

Comprehensive WWTF Upgrades Whitefield, NH



Background

In response to growth and to come into compliance with its NPDES discharge permit, the Town's wastewater treatment facility (WWTF) required a capacity upgrade. Wright-Pierce, working alongside the Town, selected a Sequencing Batch Reactor (SBR) design for the upgraded facility. This WWTF upgrade brings state-of-the-art wastewater process operations to Northern New Hampshire.



Uniqueness

To bring the facility into compliance with stringent nutrient requirements for ammonia (NH₃) and total phosphorous (TP), and provide flexibility to meet future requirements, various upgrade scenarios were evaluated. The selected treatment process upgrade included a full WWTF process conversion of the lagoon process to a mechanical, activated sludge process consisting of SBRs and a tertiary filtration system.



Innovative Applications

Process design and equipment selection were made to reduce energy consumption and provide long-term electrical cost savings. Upgrades included variable speed drives; high-efficiency boilers and water heaters; energy-efficient LED lighting; an energy-efficient influent screen; and a new computerized control system, enabling Town staff to limit power consumption as demand fluctuates.



Social/Economic Impact

The upgrade was completed in a fiscally responsible way by maximizing low-interest loan and grant funding through multiple separate funding agencies. It provides the Town with a treatment facility that has the flexibility to support future economic development in the region and, through improved WWTF effluent quality, has improved water quality of the Johns River.



Title Comprehensive WWTF Upgrades in Whitefield
Owner & Location Town of Whitefield - Whitefield, NH
Design Engineer Wright-Pierce - Portsmouth, NH