



2019 Energy Efficiency Award NHDES-WRBP Regional Wastewater Facility

The New Hampshire Department of Environmental Services (NHDES), Winnepesaukee River Basin Program (WRBP) was recognized in 2019 as the **Overall Most Energy Efficient Wastewater Treatment Plant (WWTP) in New Hampshire** based on electricity used per million gallons treated (kW/MG treated) compared to all the other WWTPs in New Hampshire.



This first annual NHDES/NHSaves energy efficiency award cited in part: *“The WRBP’s energy use of 853 kWh/MG treated, when compared to available national benchmarks for similar sized activated sludge WWTPs (ranging from 1,200 to 2,400 kWh/MG treated), shows the staff at WRBP is doing a fantastic job with energy efficiency on a national level as well as within New Hampshire.”*

This recognition is the result of numerous energy savings measures implemented at the WRBP Franklin WWTP over the last two decades. In 2007, centrifuges replaced labor-intensive filter presses to dewater sludge. Although the power draw from the centrifuges is more than the presses, they operate roughly 1/3 as long; creating overall more energy and labor efficient operations. The new ultraviolet (UV) disinfection system installed in 2012 is 70% more efficient than the original UV system and the new Plant Water System saves more than 50,000 kilowatt hours per year; resulting in more than \$70,000/year energy savings from the UV/Plant Water upgrade project.

The WRBP received the 2012 Governor’s Excellence in Energy Efficiency Award in recognition of its aeration blowers and energy efficiency upgrade project, including the “green roof” installed on the main building at the Franklin WWTP, energy efficient lighting retrofits, and efficient use of the anaerobic digestion’s methane biogas to heat buildings and process tanks. Over the last six years, the WRBP Franklin WWTP reduced overall energy use by 27% and reduced the kW/MG treated by 43% while flows through the WWTP have increased.

The WRBP recently completed a LED lighting retrofit in the extensive tunnel system beneath the Franklin WWTP by replacing the old fluorescent lighting. A new main electrical switchgear system replaced the 40-year old equipment to provide power throughout the facility. The new switchgear could be smaller and less expensive due to the reduced power consumption and demand created by previous energy efficient retrofits. A new diesel emergency generator is being installed in 2019 to replace the 40+ year old fuel-oil turbine generators. The single, modern diesel generator was right-sized for the WWTP’s reduced electrical needs.

The WRBP regional wastewater collection system and treatment facility serves Center Harbor, Moultonborough, Gilford, Meredith, Laconia, Belmont, Sanbornton, Northfield, Tilton and Franklin. These member communities pay all the expenses of operating, maintaining, and upgrading the WRBP infrastructure. The Franklin WWTP is the centerpiece of the WRBP, which serves to protect the quality of the lakes and rivers within the Lake Winnepesaukee Watershed, providing a catalyst for recreation and economic development within the region.

