



Department of
Environmental
Conservation



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Buffalo River Area of Concern Restrictions on Dredging Activities Beneficial Use Impairment Removal

August 18, 2022

Purpose

To present the case and supporting data for removing the Restrictions on Dredging Activities Beneficial Use Impairment for the Buffalo River Area of Concern.



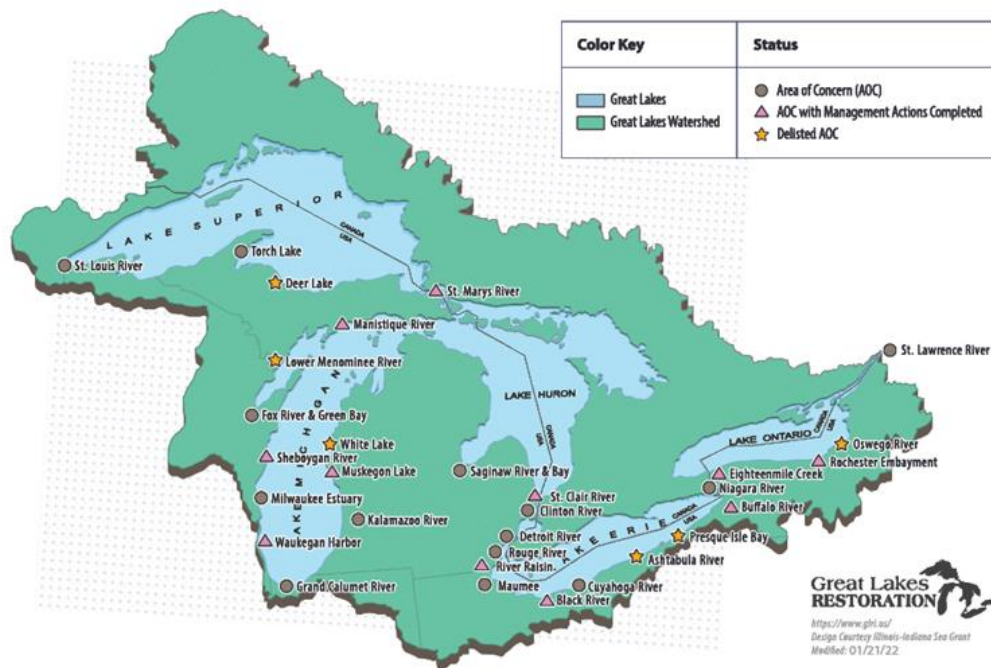
Presentation Outline

1. Great Lakes Areas of Concern (AOC) Program
2. The Remedial Action Plan (RAP) Process
3. Beneficial Use Impairment (BUI) Designation and Removal
4. Closing Items / Q&A

