City of St. Peter Wastewater Treatment Plant

Merry Tesfu

Petroleum and Geological Engineering, University of North Dakota. AJ Van den Berghe, MnTAP advisor

Company

The Saint Peter Wastewater Treatment facility serves a population of 12,000 in South Central Minnesota.

Intern Project

Review the facility's energy consumed by the biological aerated filter blowers and biosolids storage blower. Implement energy conservation tactics on these systems.

Incentives to Change

To address rising energy use and costs at the facility, the city seeks to minimize energy use with strategies to control the blowers and biological aerated filter.

Minnesota Technical Assistance Program

Solutions

Automated Controls Adjustment:
Adjusting controls to reduce the wastewater flow rate through treatment cells and using the minimum allowable number of active cells in filtration allows for reduced blower hours and energy savings

Minimizing Over aeration Through Blower Speed Reduction:
Slowing treatment blower motors with variable frequency drives (VFDs) to better match current plant loads and save energy

Modulating Biosolids Aeration Blower on Tank Depth:
Installing a VFD on the biosolids blower saves energy by eliminating over aeration at reduced tank depths