

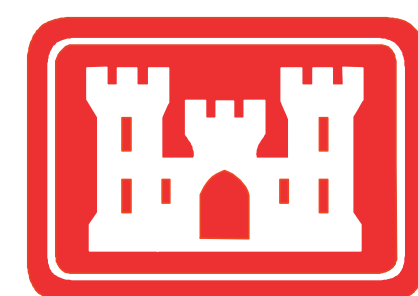
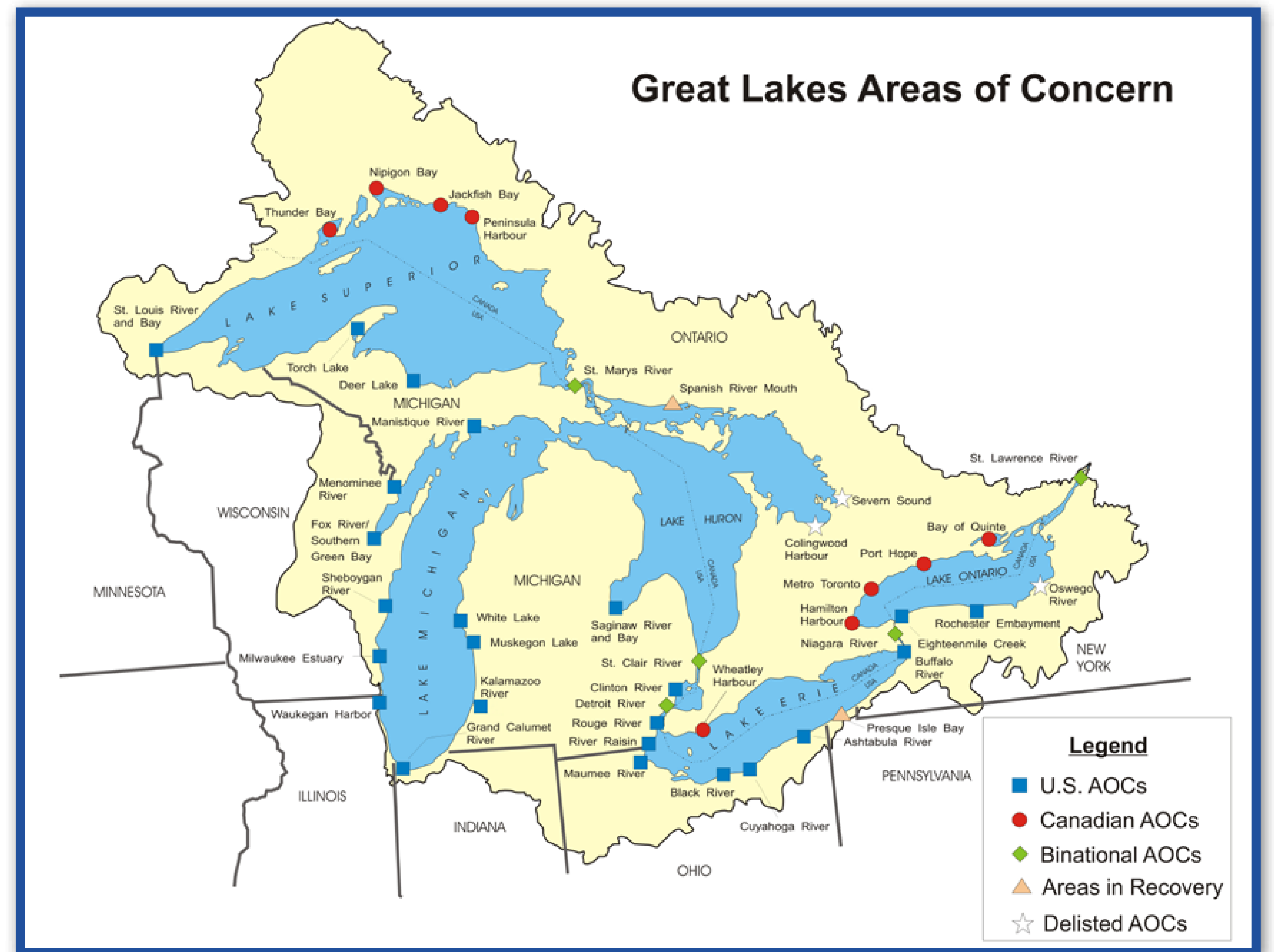
The Great Lakes Legacy Act

Goal:

Accelerate the pace of sediment remediation in U.S. Areas of Concern (AOCs)

Mechanism:

Use partnerships as an innovative approach to achieving sediment cleanups



US Army Corps
of Engineers
Buffalo District



Buffalo River Area of Concern (AOC)



Buffalo River Restoration Partnership

Decades of industrial and municipal discharges have polluted the Buffalo River, and the subsequent decline of industry left the region with abandoned, contaminated properties and deteriorating facilities.

The Buffalo River Restoration Partnership is poised to address a major impediment to restoration, contaminated sediment, so that the river can once again add to a vibrant revitalized Buffalo.