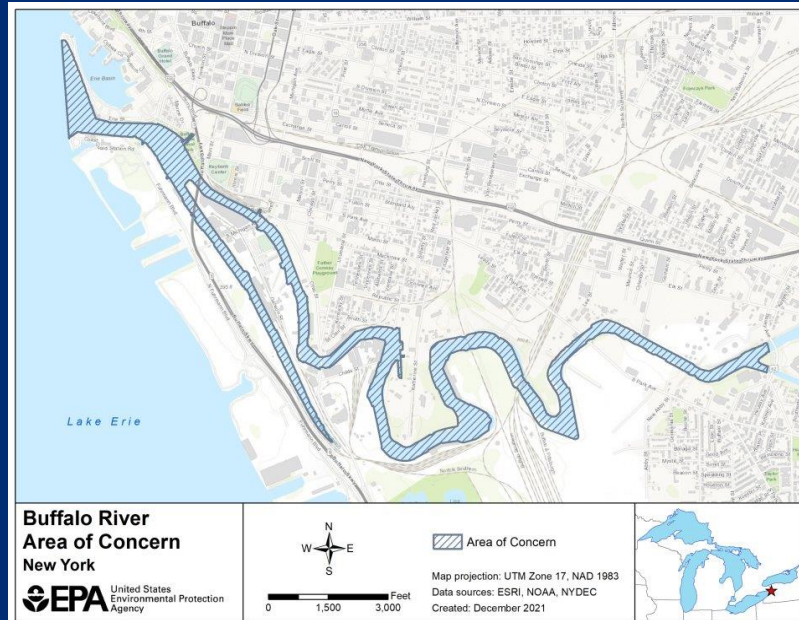
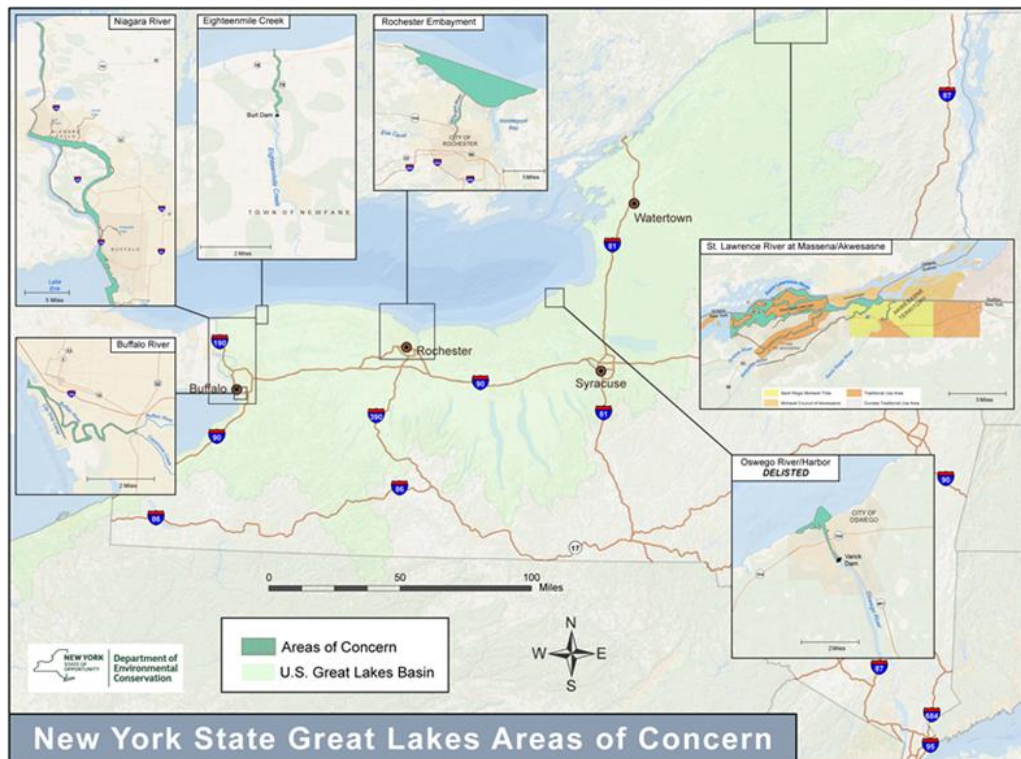


