



TOWN OF WILLIAMSON

WASTEWATER TREATMENT PLANT 'GREEN' IMPROVEMENTS



93.3% EFFICIENT BOILER

To help reduce energy costs, a high efficiency boiler was installed to replace the original, outdated system.

EFFICIENT LIGHTING & DIMMABLE OCCUPANCY SENSORS

Inefficient incandescent light bulbs have been replaced with LED fixtures reducing overall energy demand and consumption by up to 60%. Energy sensors in all interior rooms of the Main Control Building ensure lights are on only while areas are occupied, turning off automatically after a predetermined period of vacancy.

American-made Beta LED products are utilized for outdoor lighting. Beta LED lights contain no mercury or lead, common chemicals still found in fluorescent bulbs. Energy savings range from 35 to 70%. Not only are Beta LED lights more efficient than incandescent bulbs, they surpass the LED market with their 100,000 hour rated life. Sensors ensure lights turn on at dusk and shut down at dawn. Exterior lights also have a bi-level setting allowing them to run on low power when the plant is unoccupied.

GREEN ROOF

The green roof system consists of approximately 1,200 square feet of pre-grown modules which mimics natural systems. The roofs advantages include:

- Stormwater runoff, volume reduction and increased stormwater retention; 70-90% of summer precipitation, 25-40% in winter.
- Protection of the roof membrane resulting in longer material lifespan.
- Filtration of airborne particulates - up to 1,250tons/year.
- Preservation of biodiversity and natural habitats.
- Sound insulation.
- Improved employee productivity.
- Job creation for suppliers, manufacturers, and contractors.



Green Roof Panels

The Town of Williamson was successful in receiving **90% FUNDING** for wastewater treatment plant green improvements through the New York State Environmental Facilities Corporation under the stimulus package energy conservation grants for sustainable green planning. A total of 294 applications were submitted for the Grant Program with only 54 awards being made.

TOTAL PROJECT COST: \$757,000.00
GRANT FUNDS RECEIVED: \$664,000.00

Green Infrastructure projects include a **RAINWATER HARVESTING & REUSE SYSTEM** and installation of a **GREEN ROOF**.

Energy efficient improvements, include installation of **EFFICIENT LIGHTING & DIMMABLE OCCUPANCY SENSORS**, and **SOLAR ENERGY** which will provide over 15% of the facility's current electric needs; and a new **93.3% EFFICIENT BOILER**.



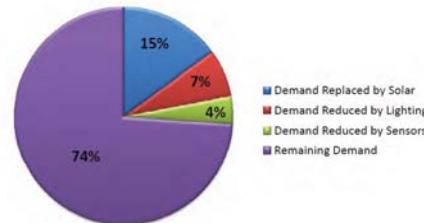
Rain Water Pump

RAINWATER HARVESTING & REUSE SYSTEM

As much as 85,000 gallons of water will fall on the roof surfaces at the WWTP each year. To help manage this stormwater a 2,500 gallon belowground storage tank adjacent to the Process Control Building collects the water for non-potable reuse such as equipment cleaning and irrigation.

The Town estimates a saving of \$3.00 for every 1000 gallons no longer treated at both water and wastewater treatment plants. Decreased erosion, soil mitigation and pollutant contamination are all environmental benefits associated with the facility stormwater management plan.

CURRENT ELECTRICAL USE

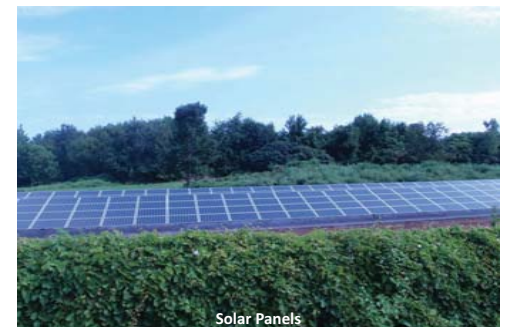


Amount of current electrical usage (kWh/yr) replaced or reduced by clean energy technologies. Total current electric use is 436,000 kWh/yr. Solar is assumed to be 80% efficient and produce electricity for 7 hrs/day. Lighting demand is reduced by 40%. Sensors reduce lighting usage by 40%.

PROJECT	NET PRESENT WORTH OF REVENUE GENERATED OVER 10 YEARS	TOTAL COST OF INSTALLED SYSTEM	10% MATCH BY TOWN OF WILLIAMSON	TOTAL NET PROFIT AFTER 10 YEARS
SOLAR PANELS	\$68,231	\$365,172	\$36,517	\$31,714
GREEN ROOF SYSTEM	\$42,813	\$36,768	\$3,677	\$39,136
EFFICIENT LIGHTING	\$36,034	\$34,822	\$3,482	\$32,552
TOTAL	\$147,078	\$436,762	\$43,676	\$103,402

SOLAR ENERGY

The plant features a 60 kw solar system. Assuming an average of 7 hours of adequate sunlight a day, solar array may produce up to 80,000 kWh every year. With an average yearly electric consumption of 436,000kWh at \$0.105/kWh, the solar energy will reduce the Wastewater Treatment Plant's electrical demand by over 15% and save approximately \$6,800 per year.



Solar Panels

ENGINEERING SERVICES PROVIDED BY:



700 WEST METRO PARK, ROCHESTER, NY 14623-2678
 Phone: 585-272-7310 Fax: 585-272-0159

GENERAL CONTRACTOR:
 Frank J. Marianacci Inc.

ELECTRICAL CONTRACTOR:
 O'Connell Electric Co.

HVAC CONTRACTOR:
 Lang Heating & Cooling Inc.