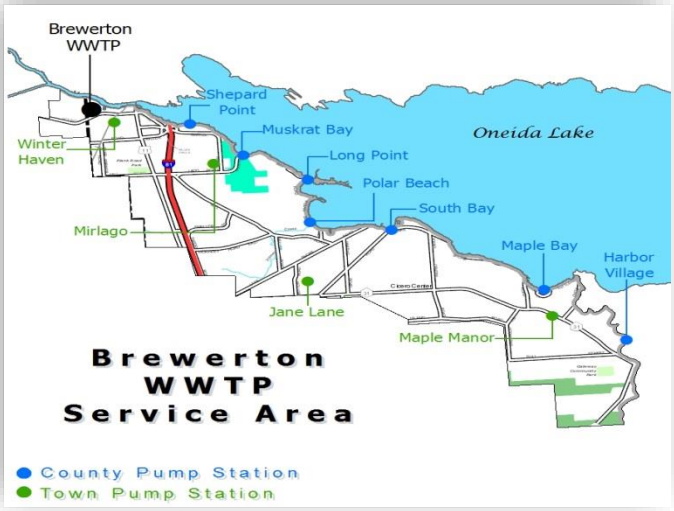
FACT SHEET: BREWERTON WATER POLLUTION CONTROL PLANT (WPCP)

SPDES Permit No. NY – 0027596 Guy Young Road, Cicero, NY 13204

Service Areas

The Brewerton WPCP has a design flow of 3.0 MGD and provides advanced secondary treatment of wastewater using either Extended Aeration or Contact Stabilization Activated Sludge Processes. Construction of this facility was completed in 1974, and the treatment plant is currently operated using the Extended Aeration process. Wastewater is collected throughout portions of the Town of Cicero; along the Southwest edge of Oneida Lake, beginning just west of the Hamlet of Bridgeport, up to and including the Village of Brewerton. Wastewater collected from various neighborhoods is transported via a series of pumping stations, which connect to either the Lakeshore or Orangeport trunk sewers. These two trunk sewers gravity feed to and combine at Special Manhole #1, located immediately to the East of the Raw Sewage Pumping Station structure (RSPS). The wastewater influent is primarily from residential sources.



Treatment Process Description

The wastewater undergoes screening and grit removal in the RSPS, utilizing both a bar rack and a mechanical screen rake, followed by grit removal in an aerated grit chamber, which uses a mechanical clam shell removal system. Wastewater is then pumped to the first in a series of two (2) tanks to begin the activated sludge treatment process. Using the Extended Aeration Process, wastewater is pumped into the sludge reaeration tank as a plug flow. The wastewater flows through the aerated tanks and then into the aerated mixed liquor tank for extended activated sludge treatment. The treated wastewater then flows to the final clarifier where settling occurs with the aid of cationic polymer. Activated sludge collected in the clarifier is recirculated to the sludge reaeration tank and/or wasted to the two (2) aerobic digestion tanks which operate in series. Digested sludge is thickened using a rotary drum thickener, stored in a concentration tank and hauled to the Metropolitan-Syracuse WWTP for further treatment. Effluent from the clarifier flows to the chlorine contact tank for seasonal disinfection using sodium hypochlorite, followed by de-chlorination using sodium bisulfite, before discharge to the Oneida River. Total Phosphorus is removed year round with the use of ferrous sulfate. Seasonal nitrification is related to ambient temperatures.

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Treatment Plant Specifications

Grit Chamber	(1) Chamber – 16' l x 10' w
Reaeration Tanks	(2) Tanks – 116' l x 22' w
	14' side wall depth (swd)
	267,300 gal / tank
	534,600 gal - total
Aerobic Digestion Tanks	(2) Tanks – 116' l x 22' w
	14' side wall depth (swd)
	267,300 gal / tank
	534,600 gal - total
MLSS Tanks	(2) Tanks – 58' l x 22' w
	14' side wall depth (swd)
	133,600 gal / tank
	267,200 gal - total
Final Clarifier Tanks	(2) Tanks – 60' dia x 9' swd
	190,300 gal / tank
	380,600 gal – total
Chlorine Contact Tank	(2) Tanks – 50' l x 8' w x 12.5' d
	37,400 gal / tank
	74,800 gal – total
Thickened Sludge Holding Tank	(1) Tank – 10' l x 22' w x 14' d
	23,000 gal - total

Performance Data (2023)

Average Daily Data	
Design Flow:	3.0 MGD (peak 7.5 MGD)
Avg Flow:	2.1 MGD (peak 7.3 MGD)
Design BOD:	4,000 lbs/day
Ave Inf BOD:	116 mg/L / 1,808 lbs/day
Ave Eff BOD:	7.4 mg/L / 110 lbs/day
Design TSS:	4,700 lbs/day
Ave Inf TSS:	159 mg/L / 2,212 lbs/day
Ave Eff TSS:	6.6 mg/L / 119 lbs/day
Ave Inf TP:	3.1 mg/L / 47 lbs/day
Ave Eff TP:	0.5 mg/L / 7.6 lbs/day
Ave Inf TKN:	23.4 mg/L / 363 lbs/day
Ave Eff TKN:	1.3 mg/L / 22 lbs/day
Annual Information	
Biosolids Hauled:	538,534 lbs/dry
Grit Hauled:	369 cu ft
Screenings Hauled:	1,317 cu ft
Ferrous Sulfate Usage:	73,327 gal
Na Hypochlorite Usage:	12,935 gal
Na Bisulfite Usage:	4,445 gal
Polymer Usage:	6,401 lbs

SPDES Permit compliance history can be found at: https://echo.epa.gov/

Treatment Process Flow Diagram