



State Revolving Fund Loan Program
an Indiana Finance Authority Environmental Program

100 North Senate Avenue, Room 1275
Indianapolis, Indiana 46204
www.srf.in.gov

MEMORANDUM

TO: Project File, Tipton Municipal Utilities,
WWTP Improvements,
SRF Project # WW14 15 80 02

FROM: Jack Fisher

DATE: January 5, 2015

RE: Green Project Reserve (GPR), Business Case

Summary:

- The proposed project addresses: (1) the conversion of the activated sludge process to the Modified Ludzak-Ettinger (MLE) process; (2) upgrading the wastewater treatment plant's (WWTP) ultra-violet (UV) disinfection process; and (3) using recycled materials (i.e., ductile iron pipe and asphalt pavement). The MLE process qualifies under the category for environmentally innovative; the WWTP UV disinfection process qualifies as categorical; and the recycled material qualifies under the category of energy efficiency for Green Project Reserve consideration.
- Estimated State Revolving Fund Loan Amount is \$7,131,000.
- Estimated GPR portion cost of loan associated with the WWTP upgrades is **\$1,905,614** for construction and **\$133,583** for planning and design costs for a total of **\$2,039,197**. This represents approximately 29 % of the estimated loan amount. The **Environmentally Innovative** portion of the total GPR cost is **\$352,545**, while the **Energy Efficiency** portion of the total GPR cost is **\$1,686,652**.

Conclusions

- The assessment for the MLE conversion process qualifies under the category of Environmentally Innovative based on the following:
 - Eliminates high operation and maintenance cost and takes an important step in reducing total nitrogen in the WWTP effluent.
 - The existing anaerobic digester equipment was in need of complete replacement and with the new process this expenditure will be avoided.
 - The MLE conversion alternative was more cost effective than the alternative to update the existing activated sludge process.



- The assessment for the upgrade of the WWTP's UV disinfection system qualifying under the Energy Efficiency category is based on the following:
 - The proposed UV system with flow paced technology will use less energy than the existing UV system resulting in a 62.5 % reduction in energy use and an annual energy savings of approximately \$2,660.
 - When comparing the new UV system to chemical disinfection this results in a 66.5 % reduction in energy use and an annual energy savings of approximately \$4,802.
- The assessment for the recycled materials (i.e., ductile iron and asphalt pavement) qualifying under the Energy Efficiency category is based on the following:
 - Using ductile iron yard piping and interior piping for the proposed project will result in approximately \$19,800 in energy savings when compared with using recycled steel.
 - Using reclaimed asphalt for the proposed project will result in approximately \$3,315 in energy savings when compared to regular asphalt.