U.S Great Lakes AOCs

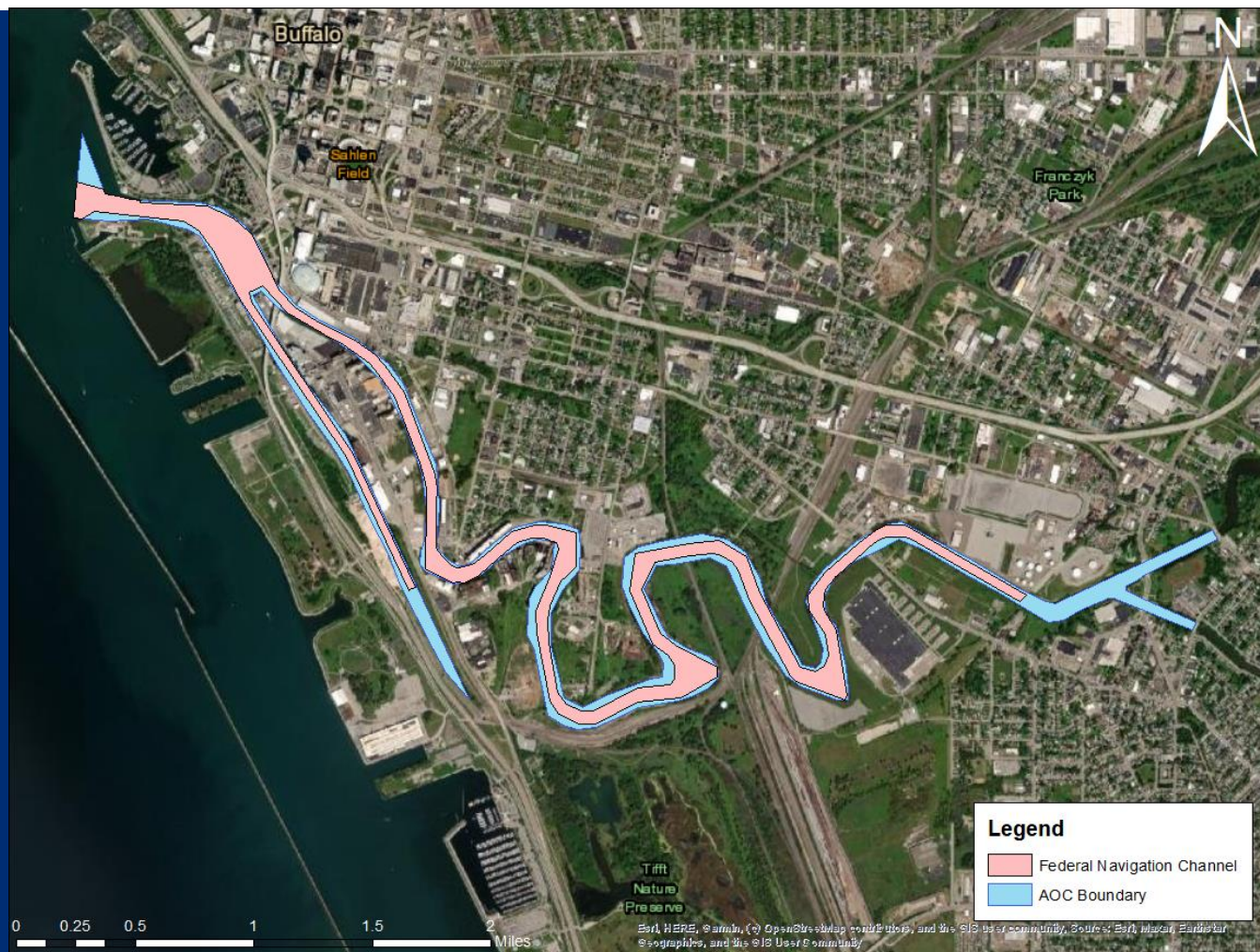
U.S. Great Lakes Areas of Concern



New York State Great Lakes AOCs



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Beneficial Use Impairments (BUIs)

“A BUI is a reduction in the chemical, physical or biological integrity of the Waters of the Great Lakes sufficient to cause any of the following”:

Restrictions on Fish and Wildlife Consumption
Degraded Fish and Wildlife Populations
Bird or Animal Deformities or Reproduction Problems
Restrictions on Dredging Activities
Restrictions on Drinking Water Consumption
or Taste and Odor Problems
Degradation of Aesthetics
Degradation of Phytoplankton and Zooplankton Populations

Tainting of Fish and Wildlife Flavor
Fish Tumors or Other Deformities
Degradation of Benthos
Eutrophication or Undesirable Algae

Beach Closings
Added Costs to Agriculture/Industry
Loss of Fish and Wildlife Habitat



BUI Process



Stage I & II Remedial Action Plan (RAP)

Stage I & II Remedial Action Plan (RAP) published in November 1989

Root Problems/Causes of BUIs identified as contaminated bottom sediments with metals and cyanide
Plan for Addressing Root Problems: Remediation at inactive hazardous waste sites, assess extent of sediment contamination.



Rationale for *Restrictions on Dredging Activities* BUI

- Presence of multiple contaminants at concentrations exceeding open lake disposal criteria
- Primary contaminants of concern (COCs) include arsenic, barium, copper, iron, lead manganese, zinc, and cyanide (PAHs, PCBs, and mercury were later added)



Removal Criteria for *Restrictions on Dredging Activities* BUI

Sediment dredged from the federal navigation channel does not require special dredged material management measures or use of a USACE confined disposal facility due to chemical contamination.¹

¹As has always been the case, dredging activities outside of the federal navigation channel will be required to follow the current or future NYSDEC/U.S. Army Corps of Engineers/U.S. Environmental Protection Agency permitting processes and meet the associated standards.

