

REPORT FA 79/2022: To The Full Authority

FROM: Peter Dragunas, Water Management Technician

SUBJECT: Catfish Creek Channel Sounding

DATE: November 15, 2022

Purpose:

To update the Full Authority with regard to the results of the November 7, 2022, Catfish Creek channel sounding at Port Bruce.

Discussion / Background:

Please find attached a map of the November 7, 2022 Catfish Creek Channel Sounding at Port Bruce.

At the time of the November 2022 survey, the recorded Lake Erie water level from the Fisheries and Oceans Canada web site at the Port Stanley (#12400) station, was 0.79m (2.6ft) above the Chart Datum (CD) of 173.5m. On a fall to fall (November 2021 to November 2022) seasonal comparison, the Lake Erie water level is down by 0.43m (1.4ft). Since the Catfish Creek Channel Sounding data and information is evaluated relative to CD (see attached CD description), lake levels during survey do not affect the channel sounding bathymetric results and are included for information purposes only.

The November 2022 sounding identifies three concerning areas of deposition. The first one is located at the northern reach of the sounding area, the second is just south of the Imperial Street bridge and the lesser third one is at BeeLine trailer park. The sounding results also indicates a sporadic thalweg depth from North Erie Marina to Lake Erie. There is a short reach at North Erie Marina which exhibits a dependable thalweg, who's connectivity with the longer thalweg (Levis Street) is interrupted by a lesser depositional zone immediately at the BeeLine trailer park.

The Riggs report, *Catfish Creek Conservation Authority, Port Bruce Sedimentation Study Port Bruce, Ontario*, Riggs Engineering Ltd., May, 2012, outlines that the Catfish Creek at Port Bruce is in morphological equilibrium, meaning the eroded sediment transported by the creek is ultimately removed by the creek out to Lake Erie. Consequently it is anticipated that the aforementioned sediment depositional zone volumes may decrease as channel water levels rise over the wetter fall season. The increased flows are anticipated to flush/distribute some of the grounded sediment more evenly over the study area during the sediment migration out to the lake and conceivably reduce the probability of ice jamming in the aforementioned depositional zones due to seasonal sediment deposits and possible water flows/depth.

