



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, City of Madison, LTCP Phase III WWTP Improvements, SRF Project # WW13 14 39 03

FROM: Jack Fisher

DATE: December 15, 2014

RE: Green Project Reserve (GPR), Business Case

**Summary:**

- The proposed project consists of making upgrades to the WWTP's and eliminating the secondary treatment bypass.
- Upgrades to the WWTP's include: constructing a bypass screening channel with a manually cleaned bar rack; installing a fourth influent pump rated at 2,500 gallons per minute with variable frequency drive; reconstruction the primary clarifier splitter box with automatically controlled weir gates; installing a high speed turbo blower in place of the three existing blowers to serve as the primary aeration tank blower; constructing a third 70-foot diameter final clarifier; modifying the final clarifier splitter box; increasing the capacity of the return activated sludge (RAS)/waste activated sludge (WAS) pumping station that will include a larger RAS force main to the aeration tanks; and installing a serpentine weir downstream of the ultra-violet disinfection system to allow a peak flow of 10.2 million gallons per day.
- The estimated Total Project Cost is \$5,041,000.
- Estimated State Revolving Fund Loan Amount is \$5,041,000.
- Estimated GPR portion cost of loan associated with the WWTP upgrades is **\$393,365** for construction and **\$52,170** for planning and design costs for a total of **\$445,535**. This represents approximately 8.8 % of the estimated loan amount.

**Conclusions**

- By installing a new influent pump with a variable frequency drive (VFD), the annual energy cost will be reduced by \$1,600 or a 51% reduction in energy consumption when compared to pump without a VFD.
- By installing a new high speed blower with a VFD, the annual energy cost will be reduced by \$33,472 or a 49% reduction in energy consumption when compared to a constant speed blower. Also, the maintenance for the new high blower when compared to the three existing blowers results in an annual savings of \$3,250 and the annual future capital cost of the replacing the three existing blowers is \$18,200. Combining all of these costs produces a total savings of \$56,227.

