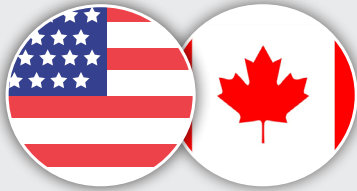


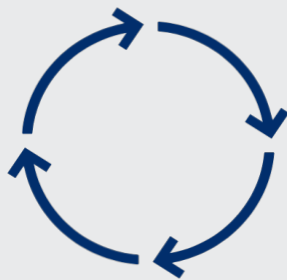
Great Lakes Low Water Datum



Update to align with the International Great Lakes Datum (2020)



Bi-National System
8 States & 2 Provinces



Update Being Considered

to account for water level changes in the basin

2027

Release Date
for the updated LWD

WHAT IS LOW WATER DATUM?

Low Water Datum (LWD), or chart datum, is the threshold below which water levels should seldom fall. In other words, LWD is the lowest water level anticipated most of the time.

In the Great Lakes, their connecting channels, and the St. Lawrence River, LWD is the reference elevation used for navigation improvement projects, including Ports and Harbors of Refuge in those waterways, harbor and channel maintenance, dredging, and shoreline nourishment. The LWD serves as the low water reference for both Canadian and United States navigational charts and water level gauges.

HOW WAS LWD ORIGINALLY ESTABLISHED?

Low Water Datum in the Great Lakes was originally established in 1933, when engineers and surveyors determined a single reference surface for low water was needed in each Lake. Previously, the Great Lakes had two separate low water reference surfaces, one for harbor improvement works, and one for marine navigation, which generated confusion. In most cases, the chosen 1933 Low Water Datum surface was a compromise between the two existing references. In order to set the new 1933 reference surface indefinitely, elevations were related to Mean Tide at New York and given a specific elevation below a known primary control benchmark height on each lake.

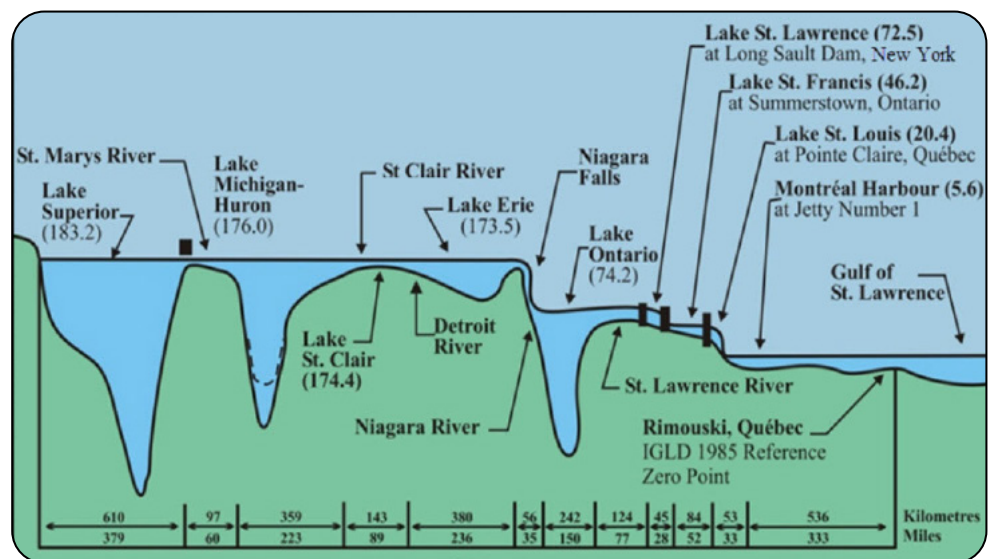


Fig 1: Low Water Datum in meters referenced to International Great Lakes Datum (1985).

When the International Great Lakes Datum was established in 1955 (IGLD (1955)), the Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data (Coordinating Committee) assigned new heights to LWD on each lake relative to IGLD (1955). When IGLD (1955) was updated to IGLD (1985), those LWD heights were referenced to IGLD (1985).

Why Update LWD?

Since the LWD was defined in 1933, the region has experienced significant changes, from changes in channel bathymetry, the addition of new dams and locks, water diversions and the construction of the St. Lawrence Seaway. This may have resulted in LWD surfaces changing over time. The IGLD update now presents an opportunity to evaluate the definition of LWD. The Coordinating Committee is performing an extreme value analysis to determine if new LWD surfaces should be implemented.

