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Weston Cross

BLUF: Study of Lake Ontario and Lake Erie sediment transport processes has resulted in a treasure trove of data. Refinement of data and ease of access to interested parties is the next step in communicating with stakeholders and landowners

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Challenges:

- **Multiple states/municipalities/landowners across 3 states**
- **Differing levels of complexity to existing dataset and methods of handling results**
- **Complex and varied system**

Objectives:

- **Consolidate varying datasets into centralized format and location**
- **Improve output resolution to make data more meaningful on a local basis**
- **Roll the data out where it can be utilized by those involved in land use and coastal planning**

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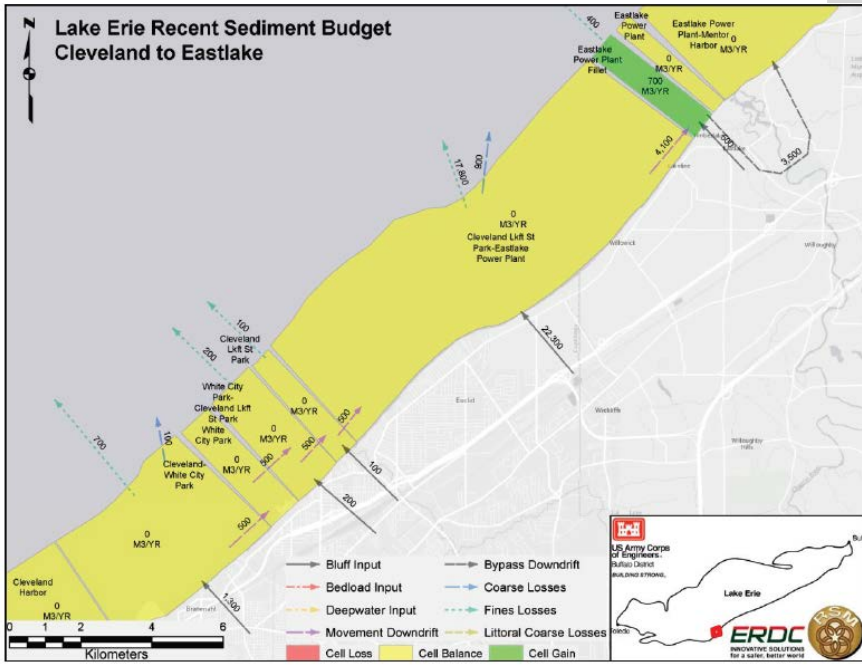
Approach:

- Assess current datasets for accuracy and completeness
- Modify datasets as necessary to fit into 1-km resolution
- Coordinate with ERDC/Bowhead to modify SBAS to store necessary data types



Tools/Data Used:

- 2011 Lake Ontario Sediment Budget by Baird & Assoc.
- 2016 Lake Erie Sediment Budget by USACE
- SBAS