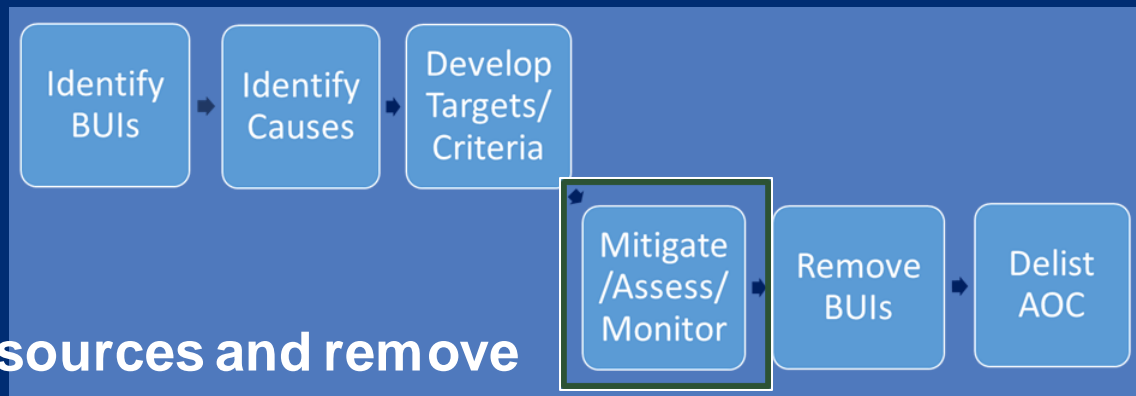


BUI Removal Under AOC Program

- A. Removal targets/criteria met, and beneficial use has been restored.*
- B. Impairment is not limited to the AOC but rather is typical of lake-wide, region-wide, or area-wide conditions.**
- C. Impairment is caused by sources outside the AOC.**
- D. Impairment is due to natural rather than human causes.**



Restrictions on Dredging Activities



Mitigate – address upland sources and remove contaminated river sediments

Assess – bottom sediments to determine if contaminants still exceeded remedial goals

