

## **Green Business Case**

### **City of Laurel, Montana – 2010 Water Main Replacement Project**

#### **Green Reserve Project Description**

The project consists of replacement of approximately 1,900 lineal feet of existing water main with new PVC water main. Five new fire hydrants and fourteen new gate valves will be installed. Restoration or replacement of pavement, sidewalk, landscaping, and curb and gutter disturbed during construction are included in the project scope.

The 8-inch water main replacement is along Seventh Street between Third Avenue and Fifth Avenue, and along Third Avenue between Seventh Street and Ninth Street. There have been a large number of recurring leaks in these four blocks of water main due to the brittleness of the old cast iron pipe. Because of these leaks and the undersized main on Third Avenue, adequate flow and pressure have not been available to this section of the City. The proposed improvements will correct this problem.

#### **Documents submitted and reviewed by the State:**

1. City of Laurel, Montana, Water Facilities Plan, August 2007, prepared by Morrison-Maierle, Inc., Billings, Montana.
2. Water System Preliminary Engineering Report, 2008 Amendment, April 2008, prepared by Great West Engineering, Billings, Montana.

#### **List of eligible Green Project Reserve components:**

1. Identify the component(s) - See project description
2. Total project cost = \$376,000
3. Total Loan/Grant Request = \$376,000
4. Total project cost eligible for Green Project Reserve = \$376,000 (100%)

#### **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:**

There are about three breaks each month in the four blocks of water main around Seventh Street and Third Avenue. Each break averages a loss of about 20,000 gallons of water before the line can be isolated. With three breaks a month year-round, this is an annual loss of 720,000 gallons.

**Financial Component Evaluation:**

The financial component can be separated into the cost of the water lost and the cost to repair the water main. The cost of water in Laurel is \$1.80 per 1,000 gallons. With 720,000 gallons lost annually in this four-block area, the cost of water lost is approximately \$1,300. It takes three City workers about eight hours to dig, fix, and backfill a single leak. The City has spent about \$8,400 in wages and materials this year to fix the recurring leaks in these four blocks. This is considered to be the average annual water main repair cost for this small project area. Adding the annual cost of the lost water to the annual cost of the many repairs results in an annual total cost of approximately \$9,700 attributable to the leaking cast iron mains.

**Green Reserve Project – Evaluation Conclusion:**

The need to replace aging and leaking water mains in the vicinity of Seventh Street and Third Avenue that were affecting flow and pressure at the nearby Laurel Health and Rehabilitation Center was the driver behind this project. Reducing the leakage within the water distribution system also reduces the energy required to pump and treat water within the City of Laurel.

This project is funded completely with 2010 DWSRF funds and consists solely of the replacement of leaking water mains. Therefore, all \$376,000 of the DWSRF money allocated towards this project is considered to be green reserve.