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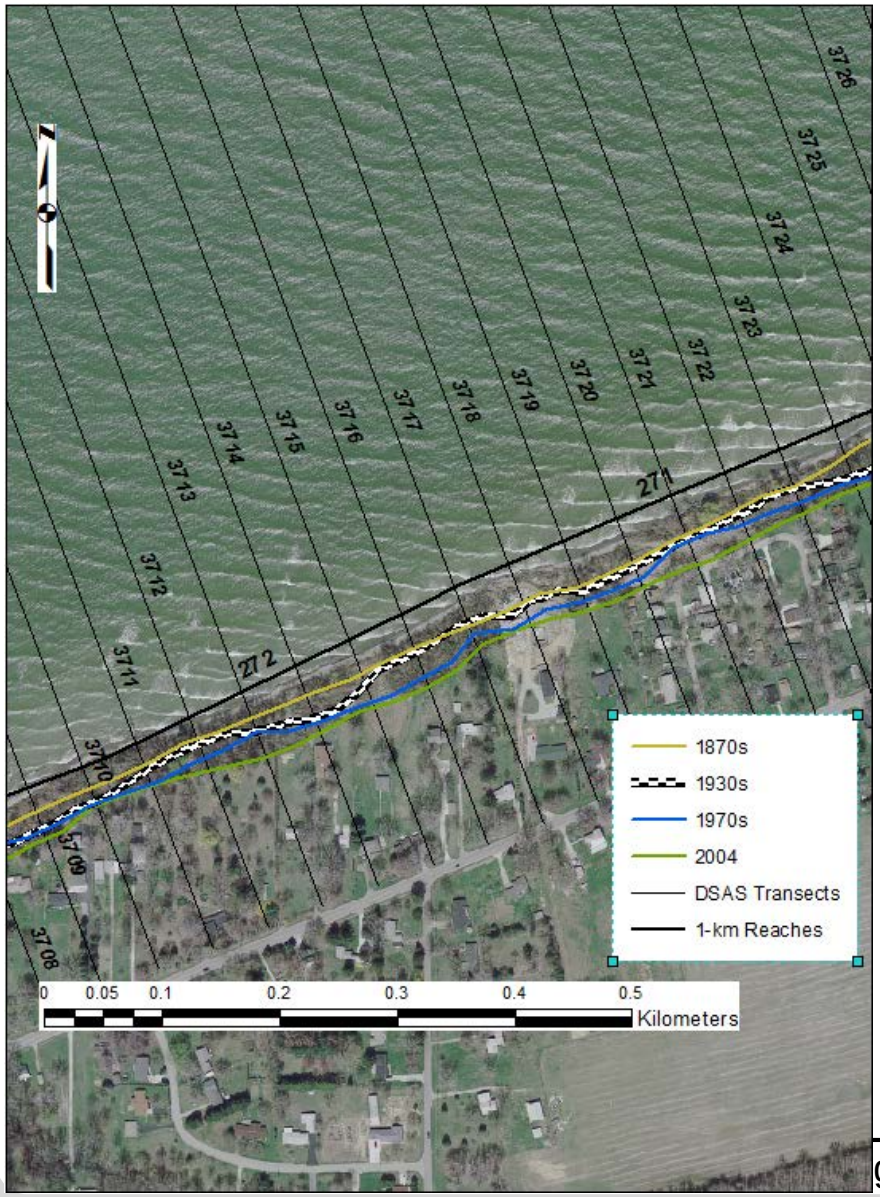

Sediment Source: Bluff Recession

Approach

- The Digital Shoreline Analysis System (DSAS) run to compute transects spaced 50m and determine retreat rates
- Shoreline divided into a series of 1-km reaches (Stewart 1999)
- Bluff erosion rates overlain with 1-km reaches to determine an average retreat rate for the reach

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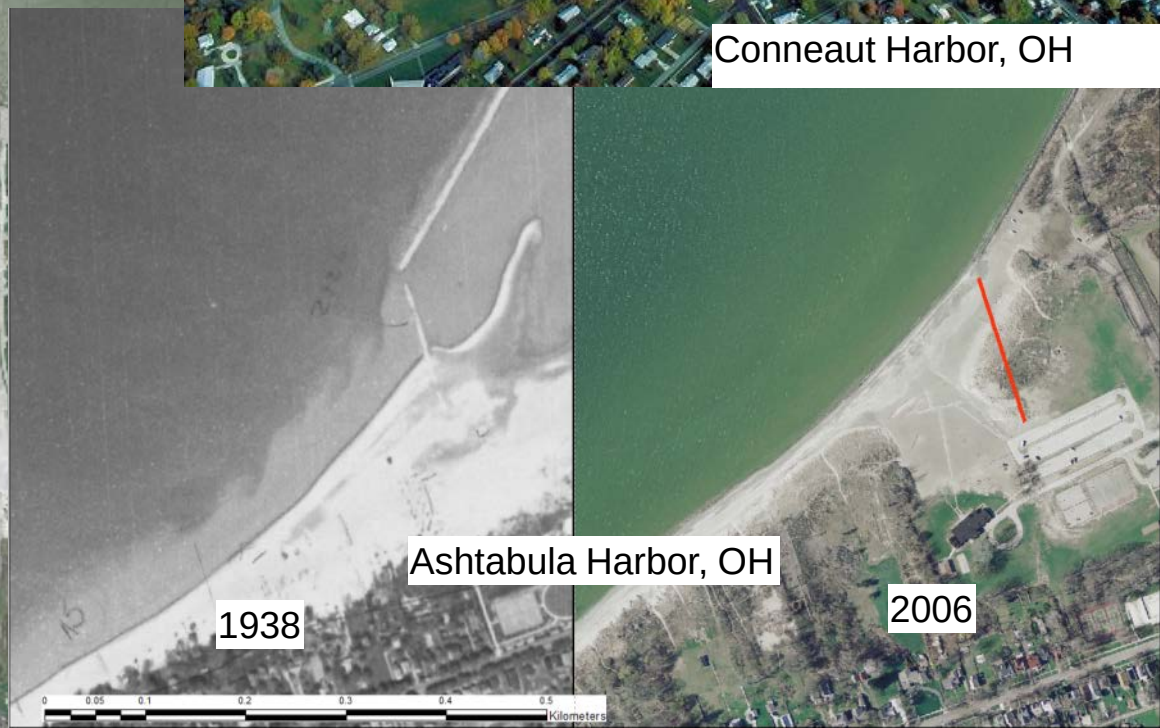
Sediment Sink: Trapping at Harbor Mouths



