

## **REPORT FA 59/2023: To The Full Authority**

FROM: Peter Dragunas, Water Management Technician

SUBJECT: Catfish Creek Channel Sounding

DATE: July 13, 2023

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### **Purpose:**

To update the Full Authority in regard to the results of the July 10, 2023, Catfish Creek channel sounding at Port Bruce.

### **Discussion / Background:**

Please find attached maps of the July 10, 2023 and November 7, 2022 Catfish Creek Channel Soundings at Port Bruce.

At the time of the July 2023 survey, the Lake Erie water level at Port Bruce required extrapolation between Erieau and Port Dover, since the Environment Canada, Lake Erie water level station #12400 at Port Stanley, was off line/non-operational due to maintenance.

The extrapolated Lake Erie water level was 1.11m (3.63ft) above the Chart Datum (CD) of 173.5m. November 2022 to July 2023, (2022 sounding to 2023 sounding) the July 2023 extrapolated Lake Erie water level is up by 0.31m (1.03ft). Since the Catfish Creek Channel Sounding data and information is evaluated relative to CD, lake levels during survey do not affect the channel sounding bathymetric results and are included for information purposes only.

As per the November 2022 results the July 2023 sounding identifies three persistent 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. Same as the November 2022 sounding the July 2023 sounding results identify an irregular thalweg depth from North Erie Marina to Lake Erie. There is a short segment at North Erie Marina which exhibits a dependable thalweg, who's connectivity with another deeper thalweg at Levis Street is interrupted by a lesser depositional zone immediately at the BeeLine trailer park.

The Catfish Creek at Port Bruce is in morphological equilibrium (*Port Bruce Sedimentation Study*, Riggs Engineering Ltd., May, 2012), meaning the eroded sediment transported by the creek is ultimately removed by the creek out to Lake Erie. This is evident since the Catfish Creek is maintaining a similar thalweg in July as it did in November. To date this is in part due to the above average 2023 seasonal summer flows.

It is anticipated that the aforementioned sediment depositional zone volumes may decrease as channel water levels rise and flows increase over the wetter fall season. The increased flows are anticipated to flush and distribute some of the grounded sediment more evenly over the study area during as the sediment migrates out to the lake. This will relieve the depositional zones of excess sediment and conceivably reduce the probability of ice jamming in these continued depositional zone areas.

