete storage tank and transmission/distribution system. There are approximately 900 customer accounts including both residential and commercial services.

According to the 2010 PER, the existing water reservoir, constructed in 1946, is in serious need of replacement. An underwater inspection completed in 2008 showed the tank as failing structurally with exposed rebar in both floors and walls. The roof is about to collapse and it is not safe for maintenance personnel to climb on the structure. In 2011 the city performed a leak test on the tank. The leak test showed that tank leakage is approximately 43,300 gallons per day. This lost water would account for about 15 percent of the total annual water production of the White Sulphur Springs system.

According to the 2010 PER, a section of steel water main on Main Street has broken several times and needs to be replaced. The last break in 2007 resulted in flooded houses, schools and hospital and government offices being closed for two days and a boil order issued for eight days. Aging transmission and distribution mains within the water system are a potential concern with respect to lost water. Reducing the leakage within the water system will conserve water and reduce pumping costs.

Financial Component Evaluation:

The White Sulphur Springs water system relies, in part, on two groundwater wells to provide water to the residence. Decreasing the “lost water” documented in the PER will reduce the electrical pumping power consumption and its associated cost. Reducing the operation and maintenance costs for the tank and section of pipe within Main Street would also be expected.

A 2011 tank leak test shows that replacing the existing concrete tank could save nearly 16 million gallons of water per year. Based on the 2009 power consumption, this would result in a saving of 48,464 kWh or approximately \$5,320 per year in power costs.

Replacing the 900 foot section of aging pipe in Main Street would be expected to further reduce leakage and reduce the serious potential for another catastrophic failure similar to that in 2007. The 2007 break has significant financial impact on the city, residences and businesses.

Green Reserve Project – Evaluation Conclusion:

The need to replace the aging and leaking water storage tank and water mains was the main drivers behind this project. Reducing the overall system leakage will reduce the energy required to pump and treat water for the White Sulphur Springs system. However, the proposed project will also address the need to install a new chlorine disinfection building adjacent to the new water storage tank as well as the need to upgrade the chlorine disinfection equipment at the two existing wells. The system

telemetry and controls will also be improved. Based on these additional needs, the SRF program will consider only 90% of the total project eligibly for the “green” component.