



Water Wastewater

Client
City of Traverse City

Location
Traverse City, Michigan, USA

Traverse City Regional Wastewater Treatment Plant

Project Highlights

- Design-build expansion, with \$200,000 in project savings through value engineering
- Facility operated by OMI, a CH2M HILL company
- Innovative use of membrane technology to keep expansion within current plant footprint
- Workshop approach to decision-making that involves the client, regulating authority, operating company, and the design-build team



Project Description

OMI, the operations arm of the CH2M HILL family of companies, began operating the Traverse City Regional Wastewater Treatment Plant (RWWTP) in October 1990. Shortly after assuming operational responsibility, OMI concluded that the effluent violations of recent years partially stemmed from the nitrification requirements imposed by the Michigan DEQ in the early 1980s. Those effluent limitations had effectively lowered the capacity of the treatment plant from 14,178 pounds per day of BOD5 to a lower figure. Through a series of evaluations and studies, CH2M HILL:

- Established the new lower capacity
- Assisted with increased industrial pretreatment
- Returned the plant to regular NPDES permit compliance
- Identified treatment technology to restore BOD5 capacity within the existing plant footprint
- Defined project scope to include required electrical and controls upgrades
- Provided options for alternate project delivery methods

Throughout this process, CH2M HILL provided effective communication and information presentations to the Grand Traverse County Board of Public Works. This included presentations to the Board on both the complex biological treatment process and the characteristics of the design-build delivery option.

In 1998, CH2M HILL provided design and general contracting on an upgrade of the Traverse City Regional Wastewater Treatment Plant. The upgrade was necessary to increase capacity and add dual biological nutrient removal. Through careful planning and execution during construction, CH2M HILL kept the plant in service by taking one aeration basin out of service at a time to perform the required structural and mechanical work while maintaining biological treatment in the remaining basin.



The City recently selected CH2M HILL to design and build an additional expansion to the WWTP. The design-build improvement project will increase capacity and effluent quality beyond regulatory requirements. The existing plant includes screening and grit removal, primary clarification, secondary treatment, and UV disinfection. The upgrade includes the construction of new tankage to house the membrane equipment, and the modification of the existing aeration basins to include the aeration capacity and mixed liquor recirculation equipment necessary for the membrane bioreactor process. The existing secondary clarifiers will be converted for use as additional biosolids storage facilities to accommodate future additional storage.