



# **MISSOURI DEPARTMENT OF NATURAL RESOURCES**

Warsaw

Drinking Water State Revolving Fund Green Project Reserve  
Business Case

State Fiscal Year 2012 Intended Use Plan

Project Number DW291293-01

Loan Date: November 28, 2012

**Green Estimated Costs: \$1,478,000**

# Water System Improvements for Warsaw, Missouri

## Business Case

### Summary

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- The project provides for the replacement of existing distribution lines with the following: 145 feet of four-inch (4") diameter polyvinyl chloride (PVC) pipe; 212 feet of six-inch (6") diameter PVC pipe; and 18,983 feet of eight-inch (8") diameter PVC pipe. The addition and replacement of the water mains for this project is to provide looping, to address system failures, such as water main breaks, and provide the expected capacity due to the forecasted growth.
- SRF Assistance Amount: \$1,478,000
  - pipe replacement = \$1,478,000

### Background

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- The water source for the city's water system comes from two existing wells located at the south and north sides of the city with a total pumping capacity of 2.02 MGD.
- The distribution system consists of approximately 25.8 miles of water mains ranging in size from three (3) to eight (8) inches in diameter. The distribution system also includes an existing 500,000 gallon standpipe and a 200,000 gallon elevated storage tank for a total system storage capacity of 700,000 gallons.
- The city's drinking water system currently serves approximately 1,140 meters, with an average daily water demand of 209,339 gallons per day (gpd) and a peak day demand of approximately 314,009 gpd. Recent history indicates that the water demand for the city has been steadily increasing. The future estimated connections to be served for the year 2030 will be approximately 1,622 with an average daily demand of approximately 281,538 gpd and 422,307 gpd for peak daily demand.

### Results/Conclusion

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- Replacing the old, leaking water mains will increase water efficiency by decreasing the amount of water lost.
- Benefits with water main replacement include reductions in unnecessary pumping and operation and maintenance expenditures, and eliminating potential health hazards associated with waterborne pathogens entering the water distribution system.