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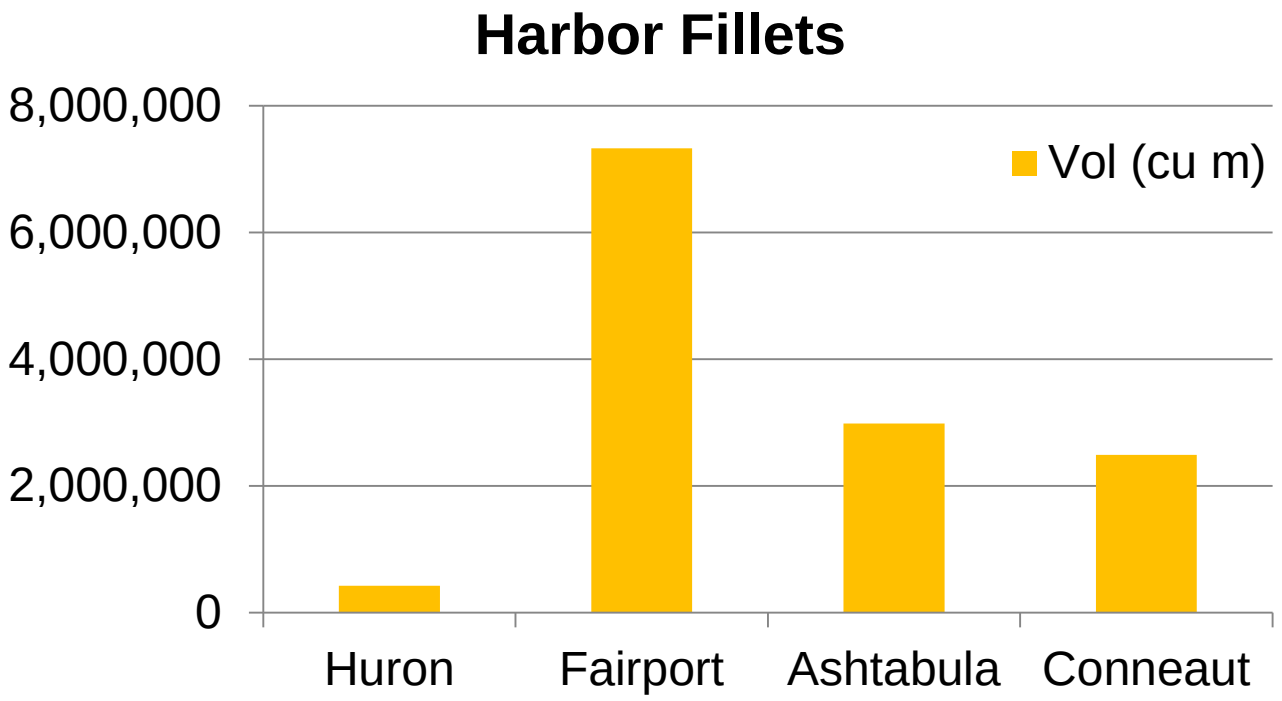
Sediment Sink: Trapping at Harbor Mouths

- **Greatest loss of sed. from littoral system over 150 years**
- **27 harbors, power plants with structures**



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District/Other USACE PDT Members

- Weston Cross
- Mike Draganac
- Craig Forgette
- Shanon Chader
- Rose Dopsovic

Leveraging/Collaborative Opportunities

- Expansion to the wider Great Lakes Sediment Budget work
- Coordination with stakeholders for expansion of data coverage

