



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: Official Loan File

FROM: Camille Meiners

DATE: July 25, 2014

RE: Green Project Reserve (GPR) Categorical Exclusion and Business Case  
Berne WWTP Improvements  
SRF Project WW 14 08 01 02

The City of Berne proposes improvements to its wastewater treatment plant (WWTP) consisting of installation of a treatment process which incorporates the Submerged Attached Growth Reactor (SAGR) technology to provide ammonia-nitrogen removal, fine bubble partial mix aeration added to Lagoon No. 1, replacement of the existing clarifiers with a disk filter system in combination with chemical addition for total phosphorus removal of the SAGR bed effluent, upsizing effluent pumps and Lagoon No. 2 pumps, replacement of air release valves on effluent forcemain, installation of SCADA and an emergency standby generator, sludge removal in Lagoon No. 1 and Lagoon No. 2, demolition of two clarifiers, decommissioning of three sludge lagoons, the purchase of a portable sludge pump as well as yard piping and site work.

Components of this project are considered to be green under the Energy Efficiency GPR category, as described below.

**The energy efficiency components are the SCADA system and VFDs for blowers and effluent pumps.** Utilizing SCADA and VFD systems, the blowers will only draw the amount of electricity necessary to match the oxygen demand and the effluent pumps will only draw the amount of electricity necessary to meet the WWTP inflow rate. This allows motors to operate proportional to the amount of work required, which reduces the actual energy consumed. The project includes converting Lagoon No. 1 from a facultative lagoon to a fully aerated lagoon for preliminary treatment. Air is required from the blowers for mixing and oxygen demand. The effluent pumps are being replaced to handle the increased treatment plant design flow rate. The SCADA system will monitor the incoming flow rate and select the appropriate pump and motor speed to match the flow. The business case developed by Commonwealth Engineers, Inc. was reviewed and found to meet the GPR requirements for the energy efficiency category.

The total GPR cost is \$213,881. Of this, the construction cost based on bids is \$204,600 and engineering cost is estimated at \$9,381.

Berne plans on closing an SRF loan in the approximate amount of \$7,930,000 in July 2014.