The Buffalo River Restoration partners, including the U.S. Environmental Protection Agency (USEPA), United States Army Corps of Engineers (USACE), New York State Department of Environmental Conservation (NYSDEC), Honeywell, and Buffalo Niagara RIVERKEEPER® (BNR) have been collaborating for several years on plans to clean up the Buffalo River to facilitate ecological restoration and economic development around this natural urban resource.

Projects to restore the Buffalo River

- Great Lakes Restoration Initiative (GLRI)
- Great Lakes Legacy Act (GLLA)
- Brownfield Cleanups
- Combined Sewer Overflows (CSOs) and Water Quality

Redevelopment

- Buffalo Brownfield Opportunity Area (BOA)
- Green Energy Corridor
- RiverBend
- Erie Canal Harbor
- Greenway Trail and Public Access

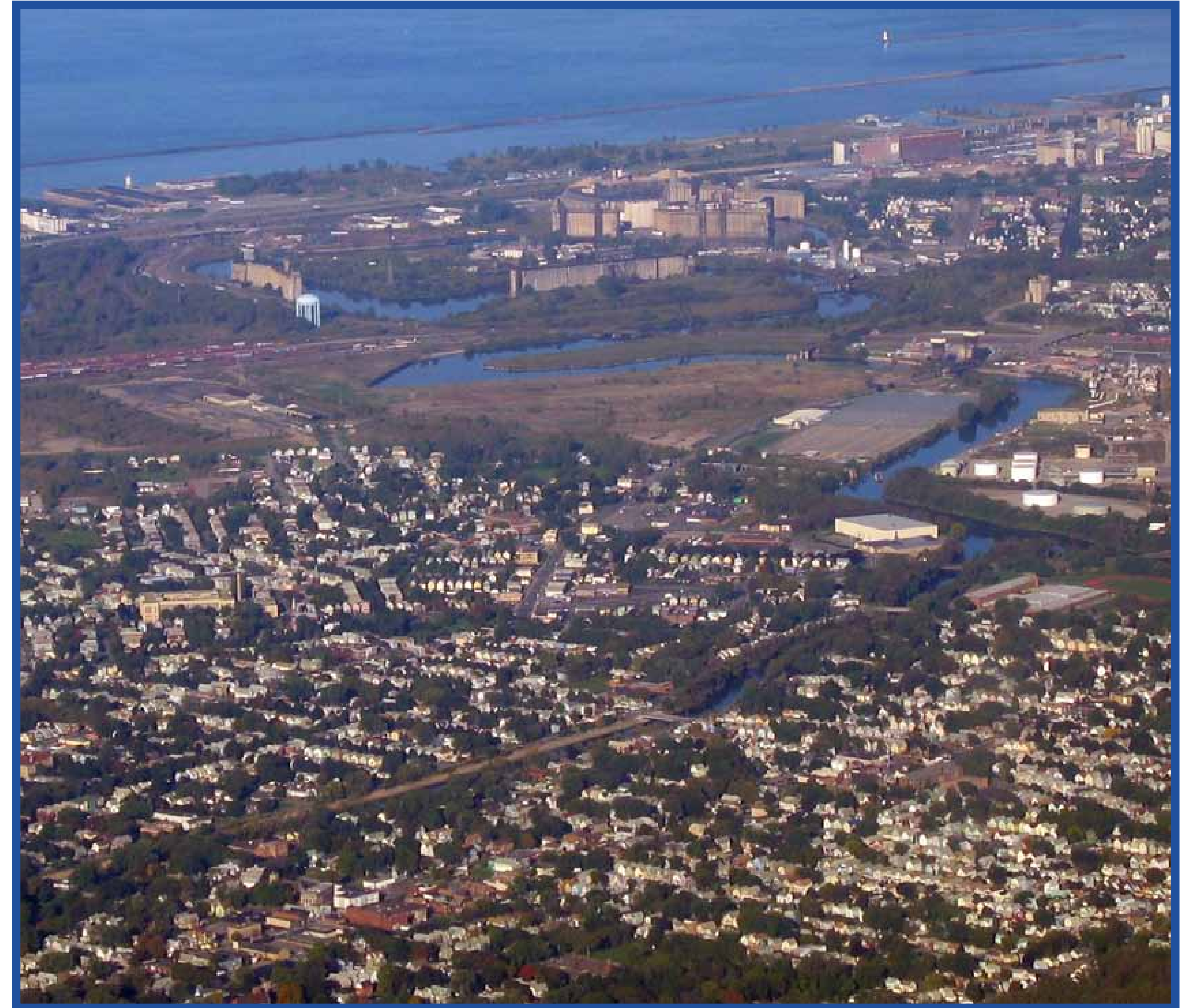
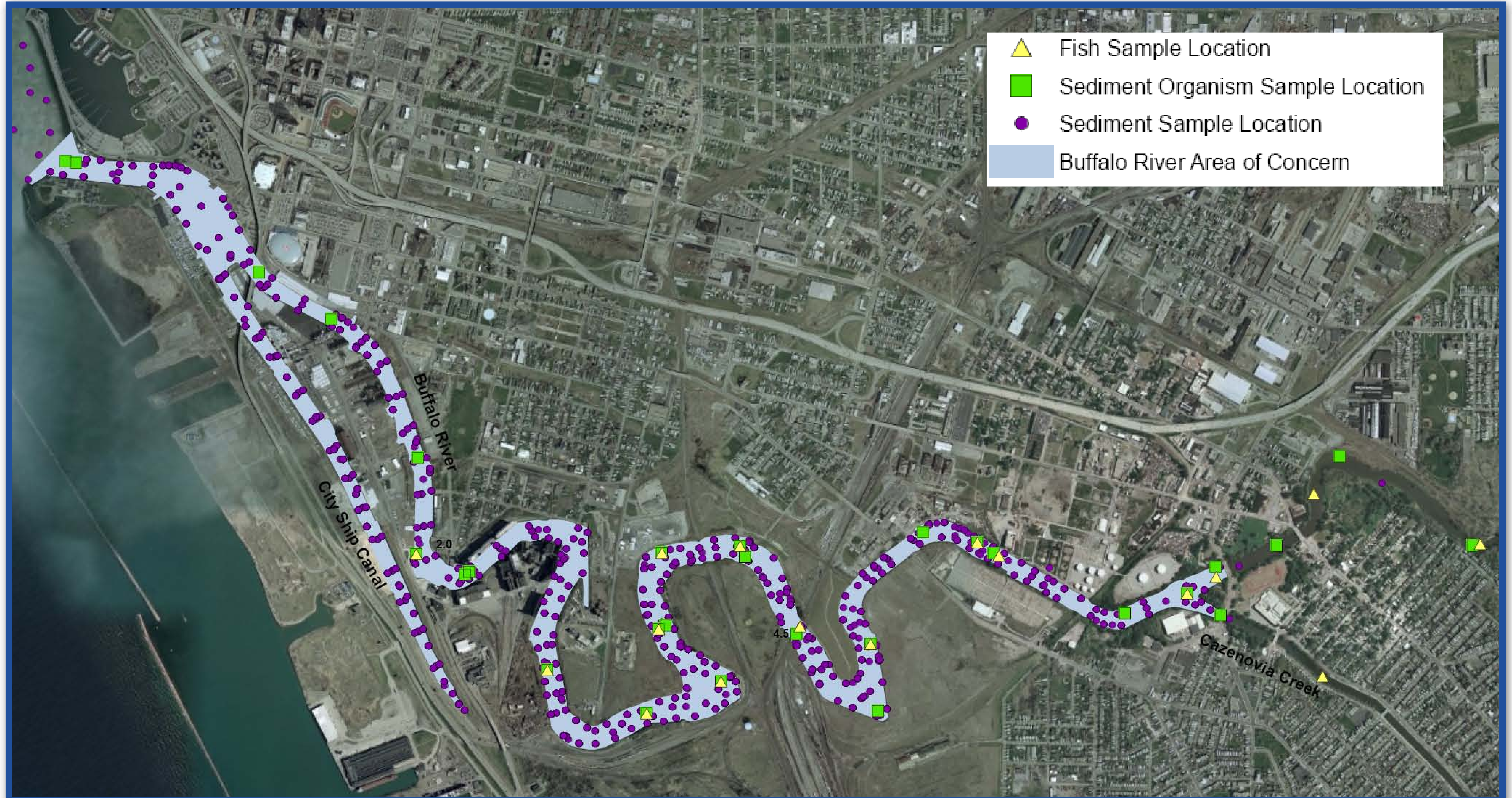