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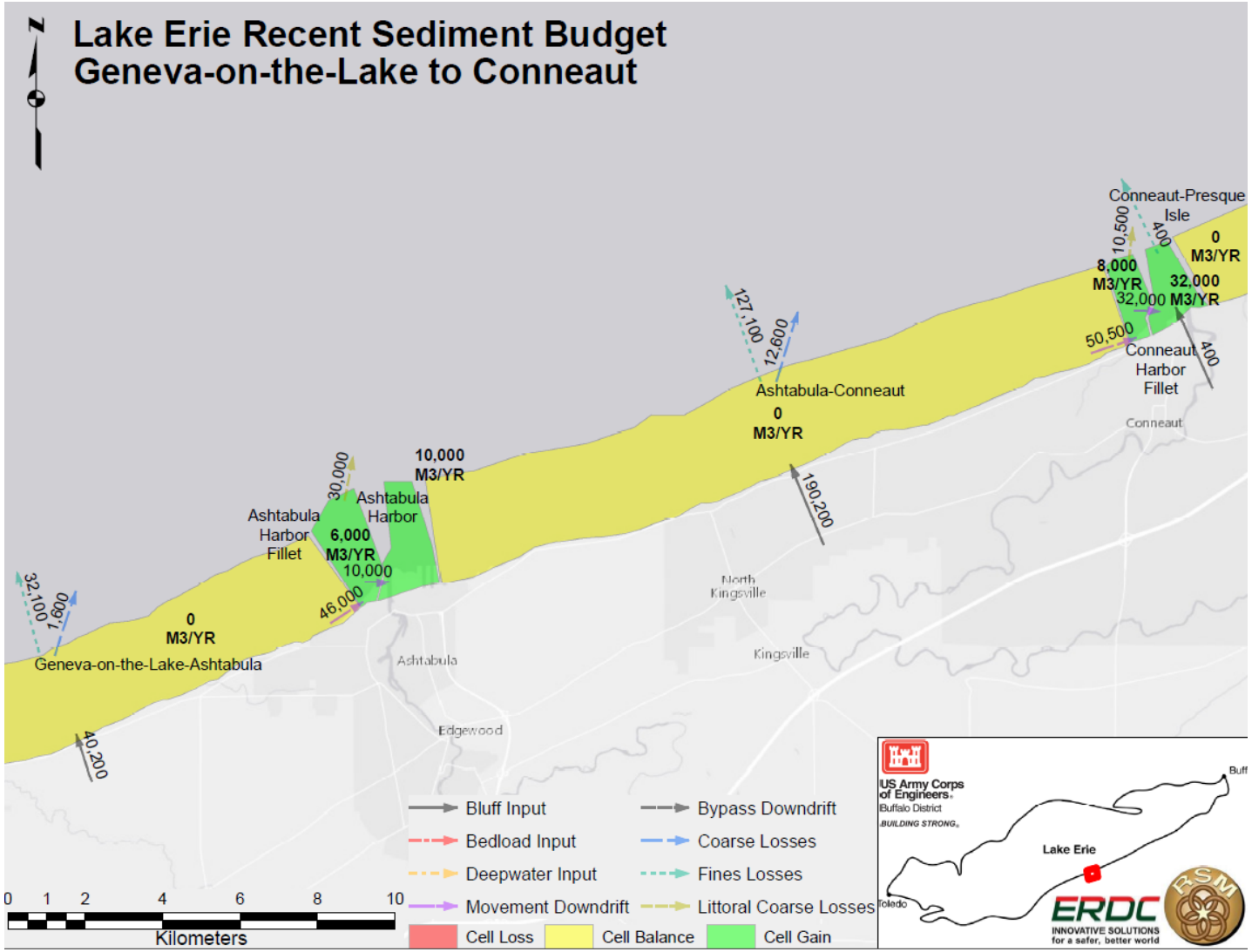

