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Project Abstract - West Otsego Wastewater Treatment Facility

INTERN
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PROJECT FOCUS
Water

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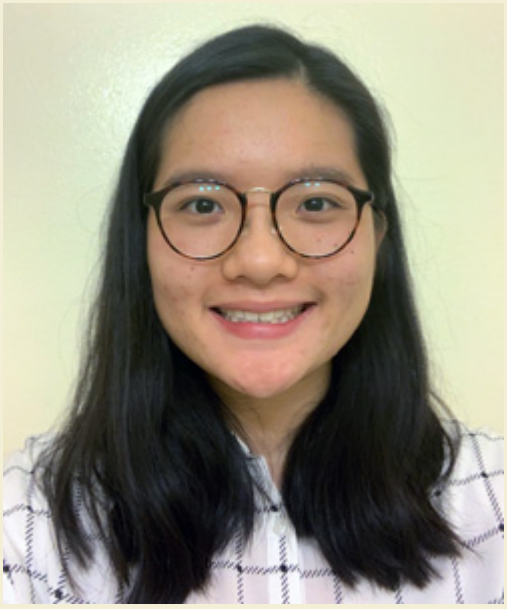
COMPANY
City of Otsego



COMPANY DESCRIPTION
The West Otsego Wastewater Treatment Facility (WWTF) is a municipal facility established in 2004. Along with the East WWTF established in 2000, it is one of two wastewater treatment facilities operated by the City of Otsego that collect and treat domestic wastewater in the area of service. The West Facility is equipped with three

unaerated selector tanks in series, two oxidation ditches and two secondary clarifiers that are operated in parallel. Tertiary treatment consists of UV disinfection proceeding surface discharge into Otsego Creek.

INCENTIVE

The objective of the project is to enhance Biological Nutrient Removal (BNR) thereby reducing effluent discharge of nitrogen and phosphorus, saving cost on chemicals used for treatment, and saving energy through operational modification.

GENERAL APPROACH

The WWTF was analyzed with the Activated Sludge Simulation Program (ASIM), in which a baseline model was created to replicate the actual operation of the facility, and subsequently modified with BNR design.

FOCUS OF RESEARCH / RECOMMENDATIONS

The model was further manipulated in order to obtain an optimal solution for BNR operation that would result in <10 mg/L of nitrate + nitrite as N and <1 mg/L phosphate as P in the plant effluent. Addition of an external carbon source, aeration cycling, and tank size variation were evaluated, while operational parameters such as return activated sludge (RAS) rates, solids retention times (SRTs), and dissolved oxygen (DO) levels were adjusted to refine the final solution.