Photo courtesy of Patricia Manley

Sediment and Biological Sample Locations



Feasibility Study for Buffalo River Restoration

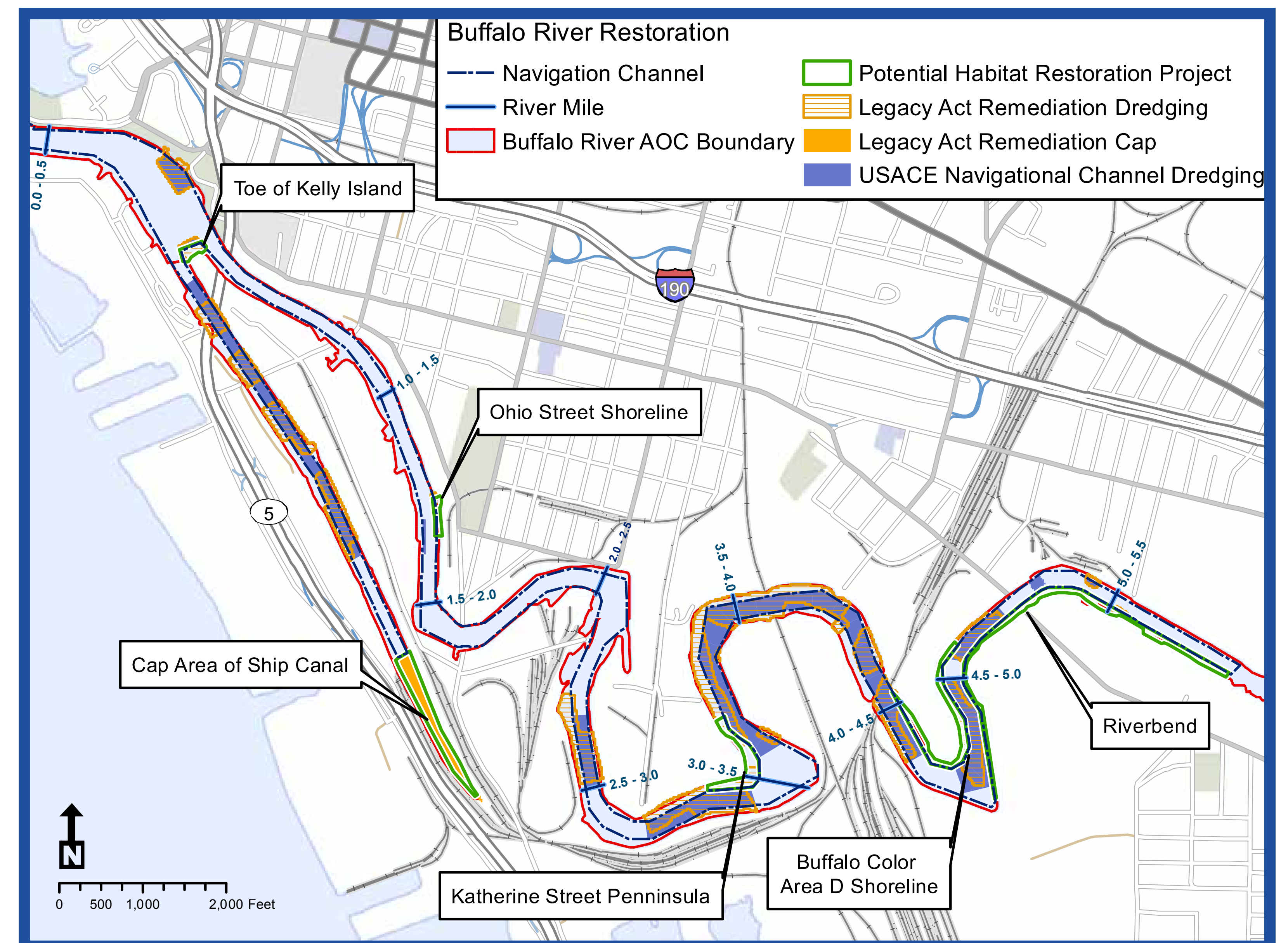
Summary of Feasibility Study

The Feasibility Study (FS) identifies and evaluates dredging, capping, and restoration technologies that would address contamination within the Buffalo River AOC. The FS also identifies the contaminants found in the AOC and the alternatives that most cost-effectively would address the potential ecological or human health risks associated with contaminated sediments. Details about the five alternatives that were evaluated, which ranged from “no action” to dredging and capping, are found in the FS.

Multiple contaminants exist in the Buffalo River sediments, including but not limited to polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), Lead (Pb), and mercury (Hg). In general, the highest concentrations are located in the subsurface sediments from River Mile 3.5 to 5.5 and in the City Ship Canal.

The FS outlines alternatives that would protect human health and the environment and also be cost effective. The proposed alternatives have been evaluated based on their potential to accomplish four objectives:

1. Reduce exposure to humans and wildlife from contacting sediment or through consuming fish by reducing the availability and/or concentration of contaminants;
2. Reduce exposure of wildlife and aquatic communities to harmful concentrations of contaminants;
3. Reduce the potential for confined disposal of future dredged sediments (for routine navigational, commercial, and recreational purposes) by reducing contamination; and
4. Implement a remedy that is compatible with the Buffalo River Remedial Advisory Committee's goal of protecting and restoring habitat and supporting wildlife.



