



State Revolving Fund Loan Program
an Indiana Finance Authority Environmental Program

100 North Senate Avenue, Room 1275
Indianapolis, Indiana 46204
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MEMORANDUM

TO: Project File, Town of North Webster, Wastewater Improvements Project, SRF Project # WW14 26 43 01

FROM: Jack Fisher

DATE: December 17, 2015

RE: Green Project Reserve (GPR), Business Case

Summary:

- The project includes an increase in capacity and improvements to the wastewater treatment plant and the collection system. Due to age and condition, a number of the mechanical components at the plant are in need of replacement and rehabilitation. The collection system contains 25 lift stations where most are in need of upgrades or replacements. Several lines also need to be increased because they are undersized for the existing volume of flow. In addition, an unsewered community (i.e., Knapp Lake) plans to connect to the system for treatment.
- WWTP improvements include: installing an additional final clarifier; rehabilitating an existing clarifier; installing fine bubble aeration system; installing more efficient blowers with variable frequency drives (VFDs); constructing a flow splitter for the clarifiers; new high efficient return activated sludge (RAS)/waste activated sludge (WAS) pumps with VFDs; and a new chemical feed system.
- Collection system work includes: increasing the capacity of the main lift station by replacing the pumps, and VFDs; replacing sewers and force mains as well as increasing sizes mainly at Lift Station #10; installing a second pump at three submersible pump lift stations; replacing four lift stations; making improvements to the two vacuum stations; rehabilitating three lift stations; and adding alarm dialers to all of the lift stations.
- The estimated Total Project Cost is \$3,243,415.
- Estimated State Revolving Fund Loan Amount is \$3,243,415.
- Estimated GPR portion cost of loan associated with the WWTP improvements is **\$223,000** for construction and **\$25,759** for planning and design costs for a total cost of **\$248,759**. This represents 7.6 % of the estimated loan amount. These GPR components fall under the category of **Energy Efficiency**.



Conclusions

- By installing high efficiency pumps and motors and equipping them with VFDs, the system will realize an average reduction of 44.4% in energy costs and 56.2% in energy savings as compared to pumps and motors with standard constant speed units. The annual savings are estimated at \$3,316.
- Fine bubble diffusion will provide more efficient power consumption. This could provide an annual savings of \$67,605 and a 70% reduction of energy.
- The estimated annual savings for the above GPR components will produce a total cost of \$70,921.