Monitor – sediments to ensure remedial goals are met



Great Lakes Legacy Act

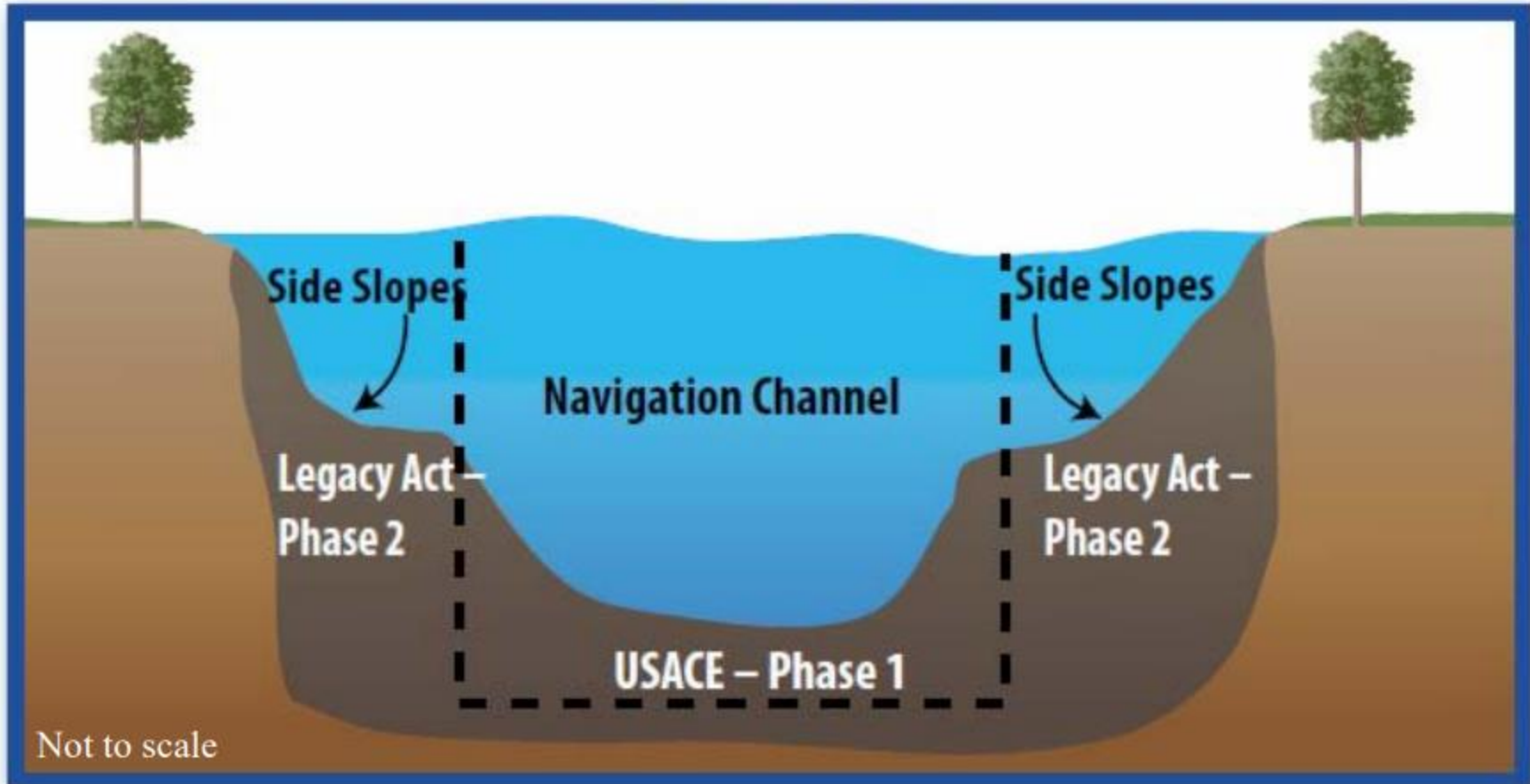
2011 - Feasibility Study completed to determine best alternative for removing contaminated sediments. USACE conducts backlog of federal navigation channel dredging (though not under GLLA)

2013 – Remedial design complete and dredging in areas outside of federal navigation channel initiated

