SANITARY SEWER REHABILITATION

Summary

- The Bremen Project is based on a Guaranteed Energy Savings Performance Contract. The Project includes improvements to the WWTP along with sanitary sewer rehabilitation. The improvements at the WWTP were considered under a separate Business Case which showed that the WWTP portion of the project was categorical (in excess of 20%) for energy reduction. This Business Case addresses the sanitary sewer rehabilitation portion of the project only.

- The sanitary sewer rehabilitation improvements include lining of existing sanitary sewers using the CIPP method and manhole rehabilitation.

- Guaranteed Energy Savings Performance Contract  Price: $2,086,000. The total GPR eligible amount for the entire project based on the Contract price excluding contingencies ($99,000) and grit chamber concrete repair ($9,000): $1,978,000.

- The total estimated Planning Design Cost associated with the entire project based on Engineering Service Agreement that maybe qualified toward GPR: $ 67,450.

- Estimated Energy Efficiency (GPR) portion of the Project are based on the PER Cost Estimates for the purpose of the Business Case:
  1) Sanitary sewer rehabilitation GPR portion Including construction, planning and design totals $251,200; and
  2) The combined WWTP/sanitary sewer rehabilitation project, GPR portion is $1,787,000 base on the PER estimated amount.

Background

- The presence of infiltration/inflow in the sanitary sewer system results in higher energy costs associated with flow pumpage and wastewater treatment.

- Of the 1.35 MGD flow to the WWTP, approximately 40% of that flow or 540,000 gpd is estimated to be associated with infiltration. The estimated reduction of infiltration with the proposed improvements is 25% or 135,000 gallons.

Results

- The cost savings from not having to treat the estimated infiltration that would be removed is $22,745 per year. (0.135 MGD x 365 days x $461.59/MG – treatment cost)³

- A portion of the wastewater treatment cost is related to energy consumption.
• The project is cost effective since the present worth of O & M savings is greater than the capital cost for the improvements.

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<th>Cost Effective Analysis</th>
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<td>Capital Cost of Improvements</td>
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<td>$251,200</td>
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• The payback period of the sanitary sewer rehabilitation portion of the project is 11 years which is less than the useful life of the sewer rehabilitation.

**Conclusion**

• The proposed improvements will result in energy cost savings associated with wastewater treatment.

• The proposed project is cost effective.

• The proposed project has less than an 11 year payback period. The improvements to the collection system have an expected life of over 11 years.

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1 Chapter 9- Green Project Reserve, Preliminary Engineering Report for Bremen Wastewater Treatment Plant and Collection System Rehabilitation/Improvements