REPORT FA 91/2023: To The Full Authority

FROM: Peter Dragunas, Water Management Technician

SUBJECT: Catfish Creek Channel Sounding

DATE: October 24, 2023

PURPOSE:

To update the Full Authority in regard to the results of the October 24, 2023, Catfish Creek channel sounding at Port Bruce.

DISCUSSION:

Please find attached maps of the October, 2023 and July, 2023 Catfish Creek Channel Soundings at Port Bruce.

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.

At the time of the October 2023 survey, the Lake Erie water level at Port Bruce was 0.871m above IGLD extrapolated from the Environment Canada, Lake Erie water level station #12400 at Port Stanley.

The average recorded Lake Erie water level at the time of sounding was 0.871m (2.86ft) above the Chart Datum (CD) of 173.5m. The July 2023 to October 2023, Lake Erie water levels show that the lake is down 0.239 m (approximately 9.5 in). Approximate year to year (November 2022 to October 2023) lake levels are up 0.085 m (approximately 3.25 in). 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.

The October sounding results continue to identify 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. A forth lesser sediment band has been identified in the Levis Street area. This band has not been seen in past soundings. The opinion on this band is that it should dissipate with the expected higher seasonal (fall) flows and not be a hindrance to freshet ice migration.

The October 2023 sounding results identify an irregular thalweg depth roughly the total sounding reach. There are some detached deeper segments which are coupled by a adequate thalweg allowing for channel flow continuity along the sounding area reach.

It is anticipated that the aforementioned depositional zone volumes may decrease as channel flows increase over the rainier fall season. The increased flows are anticipated to flush and distribute some of the grounded sediment more evenly over the study area as the sediment migrates out to the lake. This will relieve the depositional zones along with the newly established Levis Street accretion band of excess sediment and conceivably reduce the probability of ice jamming in these areas.

Thalweg Rationalization

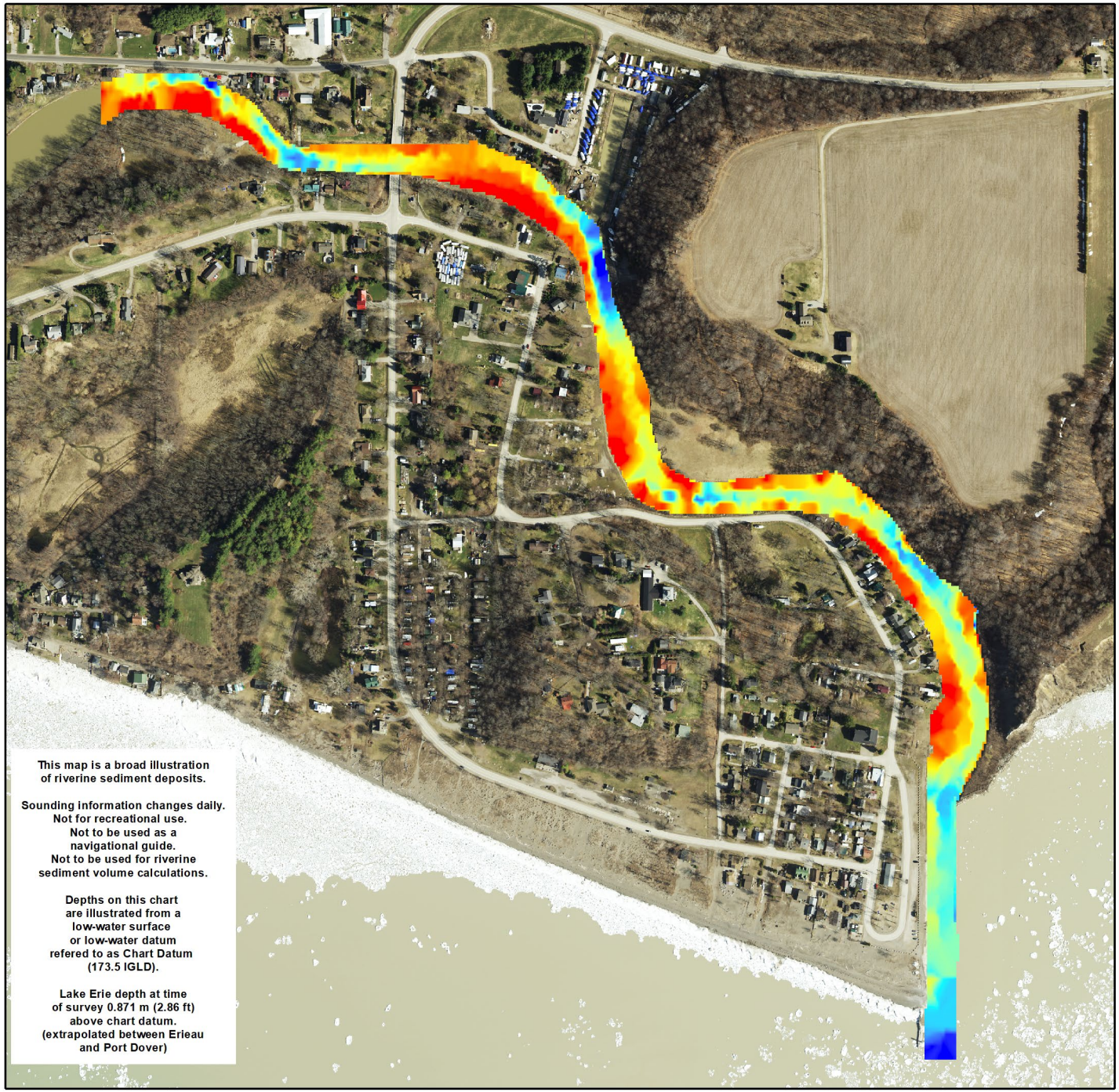
The lower flow summer season, provided the opportunity for the channel to deposit sediment in some of the creeks persistent depositional zones (inside bends and wider channel areas) within the Hamlet of Port Bruce. The expected fall sediment migration (higher flowe) and the channel morphological equilibrium may allow the creek to maintain a suitable hydrological conveyance and characterized thalweg within the lower reaches of the sounding area of the Catfish Creek within Port Bruce.

