

REPORT FA 52/2025: To The Full Authority

FROM: Peter Dragunas, Water Management Technician

SUBJECT: Catfish Creek Channel Sounding

DATE: October 30,2025

PURPOSE:

To update the Full Authority with the results of the October 20, 2025, Catfish Creek channel sounding at Port Bruce.

Discussion / Background:

Please find attached, related maps and associated assessment of the October 2025 seasonal fall sounding of the Catfish Creek at Port Bruce.

Attachments:

- September 2024 sounding map,
- October 2025 sounding map,
- Port Bruce, Year to Year (2024-2025) Sediment Deposition and Transport Zones map.

At the time of the October 2025 sounding, the recorded four hour mean Lake Erie water level at Port Bruce was 0.49m (1.61ft.) above chart datum (CD), (Environment Canada, Lake Erie water level station #12400 at Port Stanley).

Recorded four hour mean water level for the soundings discussed in this report are:

- September 2024, 0.919 m (3.02ft.),
- October 2025, 0.490m (1.61ft) above chart datum.

As shown above, water levels in Lake Erie fluctuate. This is due to various external environmental and meteorological effects, the main being the volume of water entering the Great Lakes hydrologic cycle. Consequently, the fluctuating water level identifies the need for a sounding baseline, to separate the variable water levels (water depth), from the sediment deposition and transport information. Accordingly, the Lake Erie Chart Datum of 173.5 meters is used as the water level sounding baseline for Catfish Creek sounding at Port Bruce.

The Port Stanley, Environment Canada, Lake Erie water level station records show that water levels for the October 2025 sounding compared to the September 2024 sounding are down 0.429m (1.407 ft.) year to year. Since the Catfish Creek

Channel bathymetry data is calculated relative to CD, the lake levels do not alter the bathymetric mapping results and are included for information purposes only.

The October 2025 sounding outlines three historically consistent areas of deposition along with an additional persistent and optimistically ephemeral area which is identified in the September 2024 sounding. The first zone is located at the northern reach of the sounding area, the second is just south of the Imperial Street bridge, the third is at BeeLine Trailer Park (all be it smaller than the September 2024 sounding), with an additional potential ice jam originating area identified in 2024 as noteworthy, which is located immediately north of the harbour breakwall at the southern outlet of Rocabore Bay. This area is already a zone of concern since the sum of the Catfish Creek watershed freshet and ice volume has to travel through this man-made area of constriction.

At present the Rocabore Bay depositional area is smaller in size than characterized in the September 2024 sounding. A couple of rationalizations may be.

- a) The 2025 winter season produced more lake and riverine ice, lessening the impact of winter storm wave upswells which transport lake sediment into the southern margins of the harbour and for morphological reasons deposit the sediment at the outlet of Rocabore Bay.
- b) Some of the sediment may have been incidentally removed during the 2025, spring freshet, harbour ice removal schedule.

Possible Rocabore Bay depositional area reasonings for the 2025 winter season:

1. If it is a mild winter and the lake remains open for any length of time during the fall/winter storm season, dominant southerly winds could produce wave upswells that will transport sediment into the harbour, essentially depositing sediment in the southern ephemeral depositional area of Rocabore Bay (identified in September 2024 sounding) and conceivably creating a noteworthy ice jam generating obstruction.
2. On the other hand, if the dominant winds do not persist from the south and there is sufficient precipitation to produce meaningful channel flows prior to freeze-up thereby flushing the migratory lake sediment back out and maintain sufficient free board for the spring ice passage.

The October 2025 sounding results show an intermittent recovering thalweg compared to the fall 2024 sounding (state of equilibrium cycle). The lower half of the sounding area from Erie Marina shows a comparatively (relative to the upper sounding reaches) better and wider defined thalweg, whose connectivity with a similar thalweg at Levis Street is interrupted by a historical but lesser than usual depositional zone at the BeeLine trailer park.