Sediment Remedy Alternatives

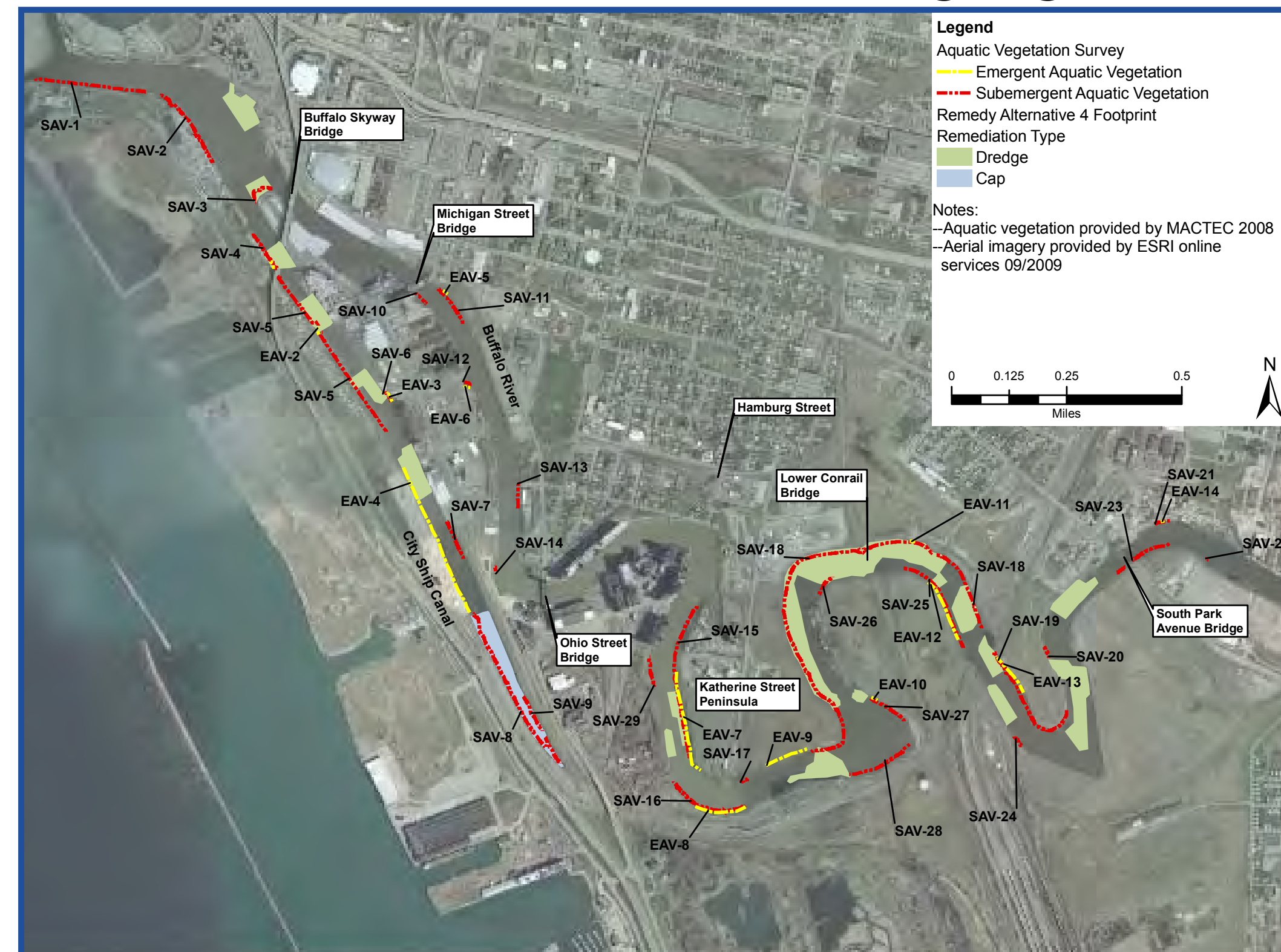
Alternative	Description	Estimated Volume of Sediment to be Removed	Estimated Cost (Million \$)
1. No Action	No remedial actions would be conducted.	0	\$0.0
2. Monitored Natural Recovery	Long-term monitoring is used to demonstrate the ability of naturally occurring processes to reduce the bioavailability and toxicity of chemicals in sediment.	0	\$2.5
3. Basic Dredging, Capping, Habitat Restoration	Targets the removal of all sediments with elevated contaminant concentrations. Capping is used to isolate contaminated sediments at the end of the City Ship Canal.	1,750,000	\$74
4. Focused Dredging, Capping, Habitat Restoration	Targets the removal of contaminated sediment with the highest potential risk of exposure to humans and aquatic organisms. Sediment capping is used at the end of the City Ship Canal.	640,000	\$32
Preferred Remedy			
5. Enhanced Dredging, Capping, Habitat Restoration	Similar to Alternative 4, but also targets hot spot contamination in deeper sediments. Sediment capping is used at the end of the City Ship Canal.	820,000	\$39