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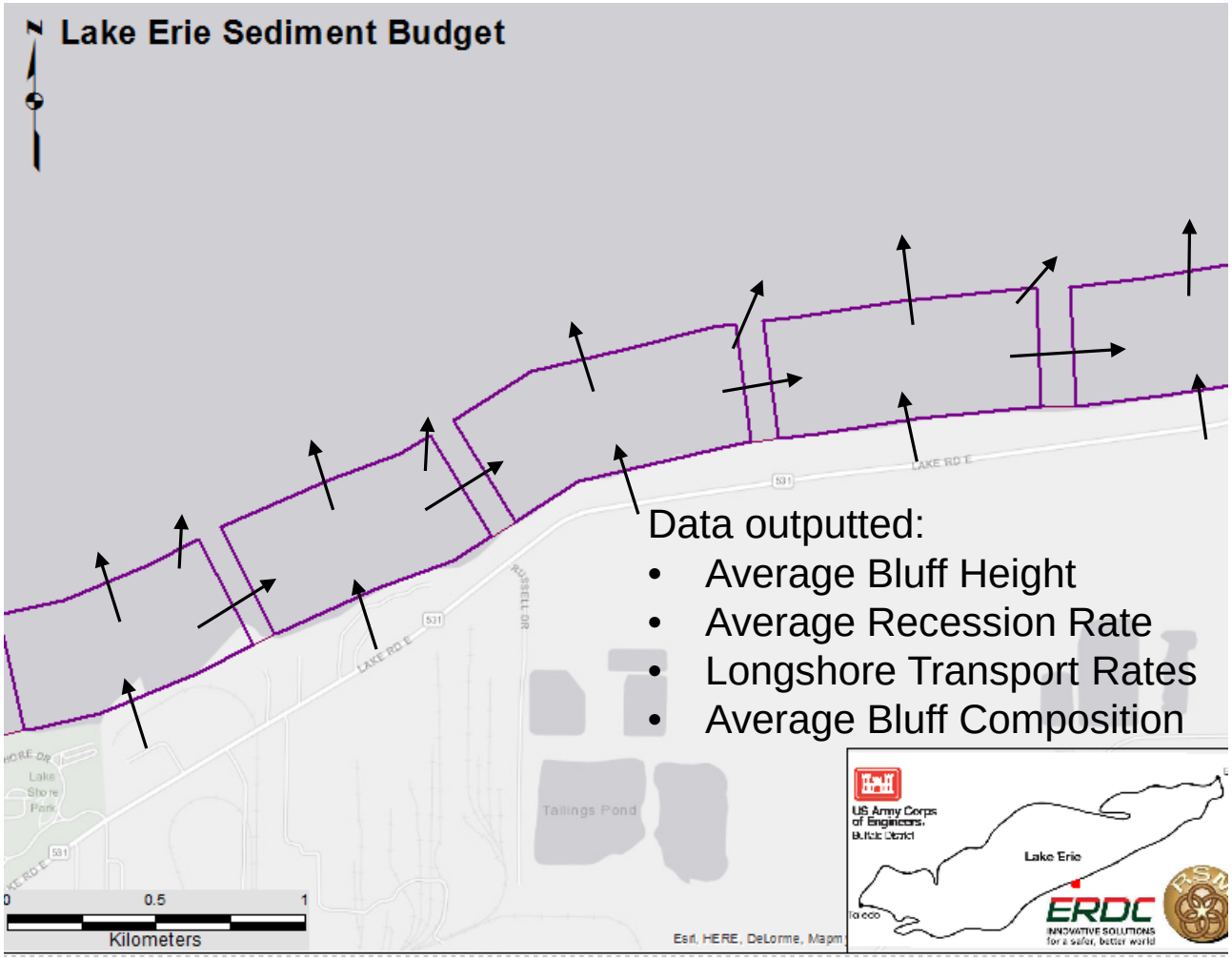

