MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Neosho

Drinking Water State Revolving Fund Green Project Reserve
Business Case

State Fiscal Year 2011 Intended Use Plan

Project Number DW291308-01

Loan Date: December 19, 2011

Green Estimated Costs: $2,030,200

Water System Improvements for Neosho, Missouri
Business Case

Summary

- The purpose of the project is to make improvements to the existing water treatment plant including: upgrading the plant's security features; upgrading the monitoring and control equipment; rehabilitation of the rapid mix, sedimentation, and filter units; adding additional clearwell capacity; replacing the backwash and high service pumps; upgrading the chemical feed room; the replacement of approximately 110 feet of six-inch (6") water main, 14,953 feet of eight-inch (8") water main, 1,763 feet of twelve-inch (12") water main, 13,891 feet of sixteen-inch (16") water main; and all the necessary appurtenances to complete the project and have a usable system. 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: $9,425,000.00
    - pipe replacement = $2,030,200 = 21.5%

Background

- The water source for the city's water system comes from surface water (Shoal Creek). The city has a surface water treatment plant with a capacity of 5 MGD. The city also has two deep bedrock wells with a total pumping capacity of approximately 1.19 MGD.
- The distribution system consists of approximately 128 miles of water lines ranging in size from two to 20-inches in diameter. The distribution system also includes 4 storage tanks and one reservoir with a total capacity of 4.23 million gallons.
- The city's drinking water system currently serves a population of approximately 11,791, with an average daily water demand of 3.69 million gallons per day (mgd) and a peak day demand of approximately 6.45 mgd. Recent history indicates that the water demand for the city has been steadily increasing. The future estimated population to be served for the year 2030 will be approximately 14,850 with an average daily demand of approximately 4.64 mgd and 8.12 mgd for peak daily demand.

Results/Conclusion

- Replacing the old, leaking water mains will increase water efficiency by decreasing the amount of water lost.
- Additional benefits from 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.