Depiction of Remedy Alternatives

Alternative 3:
Basic Dredging



Alternative 4:
Focused Protectiveness Dredging

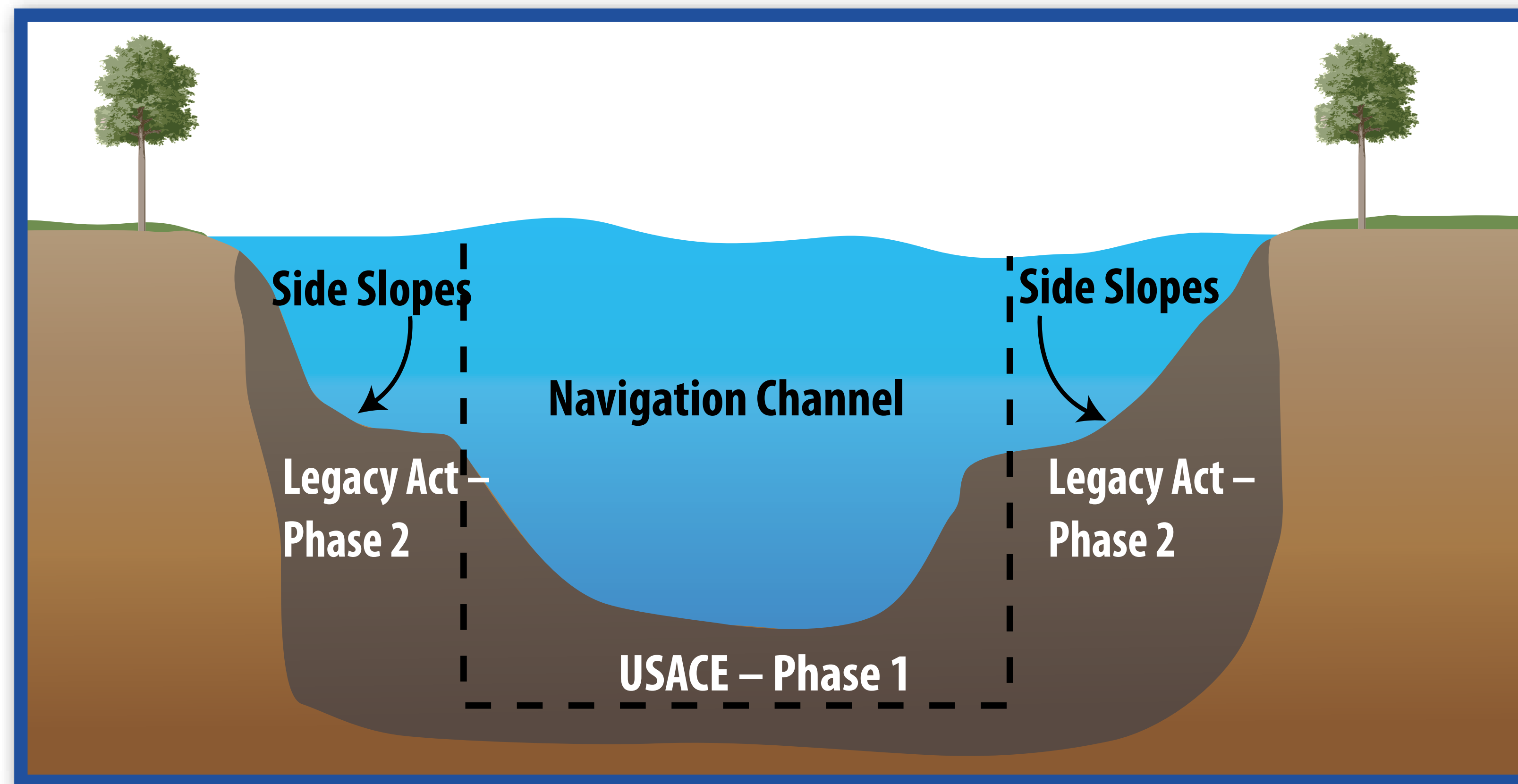


Alternative 5:
Enhanced Protectiveness Dredging

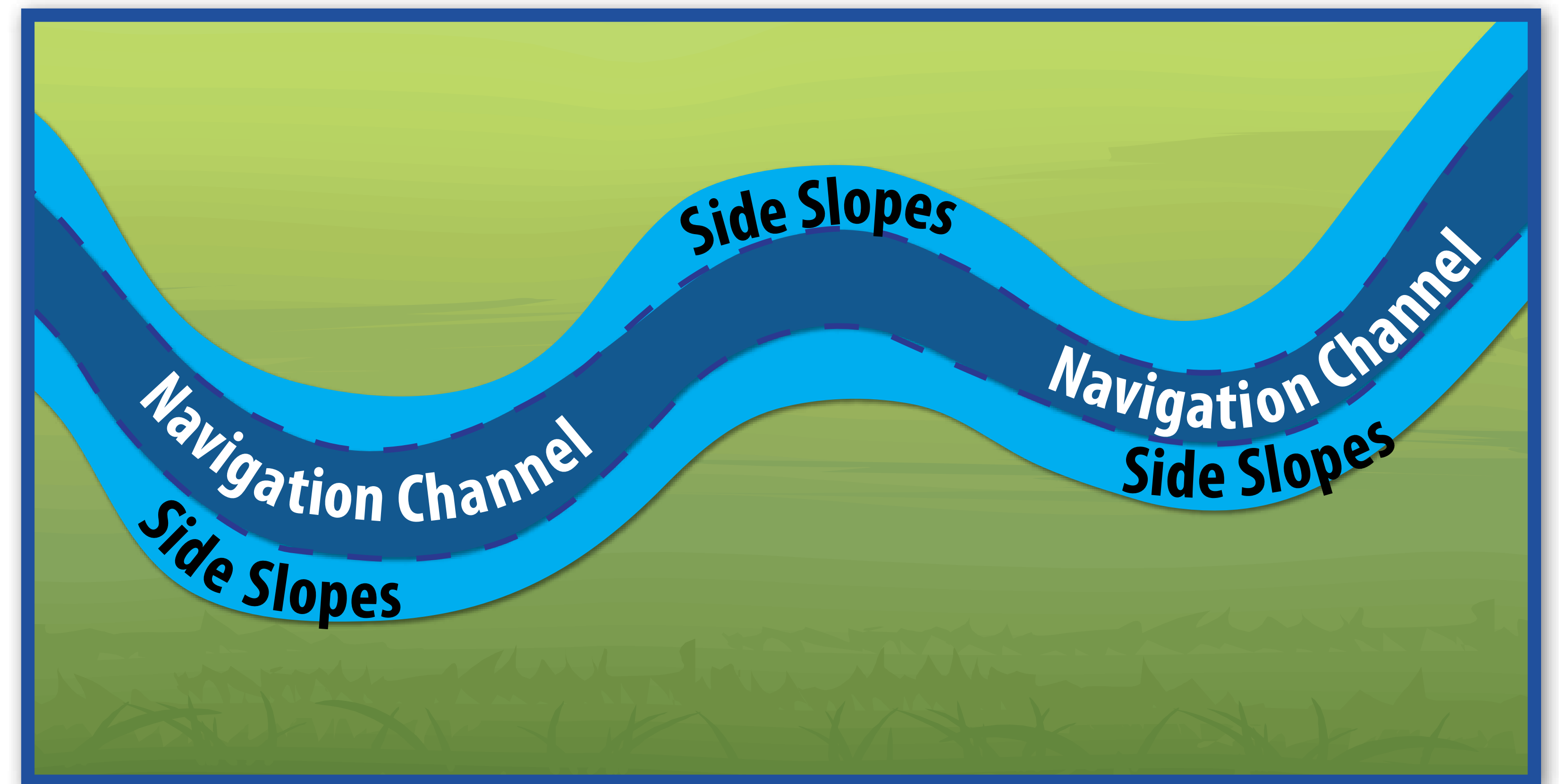


Buffalo River Dredging

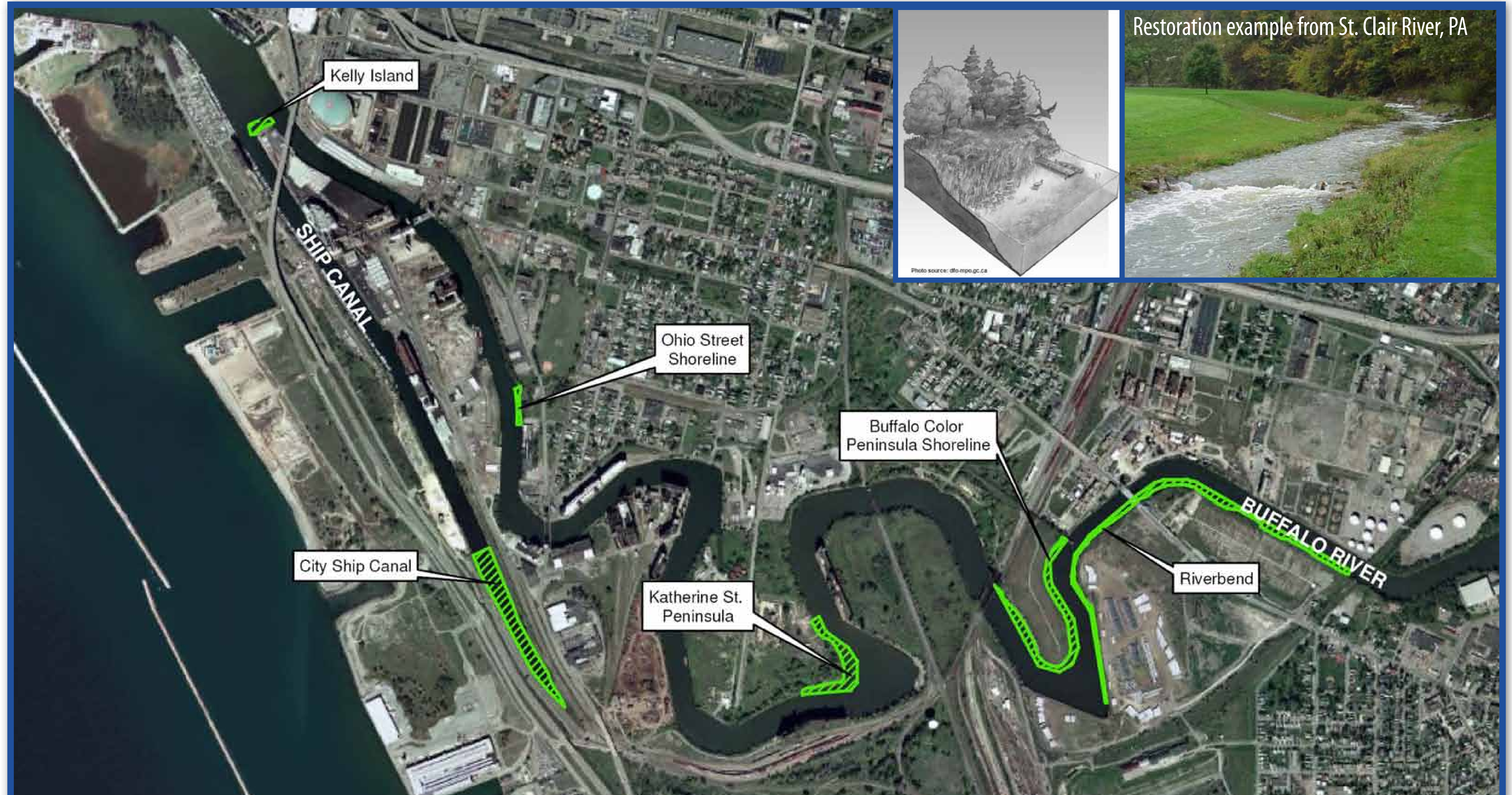
Cross-Section



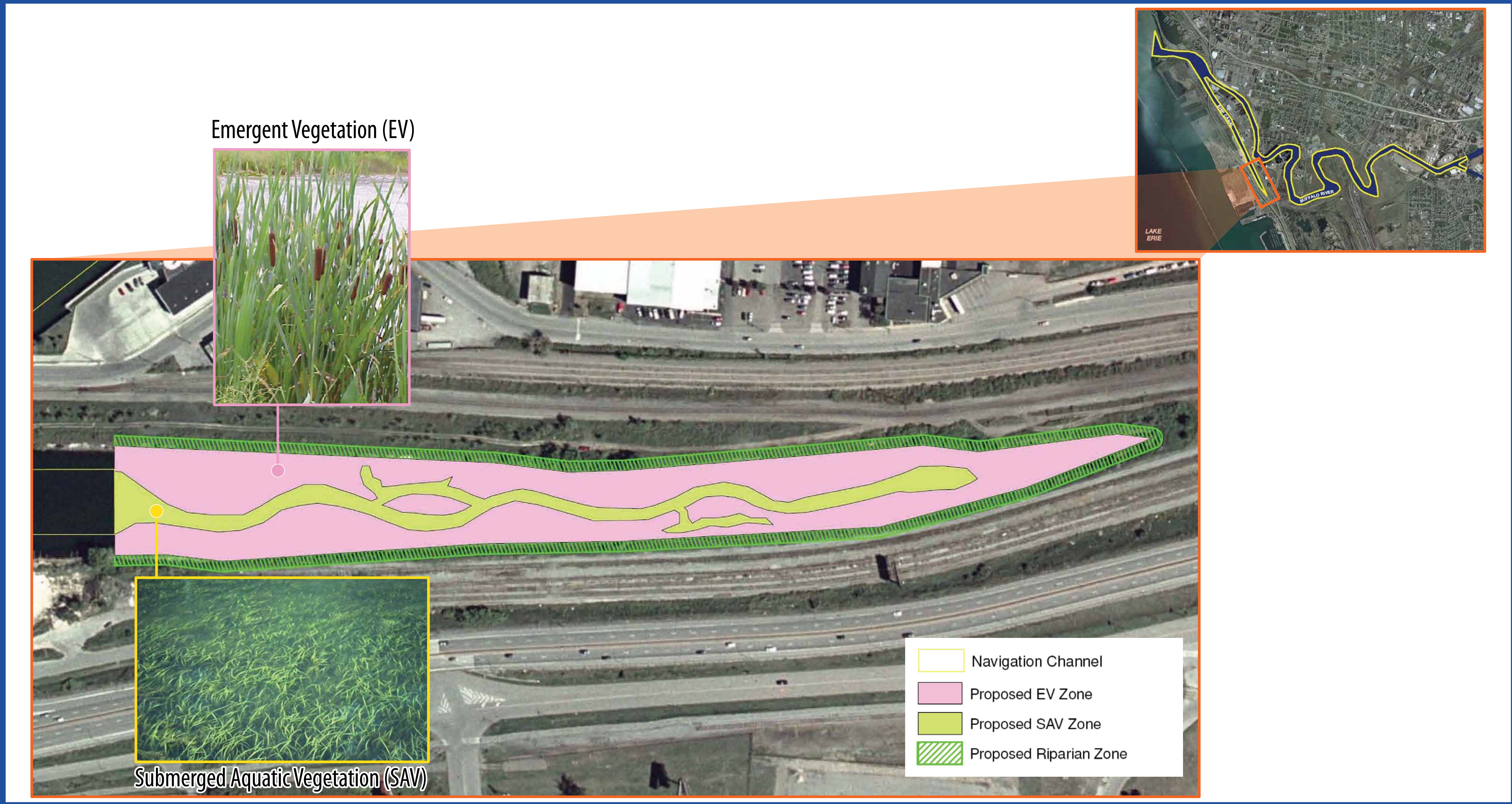
Planview



Potential Habitat Restoration Project Areas



Conceptual City Ship Canal Restoration Project



Buffalo River Timeline

Great Lakes Legacy Act (GLLA):

- Sampling of sediments to further understand contamination
- Buffalo River Restoration Plan available for public review and feedback
- Cleanup design underway

2011 – 2013:

- GLLA remedial engineering design activities (February 2011 – June 2012)
- GLLA dredging/capping (June 2012 – Nov 2013, work will stop over the winter months)
- GLRI and GLLA habitat restoration projects

2010

2011

2010-2011

Great Lakes Restoration Initiative (GLRI):

Buffalo Harbor dredging in the navigation channel by the U.S. Army Corps of Engineers (USACE)

- Project planning and communication
- National Environmental Policy Act review
- Engineering design activities

2011 Summer/Fall GLRI:

- USACE dredging operations in the navigation channel

Buffalo River Restoration

