

**USACE Detroit District (LRE) completes long-term turbidity monitoring at Fairport Harbor, Ohio, on Lake Erie, working in collaboration with ERDC Environmental Laboratory (EL) and ERDC Coastal and Hydraulics Laboratory (CHL)**

*Impact Statement: Long-term, extensive turbidity monitoring at a Lake Erie harbor in Ohio has been completed. This collaboration between ERDC Environmental Laboratory (EL) and ERDC Coastal and Hydraulics Laboratory (CHL), and USACE Detroit District (LRE) personnel generated a comprehensive turbidity data set for the harbor and nearshore which will be crucial in supporting future innovative aquatic Beneficial Use of Dredged Material (BUDM) placements throughout the Great Lakes.*

During 14-15 November 2023, USACE Detroit District (LRE) hydraulic engineers (led by Jonathan Waddell) retrieved all 9 of the turbidity sensors deployed over 7 months ago in the nearshore of Lake Erie at Fairport Harbor, Ohio (Figure 1). This is an important final step in the site-specific field data collection portion of the collaborative research project between ERDC-EL, ERDC-CHL, USACE Buffalo District (LRB), and LRE. This will allow the research team to now progress to data analysis and ultimately reporting of the project in the scientific literature. Useful data were collected for the majority of the time the sensors were in the field (spring to fall 2023). The team will scrutinize data collected in the last several weeks of the field season, as it appears that biofouling and zebra mussel infestation (Figure 2) may have affected the quality of the data from some of the sensors over that time period. Important lessons are being learned for application to other turbidity monitoring efforts being contemplated elsewhere in the Great Lakes. Because turbidity is a common concern for aquatic beneficial use placements, the resulting data and lessons learned are expected to support additional aquatic beneficial use placement projects in the Great Lakes.

Funding for this turbidity monitoring is provided by the USACE Dredging Operations and Environmental Research (DOER) Program of the Sediment and Dredging Processes Focus Area.

This research addresses Statement of Need (SON) 1726: “Nearshore Nourishment Best Management Practices”.

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