



Lakeview Beach Green Infrastructure Project

City of Lorain, Ohio

Supported by U.S. EPA Great Lakes Shoreline Cities (GLRI) Grant

Coldwater Consulting is currently working with the City of Lorain on the planning, design, and implementation of a stormwater quality treatment project at Lakeview Beach. Water quality sampling performed at the beach during the swimming season has shown a long-standing E. coli bacteria problem with concentrations routinely exceeding the 235 cfu / 100 ml recreational contact standard. As a result, water quality advisories are frequently issued. The beach is located immediately adjacent to a 36" diameter stormwater outfall that has been previously monitored and shown to be a significant source of E. coli bacteria.



The City of Lorain's Lakeview Beach.

The Lakeview Beach green infrastructure project will consist of a two part stormwater treatment system. Initial pre-treatment focused on bacteria reduction will be provided upstream of the beach on the adjacent park property. Pre-treatment technologies to be evaluated include antimicrobial filter media, ultra-violet disinfection, and ozone disinfection. Discharge from the pre-treatment system will be conveyed downstream through new piping and discharged into a wetland sand filter to be constructed along the Lake Erie shoreline, near the existing stormwater outfall. The wetland sand filter will provide final polishing of the stormwater discharge and will be planted with native herbaceous plants. The overall system will be designed to treat dry-weather flow and storm events up to 0.75-inches in depth.



Water quality advisories are frequently posted at Lakeview Beach due to high E. coli levels.

To ensure the overall success of the project and evaluate system performance, the project scope also includes a significant stormwater sampling and flow monitoring effort to be performed during pre- and post-construction project phases. Parameters to be sampled include bacteria (E. coli and Total Fecal Coliform), suspended sediment concentration, oil & grease, and nutrients. All work will be performed in accordance with a Quality Assurance Project Plan (QAPP) developed for the project and approved by the U.S. EPA.

Because non-point source bacteria contamination of Great Lakes beaches is a commonly observed problem, this project has potentially significant implications for water quality improvement throughout the region. It is also an important project for Lorain because its lakeshore represents a valuable City asset and tool for re-development as it transitions from an economy based on heavy industry into a modern community offering recreational opportunities for its residents and the surrounding area.