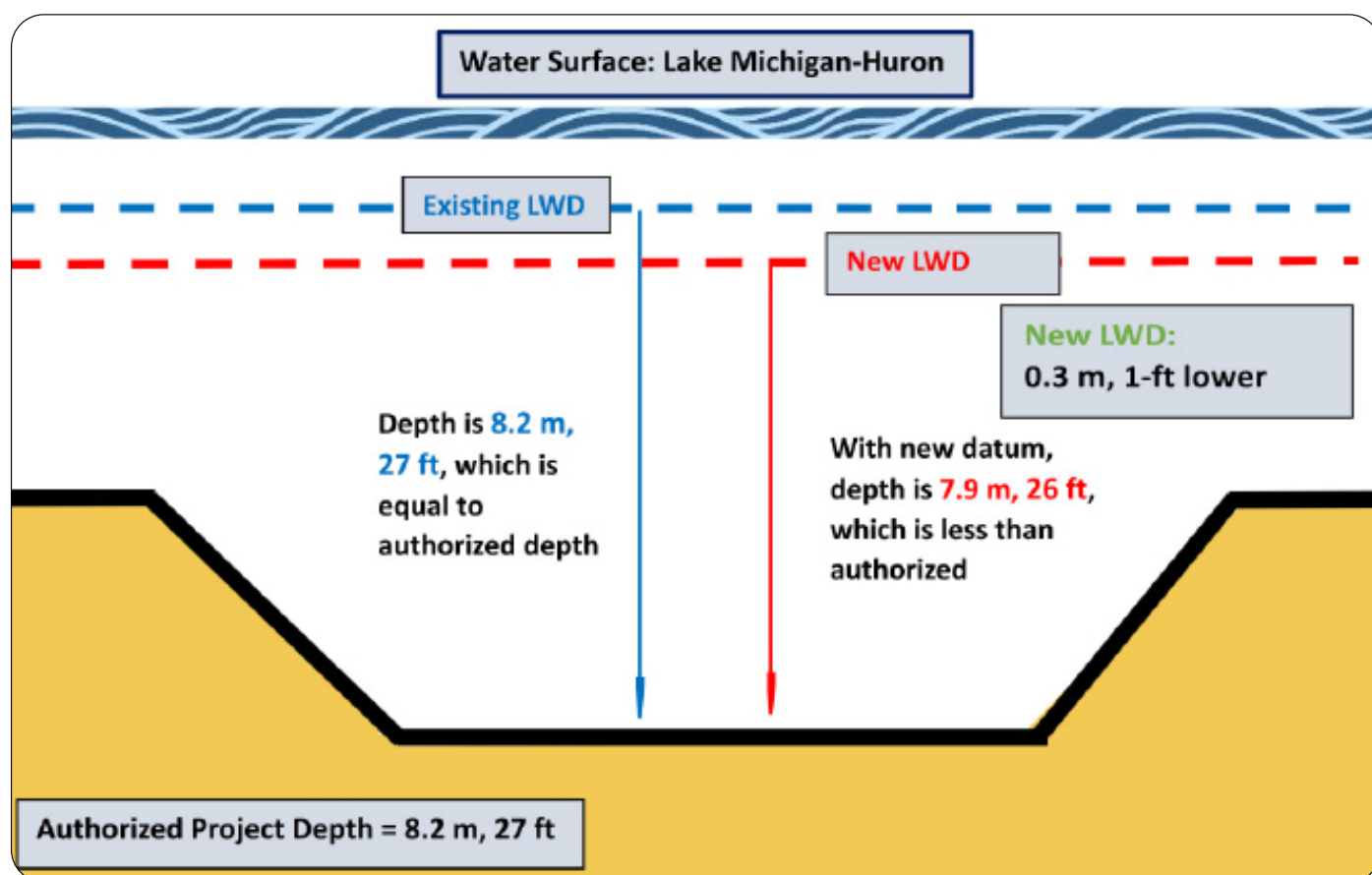


Fig 2: Potential changes in Low Water Datum for Lakes Michigan-Huron.

IMPACTS OF A NEW LWD

Impacts are still being evaluated but could include changes to nautical charts, hydrographic surveys, channel and harbor maintenance including dredging, water management, and coastal zone management.

More Info

Visit www.greatlakescc.org to follow our progress, download technical resources, and read more!

