



GREAT LAKES WATER AUTHORITY

WATER RESOURCE RECOVERY FACILITY | DETROIT, MI

With a peak capacity of 1.7 billion gallons per day, the Great Lakes Water Authority (GLWA) Water Resource Recovery Facility in Detroit is the largest single-site wastewater treatment facility in North America. GLWA contracted with NORESKO to replace an existing, aged plant effluent water pump station, improving the facility's resilience to loss of water supply. Construction is underway.

Built in 1970, the existing plant effluent water pump station relies on many original pumps to provide secondary effluent to various uses at the plant. The plant's age, condition, and operational inefficiency motivated GLWA to plan for replacement. Additionally, the utility aspired to improve facility reliability, boost energy efficiency and address a single point of failure associated with the 5.5 million gallons per day of potable water consumed for non-potable uses.

The project team used the progressive design build guarantee delivery model as the basis for work. Successful use of this approach can improve project efficiency, reduce costs, and shorten construction schedules. Key elements of the major project include:

- A new, efficient plant effluent water pump station that is right sized to meet the GLWA's current and future requirements and reduce energy consumption.
- A new filter and chemical feed treatment system that will allow the use of treated plant effluent in place of potable water. The project provides for redundant sources of water for the non-potable uses. The redundant systems are passive in nature, assuring operators that source transfer will occur seamlessly and not cause a treatment interruption.
- A new hypochlorite feed system for the Detroit River Outfall Disinfection Facility to serve as a backup to the existing gas chlorination system and provide resiliency in the event of a loss of potable water supplying the chlorination facility.

The new pump station and treatment systems will provide complete resiliency of process water sources, lower energy consumption, significantly reduce consumption of potable water, and lower operating cost.

This project demonstrates GLWA's commitment to operational efficiency, reliability, and sustainable re-use of plant effluent water and further positions the utility as a national leader in water resource recovery.

Average Daily Flow at GLWA:
650 Million Gallons

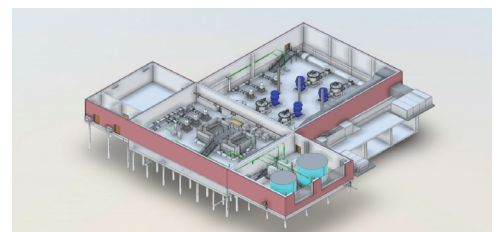
Project Size:
\$100 Million

Delivery Method:
Progressive Design Build Guarantee

Design Partner:
Jacobs Solutions

Technical Highlights:

- Meet 100% of the GLWA's current and anticipated future plant effluent demands
- Reduce annual energy consumption by 3 MW through high efficiency equipment and controls
- Substantially reduce the consumption of potable water
- Increase resiliency to a non-potable water supply failure by using treated plant effluent as a primary source of non-potable water, with potable water as a readily available backup



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