### **Thalweg Rationalization**

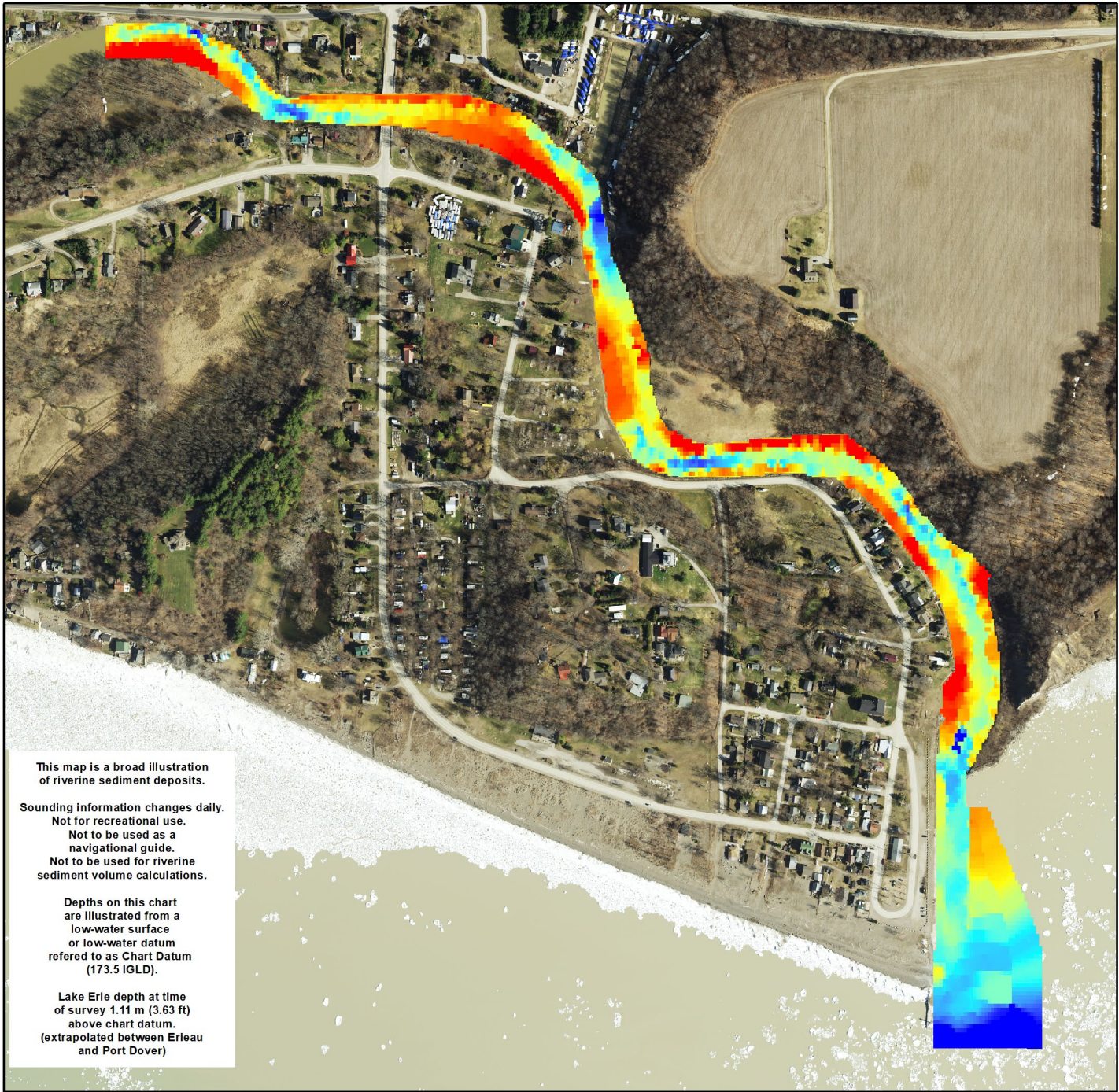
A sequence of 2022, 2023 winter season freeze thaw cycles, combined spring freshet and higher than average summer seasonal flows, provided the opportunity for the channel to transport, distribute and deposit sediment in some of the creeks continued depositional zones (inside bends and wider channel areas) within the Hamlet of Port Bruce. The expected sediment migration and resulting morphological equilibrium may allow the channel to maintain a suitable hydrological conveyance and resulting characterized thalweg within the lower reaches of the sounding area of the Catfish Creek within Port Bruce.

### **Recommendation:**

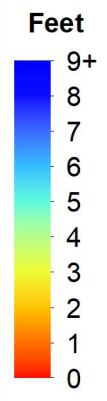
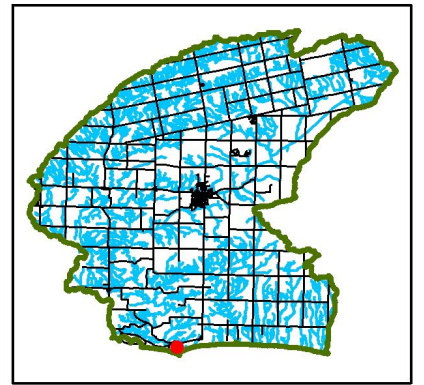
That, the channel sounding observations described in Report 59/2023, be received as information at this time.

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Peter Dragunas,  
Water Management Technician