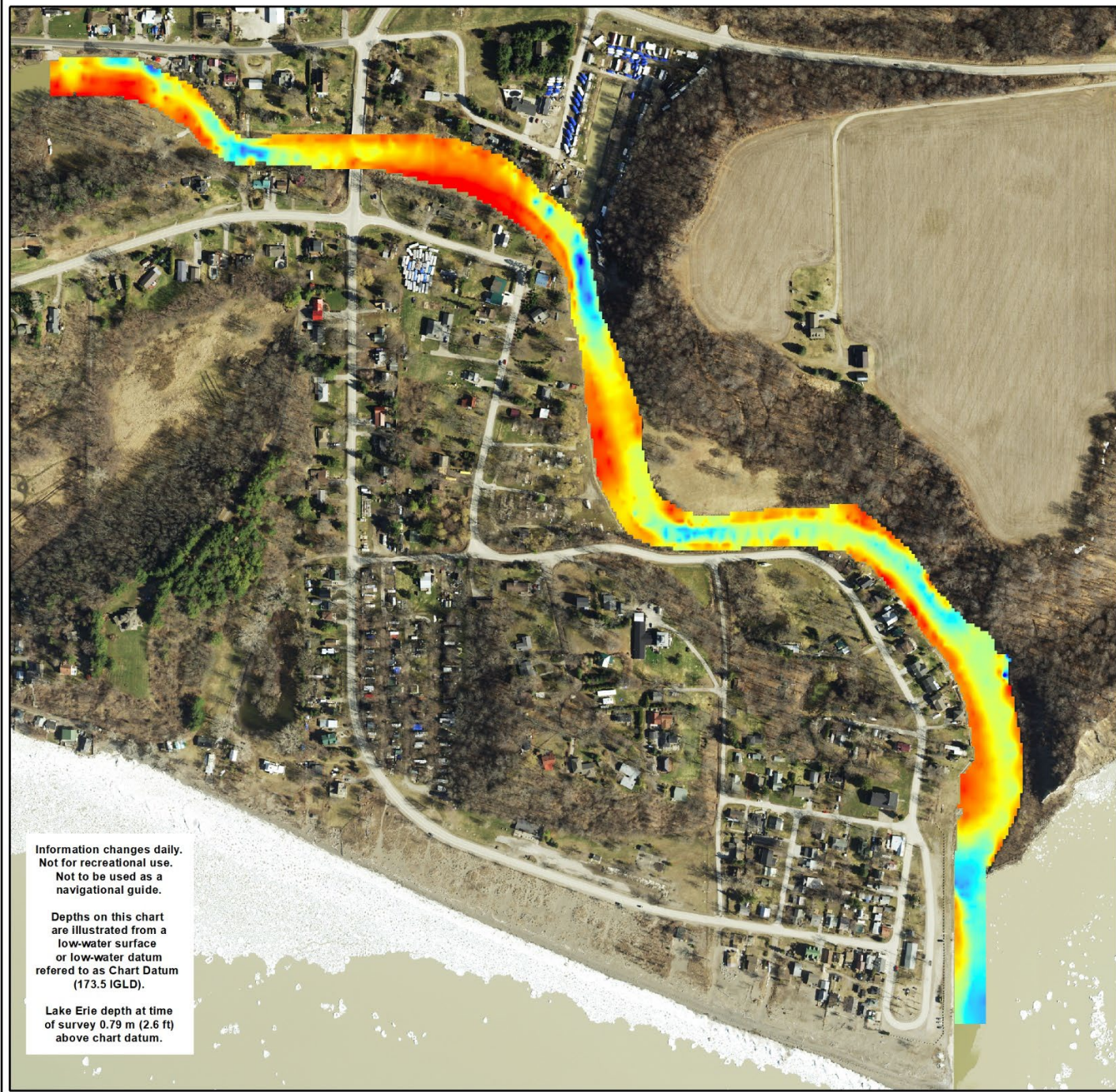
Thalweg Rationalization

The combined spring freshet and the February 2022 ice induced flood event coupled with summer seasonal low flows, provided the opportunity for the channel to transport and deposit sediment into some of the creeks typical depositional zones within the Hamlet of Port Bruce. The probable sediment migration and resulting creek morphological equilibrium may allow the channel to maintain a suitable hydrological conveyance of ice along the thalweg within the lower reaches of the sounding area of the Catfish Creek in Port Bruce.

Recommendation:

That, the channel sounding observations described in Report FA 79/2022, be received as information at this time.

Peter Dragunas,
Water Management Technician



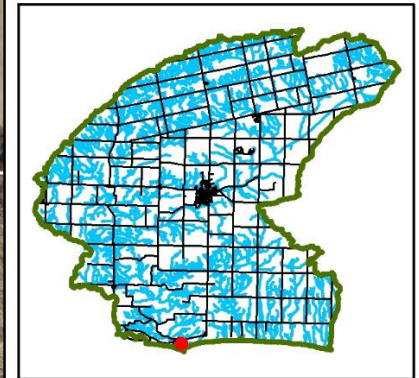
Information changes daily.
 Not for recreational use.
 Not to be used as a
 navigational guide.

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

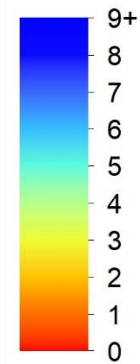
Lake Erie depth at time
 of survey 0.79 m (2.6 ft)
 above chart datum.



Port Bruce
 November 7, 2022
 Sounding



Feet



Data Sources: NRVIS, DFO, CCCA
 CCCA GIS
 November 15, 2022

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.