It is anticipated that the sediment depositional zone volumes may further abate as seasonal channel water levels rise and flows increase during the wetter fall

season. Assuming the 2025 summer low flow season did not produce much upstream riverine scour and subsequent sediment, it is anticipated that the immediate upstream sediment load is below average with a lesser amount available for transport into the lower reaches of the sounding area, also the predictable fall increased flows are anticipated to even and distribute some of the grounded sediment over the study area as the sediment migration continues out into the lake. This is projected to relieve depositional areas of excess sediment and optimistically lessen the possibility of ice jamming in these perpetual zones of sedimentation.

Thalweg Rationalization

This spring/summer has seen less precipitation than normal. The seasonal rains did not produce amplified stream scouring flows, yet it appears to have produced sufficiently elevated early season sediment transport flows which affected the in-situ sediment movement. Catfish Creeks year to year bathymetric changes to the natural depositional areas along with the channels transport zones characterize the channels morphological equilibrium within Port Bruce. As one component of equilibrium, Catfish Creek continues to develop by redefining an unstable thalweg by increasing or decreasing the channels' ability to maintain seemly suitable hydrological conveyance characteristics. This sounding seems to identify improved conveyance characteristics relative to the September 2024 sounding.

RECOMMENDATION:

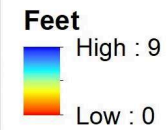
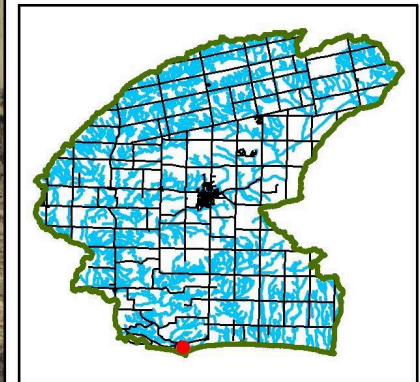
THAT, the channel sounding observations described in Report FA 52/2025, be received as information at this time.

Submitted by:

**Peter Dragunas
Water Management Technician**

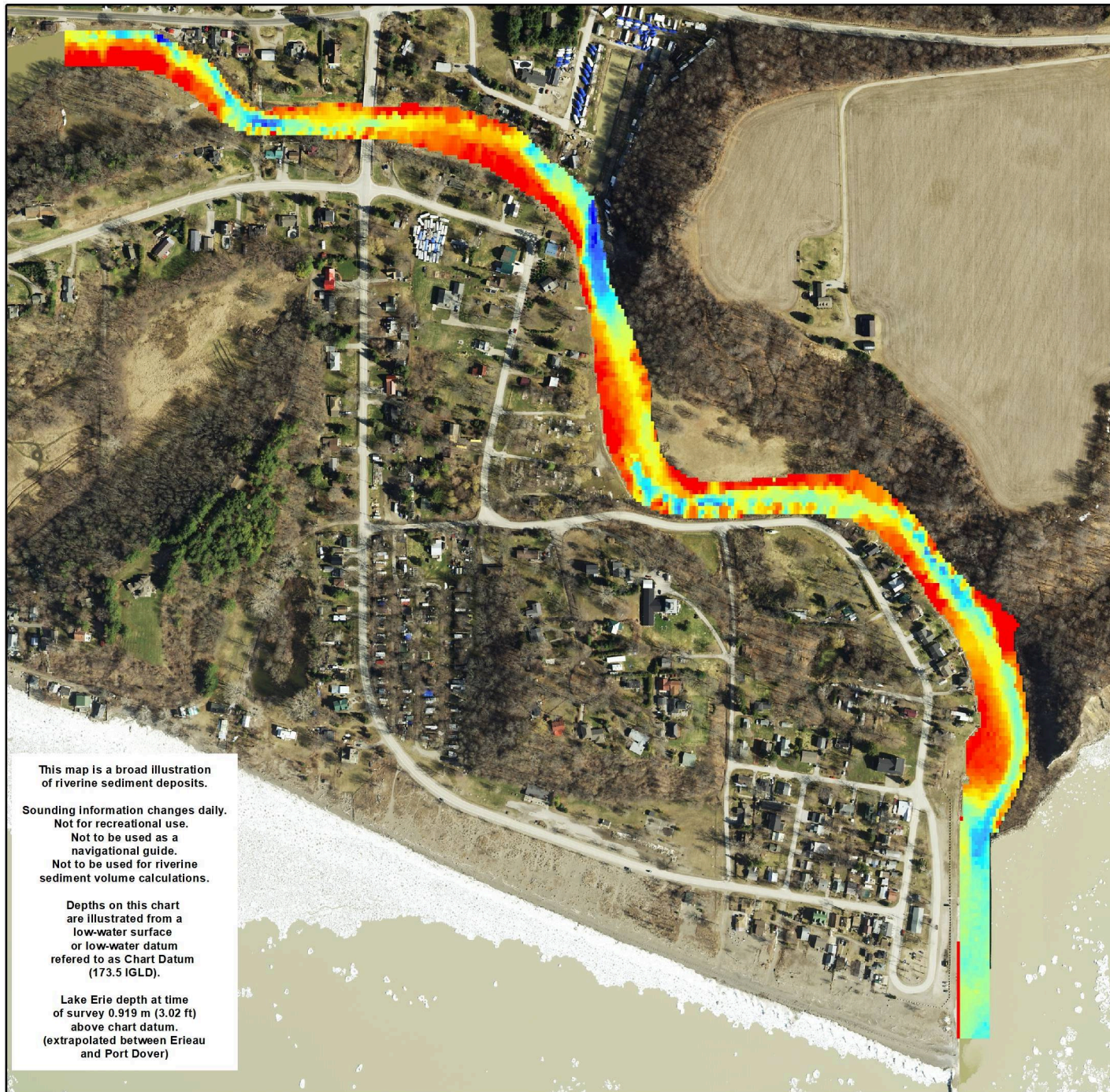


Port Bruce September, 2024 Sounding



Data Sources: NRVIS, DFO, CCCA
CCCA GIS
September 17, 2024

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. Cattfish Creek Conservation Authority (CCCA) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