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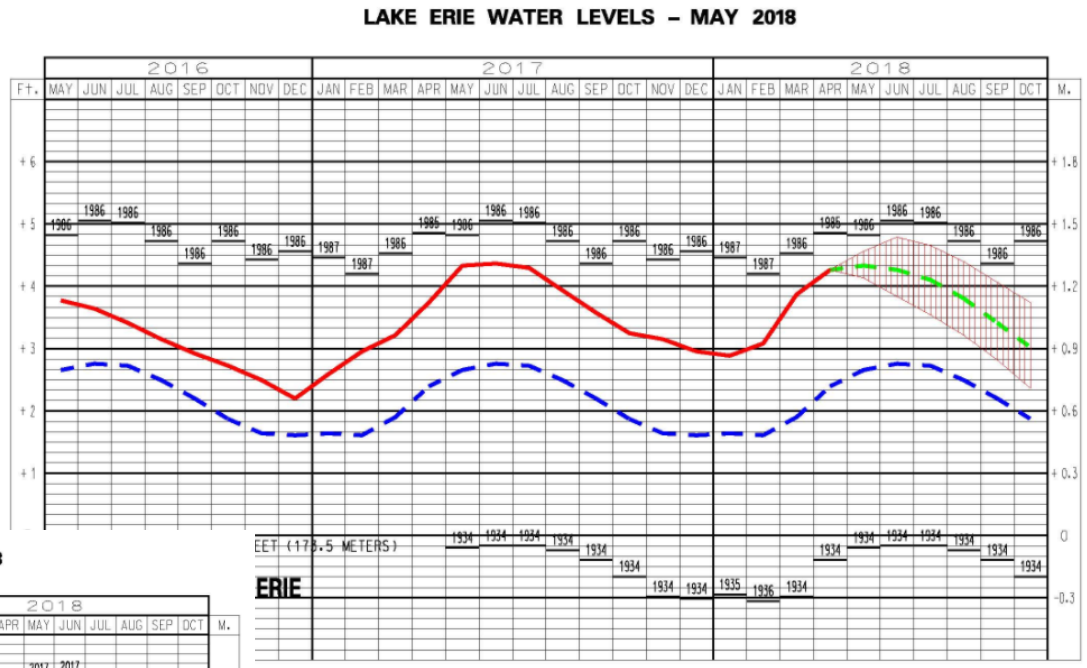
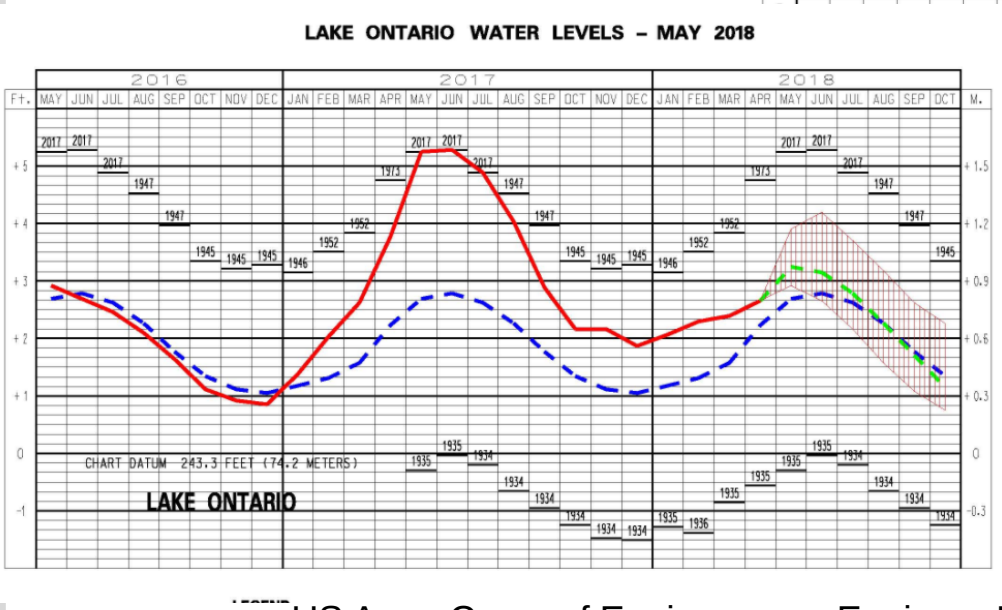
Stakeholders/Partners

PADCNR
ODNR
NYSDEC
The Nature Conservancy
Local governments
Property owners/users





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Accomplishments/Deliverables

Lessons Learned

- **2016 Lake Erie Sediment Budget widely used in coastal planning**
- **Great interest in data availability from stakeholders/USACE**

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How is this project benefiting the USACE and Nation?
(efficiency, monetary, technical, relationship building, outreach, etc.)
(Volume of sediment to be managed, Acres created, etc)

- **Increased awareness among stakeholders about coastal design parameters**
- **Identification of sources of sediment for bypassing/beneficial reuse**
- **Use in USACE coastal design**