



Ithaca Area WWTF Grit Removal and Plant Modifications Project

Summary of Proposed Work and Budget

Project Scope

As described in the April 2017 Preliminary Design Report, a number of plant upgrades were recommended to improve plant performance and reduce operating costs. A subset of these upgrades were chosen for a first phase of the project to be sent to bid at the end of 2018 and completed in 2019. A description of the major project components and cost estimates follows.

Grit Removal

The IAWWTF does not have a preliminary grit removal system, resulting in grit accumulation in the influent channels and primary clarifiers which must be manually removed. The grit loading causes additional wear on the primary clarifiers and pumping equipment, incurring avoidable O&M costs. Grit is currently removed from the plant's primary sludge, a less efficient process than removal in a preliminary process. The proposed preliminary grit removal system will be housed in a new addition adjacent to the influent channels. It will remove grit from wastewater before it enters the influent channels and primary clarifiers, reducing wear on plant systems and grit removal maintenance requirements. The existing lime silo room will be demolished and built as a new electrical room to provide power to the grit removal equipment.

Generator Upgrades

The plant's current generator is rated at 750 KW, which is not sufficient to power plant functions in the case of a loss of electrical service. It was determined that two (2) 1,000 KW generators run in parallel would be capable of providing emergency power to the entire facility.

Miscellaneous Improvements

- Concrete repairs: Several areas in need of concrete repair were identified by plant staff, including walls near Aeration Tank No. 4, the effluent channel, joints near Final Stealing Tank No. 3, and leaks in gallery concrete panels which allow rainwater intrusion.
- Stair Tower: The stair tower structure (Entrance Structure No. 2) adjacent to the final settling tanks is pulling away from the larger plant superstructure and signs of leaks are evident. The existing concrete tower will be replaced with an enclosed steel frame structure.



- During the course of design, other maintenance required to ensure continued plant performance. The existing digester gas piping is internally corroded which is inhibiting the flow of gas. This biogas piping will be replaced. The existing settling tanks weirs and scum collectors are poor condition and are in need of replacement. There is a safety concern with unstable walkway grating over channels that will be addressed in this project.
- Chemical Unloading and Vac-truck pad. Improvements to the chemical unloading and vac-truck pad locations were identified which would improve safety and decrease staff maintenance effort.

Project Cost Estimate

Description	Amount
Contract 1 - General	
Sitework, Chemical Unloading, Vac-truck Pad	\$320,000
Concrete Repairs	\$150,000
Influent Building Improvements	\$160,000
Grit System	\$2,160,000
Stair Tower Replacement	\$160,000
Misc (Weirs, scum collectors, gas piping, etc.)	\$1,470,000
Subtotal Contract 1	\$4,420,000
Contract 2 - Electrical	
Electrical	\$350,000
Emergency Generator Replacement	\$800,000
Inst & Control	\$110,000
Subtotal Contract 2	\$1,260,000
Contract 3 - HVAC	
HVAC	\$310,000
Subtotal Contract 3	\$310,000
Subtotal Construction	\$5,990,000
Contingency (10%)	\$600,000
Total Construction	\$6,590,000
Engineering, Testing, Legal, Admin	\$600,000
Total Project Cost	\$7,190,000