Port Bruce  
July 10, 2023  
Sounding



Data Sources: NRVIS, DFO, CCCA  
CCCA GIS  
July 10, 2023

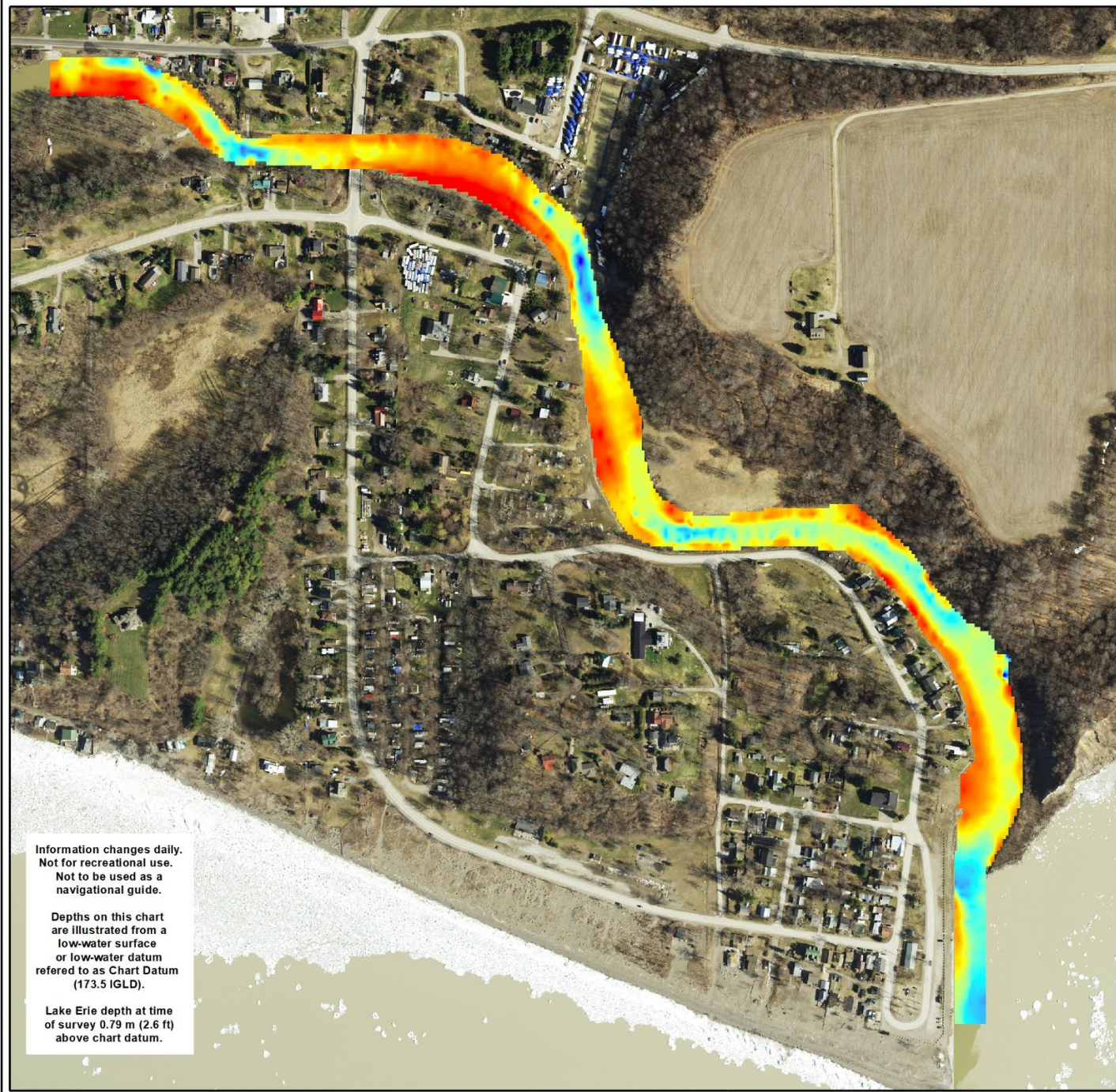
This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. Cattfish Creek Conservation Authority (CCCA) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

This map is a broad illustration of riverine sediment deposits.

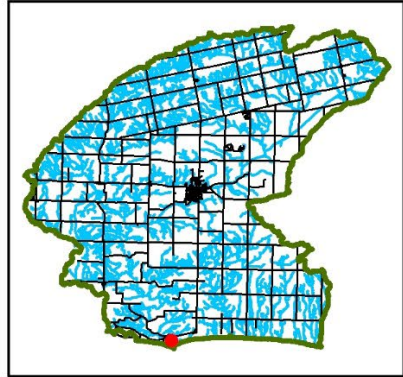
Sounding information changes daily.  
Not for recreational use.  
Not to be used as a navigational guide.  
Not to be used for riverine sediment volume calculations.

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

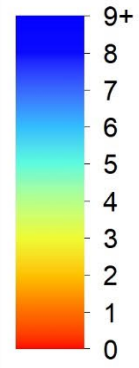
Lake Erie depth at time of survey 1.11 m (3.63 ft) above chart datum. (extrapolated between Erieau and Port Dover)



Port Bruce  
November 7, 2022  
Sounding



Feet



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

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

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