



Village of Sackets Harbor WASTEWATER TREATMENT PLANT

The Village of Sackets Harbor is located on the eastern shore of Lake Ontario at the mouth of the Black River and has a population of 1,380. The existing wastewater treatment and collection system was under a consent order with the NYSDEC and had historic wet weather problems. The Village evaluated the needs of existing wastewater collection and treatment facilities necessary to abate and/or treat collection system infiltration and inflow. The Village embarked on a plan to remedy this situation by constructing a new wastewater treatment facility and sanitary sewer main replacement.

Bernier, Carr & Associates, P.C., designed and constructed a new 600,000 gpd sanitary sewage treatment plant. The new treatment plant is located on lands adjacent to the existing wastewater treatment plant. The project also includes a new lift station and force main; reconstructed gravity sewer mains on Monroe, Broad, and Washington Streets; and the replacement of water mains on these streets where the original water and sanitary sewer mains were constructed in the same trench. Construction on the \$9,005,000 project was completed in Fall 2011.

The project included covered sequencing batch reactors to replace the existing oxidation ditches, a belt filter press, sludge conditioning area and an outfall extension. The covered processes gives the operators better working conditions as well as making the plant a better neighbor to new development in the Village. The project created better wet weather operations that previously had releases to the harbor.

Concurrent with the a traditional wastewater treatment facility to replace its aging system, the Village took on a comprehensive approach to save energy and limit rainwater infiltration to the system with sustainable measures including rain gardens, porous pavement, photovoltaic cells, effluent reuse, automated water metering system, and a hybrid service vehicle. The Village evaluated the collection system and diverted the majority of sewer flows in the Village to a new pump station at a higher elevation, reducing electrical power needs and reducing the sewer system presence in the historic harbor. To help illustrate the varied components of this project to the Village residents, we developed a walking tour map of the Village to explain these features in the streetscape.

The Village actively pursued various funding sources including USDA-RD, CWSRF, ARRA, and New York State Green Project Reserve funding to make the project affordable for its residents. One half of the project cost was included in this combination of Grant programs.

The new wastewater treatment plant included savings of time and costs throughout its systems. Sludge management via the belt press allows quicker, easier management of biosolids, ending the need for hand raking of the sand drying beds. Potable water is not needed to run the press because of the reuse of the effluent in the system, nor is it needed to cool and lubricate the drive bearings. Photovoltaic cells are also offsetting power needs of the operations office/lab building. New monitoring and automatic controls at the plant provide better treatment and fewer false alarms and operator callouts. Fine bubble diffusers and premium efficiency blowers reduce electrical energy consumption. The automatic meter reading system replaces the labor intensive manually read system currently in place and monitors daily for potential leaks. The new plant process eliminates many manual tasks including manual cleaning of the wet weather holding system which was an operations nightmare.