



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: Amanda Rickard

DATE: February 4, 2019

RE: Green Project Reserve (GPR) Business Case
Evansville East WWTP Effluent Pump Station Project
SRF Project WW 18 18 82 18

Evansville Water and Sewer Utility (EWSU) will construct a new 40 MGD East WWTP effluent pump station at Sunrise Park, associated conveyance piping and structures, cascade outfall, cured-in-place pipe lining and slip in place pipe lining of existing conveyance piping, electrical power distribution, and associated site landscaping and restoration work. Of these components, the 2018 financing includes:

- Contract A: East WWTP Effluent Pump Station
- Contract C: Site Piping Phase I

The East WWTP effluent pump station project is a component of the EWSU Integrated Overflow Control Plan's Control Measure No. 1, which will dramatically reduce the number of combined sewer overflows that occur in Evansville.

Energy savings calculations were performed for the East WWTP effluent pump station using variable frequency drives (VFDs). The pump station will be operated through VFDs for flow ranges between 8 and 40 MGD. Two intermediate flow conditions, 20 MGD and 30 MGD, were selected to estimate energy savings. In the 20 MGD scenario for 60 days in a year, two pumps running at 60 Hz for 1,029 hours was compared with two pumps running at 40 Hz for 1,440 hours. In the 30 MGD scenario for 30 days in a year, three pumps running at 60 Hz for 514 hours was compared with three pumps running at 40 Hz for 720 hours. This compares pumps using VFDs (40 Hz for longer time) with pumps running at full speed (60 Hz for shorter time). The calculations show the energy savings for each of these two scenarios would be approximately 8%. Note that if there are more than 90 days of rain in a year, there will be more savings. The business case developed by Lochmueller Group was reviewed and found to meet the GPR requirements for the energy efficiency category.

The total GPR cost is \$302,000. Of this, the construction cost based on bids is \$280,000 (energy efficiency), and engineering cost is estimated at \$22,000. EWSU closed an SRF loan in the amount of \$107,355,000 on December 4, 2018.