



MISSOURI DEPARTMENT OF NATURAL RESOURCES

**Boone County Regional Sewer District
Rayfield Subdivision Sewer Improvements**

**Clean Water State Revolving Fund
Green Project Reserve
Business Case**

**State Fiscal Year 2012 Intended Use Plan
Project Number C295375-14**

**Loan Closing Date: May 9, 2012
Loan Amount: \$1,360,000
Green Amount: \$603,703**

I. REGIONALIZATION

Summary

- Duplex lift station with two 15 HP pumps and forcemain to replace and abandon an existing influent lift station and decommission the Boone County Regional Sewer District (BCRSD), Rayfield Subdivision Wastewater Treatment Facility (WWTF).
- Total Loan amount = \$1,360,000
- Estimated energy efficient (green) portion of loan = 44.4% (\$603,703)

Background

The current Missouri State Operating Permit (MSOP) No. MO-0099261 for the BCRSD, Rayfield Subdivision WWTF has a compliance schedule to meet effluent fecal coliform limits by September 13, 2011. The BCRSD, Rayfield Subdivision WWTF currently consists of an influent pump station and a three-cell lagoon with floating aerators in the primary cell and does not have a means of disinfection.

Energy Efficiency Justification

The new lift station and forcemain will replace the existing influent lift station and allow the BCRSD, Rayfield Subdivision WWTF to be closed and abandoned. The wastewater will be pumped and ultimately discharge to the Clearview Acres Subdivision, MSOP No. MO-0085944,. The BCRSD, Clearview Acres Subdivision has a design flow of 228,300 gallons per day with adequate capacity to handle the flows from the existing BCRSD, Rayfield Subdivision WWTF. The flows from the BCRSD, Rayfield Subdivision WWTF make up approximately 3.3% of the flows going to the BCRSD, Clearview Acres Subdivision; therefore, any increased energy usage to treat the additional flow would be minimal. The new lift station will require more energy than the existing influent lift station due to the distance wastewater will need to be pumped. The reduction in energy usage by the removal of the existing three-cell lagoon with continuously operating floating aerators and the existing influent lift station is substantially greater than the increased energy usage of the new lift station and the increase energy usage at the BCRSD, Clearview Acres Subdivision.

Conclusion

- The reduction in energy usage by the closure of the existing three-cell lagoon that used floating aerators, which operated continuously, and the abandonment of the existing influent lift station is substantially greater than the increased energy usage of the new lift station and at the BCRSD, Clearview Acres Subdivision.
- Business Case GPR-eligible per Section 3.5-1, “*POTW projects or unit process projects that achieve less than a 20% energy efficiency improvement*”.

References

- Attachment 2. 2012 Clean Water State Revolving Fund 10% Green Project Reserve: Guidance for Determining Project Eligibility.
- Shafer, Kline & Warren, Inc. facility plan “Rayfield Lagoon Facility Plan” for the Boone County Regional Sewer District sealed October 12, 2010.
- Shafer, Kline & Warren, Inc. Plans and Specifications for the Boone County Regional Sewer District sealed November 11, 2011.