2014 – tip of City Ship Canal capped



Cross-Section of the Buffalo River





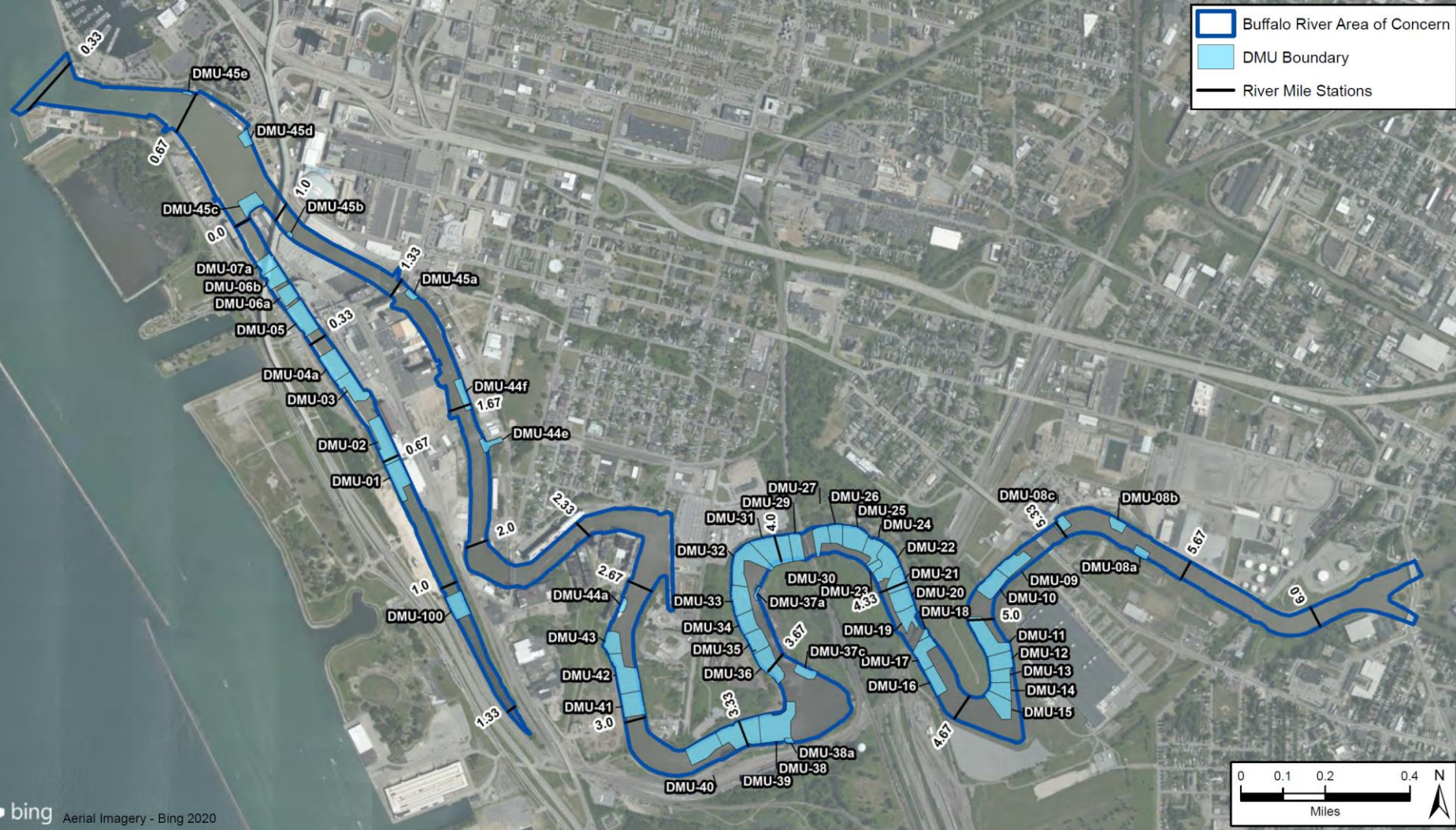
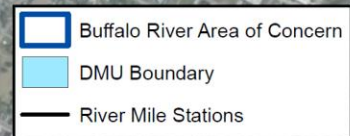
Great Lakes Legacy Act cont.

2017 –Year 2 Verification monitoring conducted testing for 4 COCs : Lead, Mercury, PCBs, & PAHs

2020 - Year 5 verification monitoring conducted for same 4 COCs

2021 – DMU 16 & 17 found to have elevated PAH concentrations. Partial dredge and cover placed outside the navigation channel.





USACE 2018 & 2021 Sampling

2018 – USACE conducts sediment sampling to analyze suitability for open water placement in Lake Erie & status of Restrictions on Dredging Activities BUI. 25 out of 30 samples met project criteria for lead, mercury, PCBs, and PAHs

2020 – USACE conducts O&M sampling post 2020 dredging. Remaining 5 sites from 2018 met project criteria for open water placement and beneficial reuse.



Beneficial Reuse Analyses

2015 – upper Buffalo River sediments tested for reuse for Niagara River AOC Unity Island project (and used in 2018).

2018 – Aquatic beneficial reuse analysis conducted by USACE. Sediments met CWA Section 404(b)(1) Guidelines for open-water placement criteria therefore approved for aquatic beneficial reuse.

2022 – Upland beneficial reuse analysis conducted by USACE. dredged material is reviewed in accordance with NYSDEC's 6 NYCRR Part 360, Section 360.12(e) Residential and Groundwater SCOs. Samples were below SCOs.



Restrictions on Dredging Activities

Summary:

- Remedial activities to remove contaminated sediments are a success. Sediments in Buffalo River AOC meet project remedial goals.
- Sediments meet criteria for open water placement and beneficial reuse.
- BUI removal criteria have been met; BUI can be removed.



Restrictions on Dredging Activities

Next Steps:

- BUI Removal Report available for 30 days on Buffalo Niagara Waterkeeper's website.
- Submit final report and seek concurrence from EPA.
- BUI removal in September.



Buffalo River AOC – Recognizing Partners



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Questions?

Thank You

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