

FACT SHEET: BALDWINSVILLE-SENECA KNOLLS WASTEWATER TREATMENT PLANT (WWTP)

SPDES Permit No. NY - 0030571

Barbara Lane, Lysander, NY

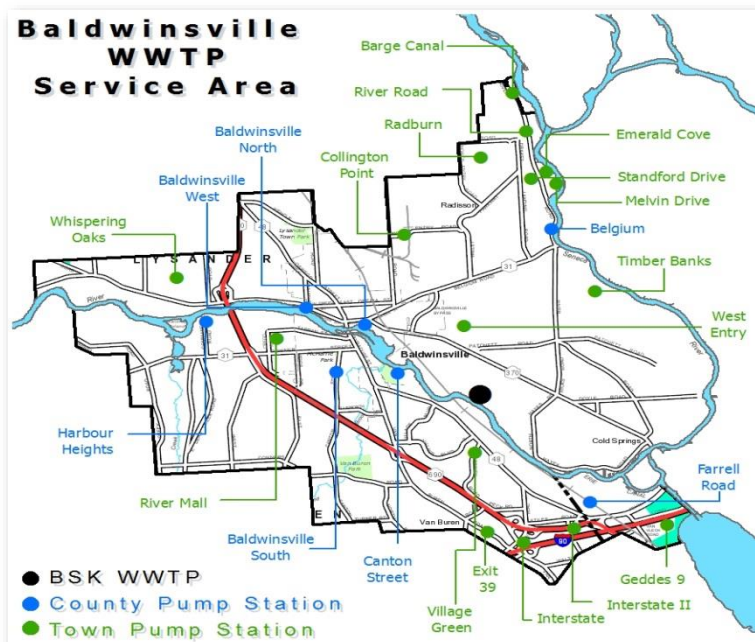


Service Areas

The Baldwinsville-Seneca Knolls (BSK) WWTP was commissioned in 1982, replacing a number of treatment plants serving the towns and villages on both sides of the Seneca River. These older, deficient plants were converted to pump stations to convey the flow to the new advanced WWTP and thereby improve the water quality downstream. The BSK WWTP also allowed for more housing development in the area with sewers connections. There are now 23 pump stations in Baldwinsville, Radisson, Seneca Knolls, Interstate Island, and River Mall serving 36,000 residents. The wastewater is mostly residential, with two significant industrial sewer users. Disinfection system upgrades were completed in 2018, including the addition of a sodium bisulfite dechlorination system. In 2023, the digestion process was retrofitted with Autothermal Thermophilic Aerobic Digesters and a Storage Nitrification Denitrification Reactor. These improvements reduced odors while replacing aging equipment to ensure high quality treatment into the future. The BSK WWTP is currently undergoing major asset renewal updates facility wide.

Treatment Process Description

The Baldwinsville-Seneca Knolls Wastewater Treatment Plant is designed to treat 9 MGD and is located in the Town of Lysander along the shore of the Seneca River. The influent flow averages 3 MGD, and undergoes preliminary, primary, and advanced secondary treatment. Pure oxygen generated onsite intensifies the activated sludge process, which consistently removes over 95% of the BOD₅ and Suspended Solids. The addition of ferrous chloride affects the chemical precipitation of phosphorous, which is a very important nutrient to keep out of the receiving waters. The treatment process is enhanced further in the warm weather to include nitrification and seasonal disinfection and de-chlorination. The biosolids generated are treated in aerobic digesters and dewatered by belt-presses prior to transportation to a landfill.



FACT SHEET: BALDWINSVILLE-SENECA KNOLLS WWTP

SPDES Permit No. NY – 0030571

Treatment Plant Specifications

Grit Chambers	(2) Chambers - 25,000 gal / tank
	50,000 gal - total
Primary Clarifiers	(2) Tanks - 140'l x 40'w x 8'd
	335,100 gal / tank
Aeration Tanks	(2) Tanks 1 st Stage
1 st Stage Pure O ₂	(3) Tanks 2nd Stage
& 2nd Stage	Tank - 123'l x 41'w x 8.8'd
Atmospheric	332,000 gal / tank
Secondary	Normal Operation
Clarifiers 1 st and	(2) Tanks each per 1 st /2 nd Stage
2 nd stage	Tank- 155'l x 40'w x 12.4'd
(3rd Tank Available	575,100 gals / tank
in 2nd Stage)	1,150,200 gal / stage
Chlorine Contact	(2) Tanks-77'l x 18'w x 8.8'swd
Tanks	91,200 gal / tank
Dechlorination	(2) Tanks-35'l x 7'w x 8.8'swd
Tanks	16,100 gal / tank
Sludge Thickeners	(4) tanks - 25,000 gal / tank
Pre and Post	(2) Pre Digester-50,000 gal-tot
Digester	(2) Post Digester-50,000 gal-tot
Aerobic Digesters	(2) Tanks - 50'l x 50'w x 15.4'd
Pure Oxygen	288,000 gals / tank
Storage	(1) Tank - 50'l x 50'w x 11' d
Nitrification	
Denitrification	
Reactor	206,000 gals / tank

Treatment Plant Data (2023)

Average Daily Data	
Design Flow:	9.0 MGD (peak 18.0 MGD)
Avg Flow:	3.8 MGD (peak 10.3 MGD)
Design BOD:	13,400 lbs/day
Ave Inf CBOD:	142 mg/L / 4,350 lbs/day
Ave Eff CBOD:	4 mg/L / 123 lbs/day
Design TSS:	13,400 lbs/day
Ave Inf TSS:	308 mg/L / 59,488lbs/day
Ave Eff TSS:	6.3 mg/L / 205 lbs/day
Ave Inf TP:	5.1 mg/L / 161 lbs/day
Ave Eff TP:	0.33 mg/L / 9.8 lbs/day
Ave Inf TKN:	30.5 mg/L / 950 lbs/day
Ave Eff TKN:	6.2 mg/L / 212 lbs/day
Annual Information	
Biosolids Hauled:	1,118 Cake Wet Tons
Grit Hauled:	1632 cu ft
Screenings Hauled:	3,087 cu ft
Grease Hauled:	1,000 gal
Ferrous Chloride Usage:	67,013 gal
Na Hypochlorite Usage:	17,183 gal
Sodium Bisulfite Usage:	4,843 gal
Cationic Polymer Usage:	52,193 lbs
Ferric Chloride Usage:	1,837 gal

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

Treatment Process Flow Diagram