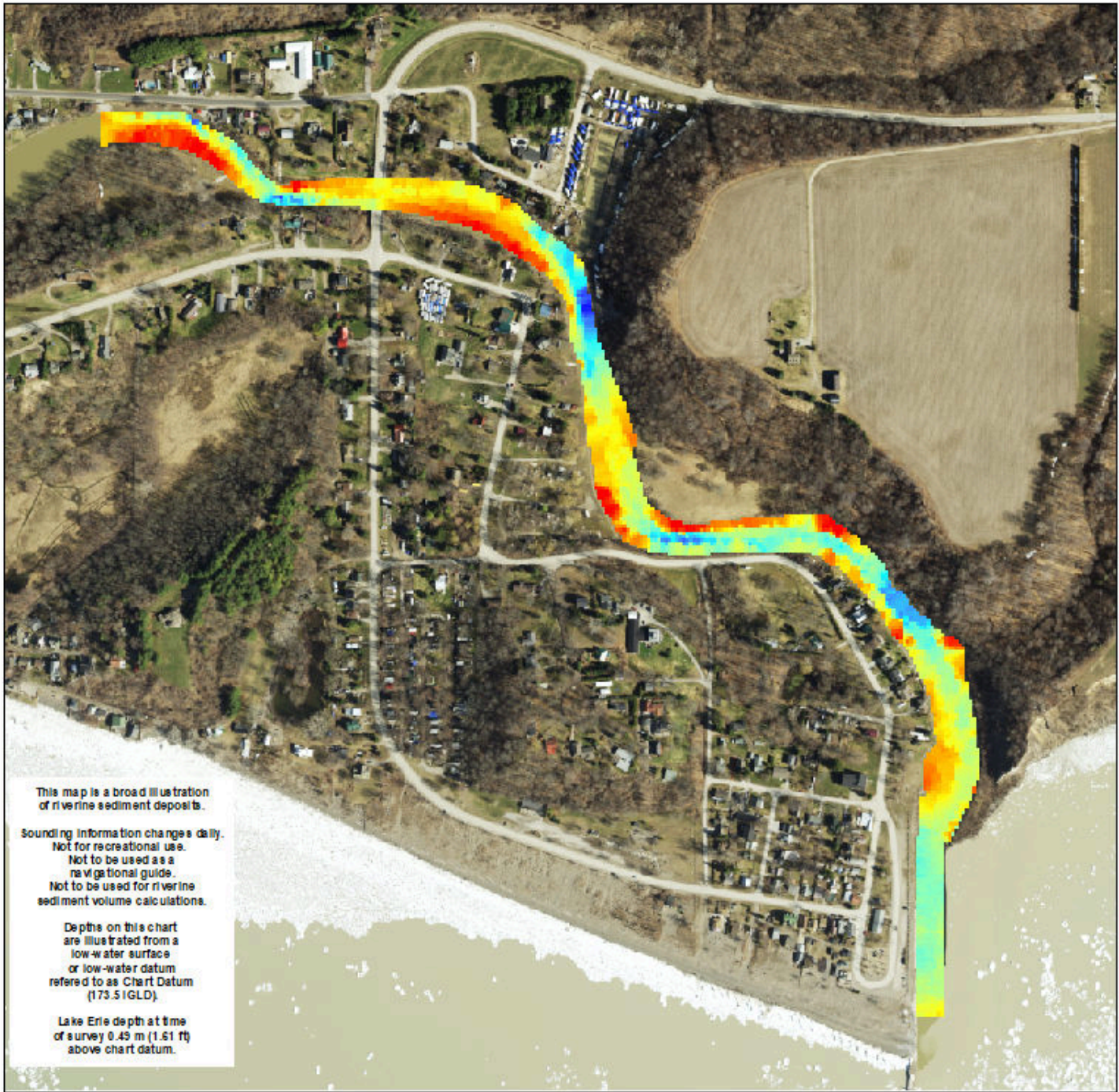


This map is a broad illustration of riverine sediment deposits.

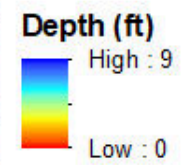
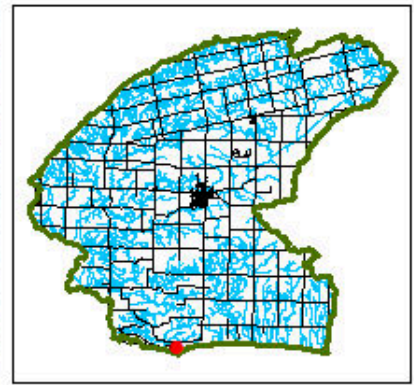
Sounding information changes daily.
Not for recreational use.
Not to be used as a navigational guide.
Not to be used for riverine sediment volume calculations.

Depths on this chart are illustrated from a low-water surface or low-water datum referred to as Chart Datum (173.5 IGLD).

Lake Erie depth at time of survey 0.919 m (3.02 ft) above chart datum. (extrapolated between Erieau and Port Dover)



Port Bruce
October, 2025
Sounding



Data Sources: NRVIS, DFO, CCCA
CCCA GIS
October 20, 2025

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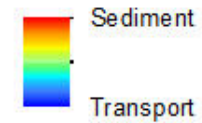
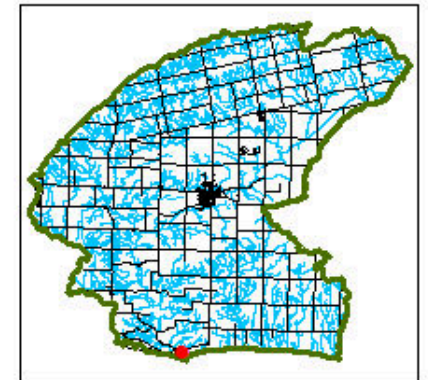
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Depths on this chart are illustrated from a low-water surface or low-water datum referred to as Chart Datum (173.51GLD).

Lake Erie depth at time of survey 0.49 m (1.61 ft) above chart datum.