RECCOMENDATION:

That, the channel sounding observations described in Report 91/2023, be received as information at this time.

D. Ondrill

For Peter Dragunas,
Water Management Technician



This map is a broad illustration of riverine sediment deposits.

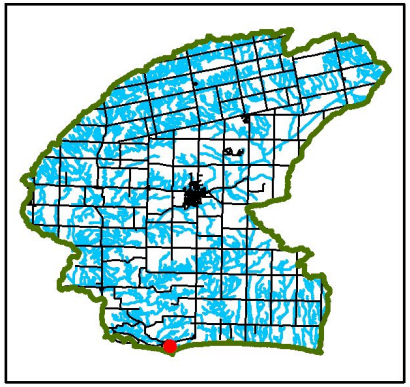
Sounding information changes daily.
Not for recreational use.
Not to be used as a navigational guide.
Not to be used for riverine sediment volume calculations.

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

Lake Erie depth at time of survey 0.871 m (2.86 ft) above chart datum. (extrapolated between Erieau and Port Dover)

CATFISH CREEK CONSERVATION AUTHORITY

Port Bruce
October 23, 2023
Sounding



Feet

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8
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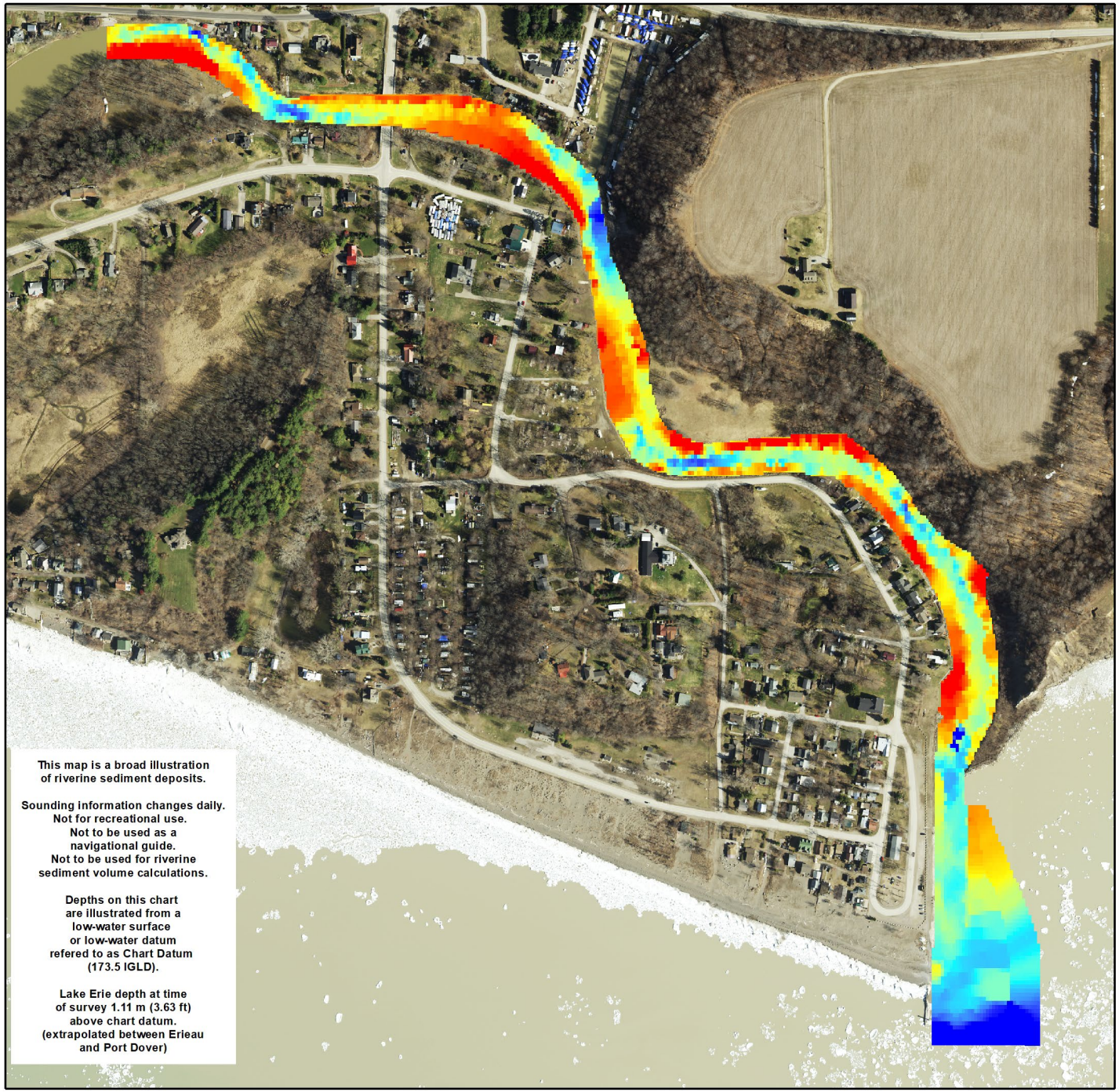
Data Sources: NRVIS, DFO, CCCA
CCCA GIS
October 24, 2023



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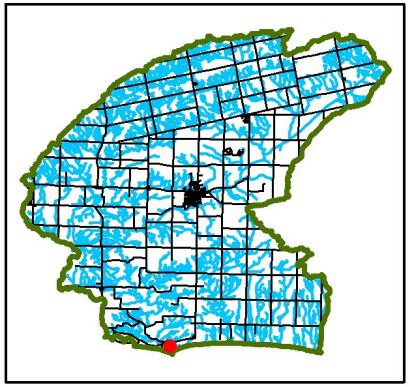
Depths on this chart are illustrated from a low-water surface or low-water datum refered to as Chart Datum (173.5 IGLD).

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

CATFISH CREEK CONSERVATION AUTHORITY

Port Bruce
July 10, 2023
Sounding



Feet

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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. Catfish 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.