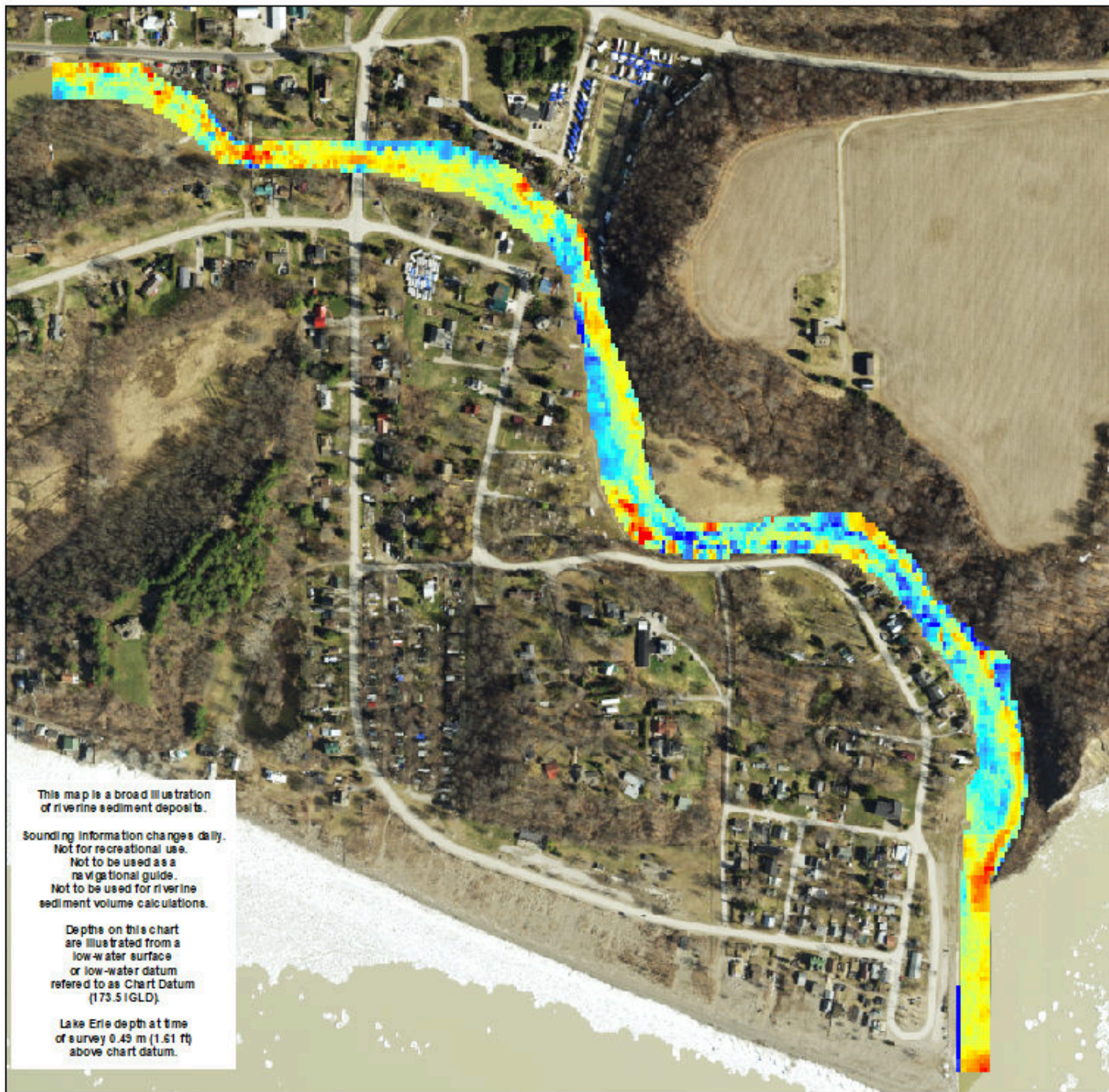


Port Bruce Year to Year (2024-2025) Sediment Deposition and Transport Zones



Data Sources: NRVIS, DFO, CCCA
CCCA GIS
October 20, 2025

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