Prevention of Aquatic Invasive Species into the Great Lakes

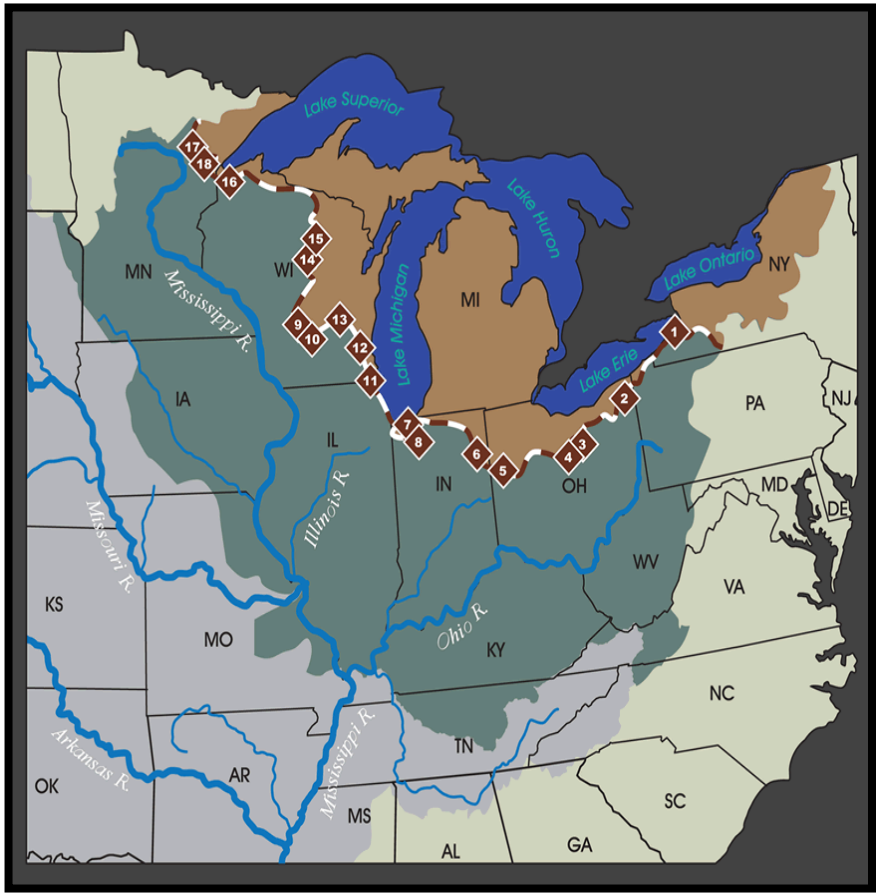
ODNR Division of Wildlife

John Navarro

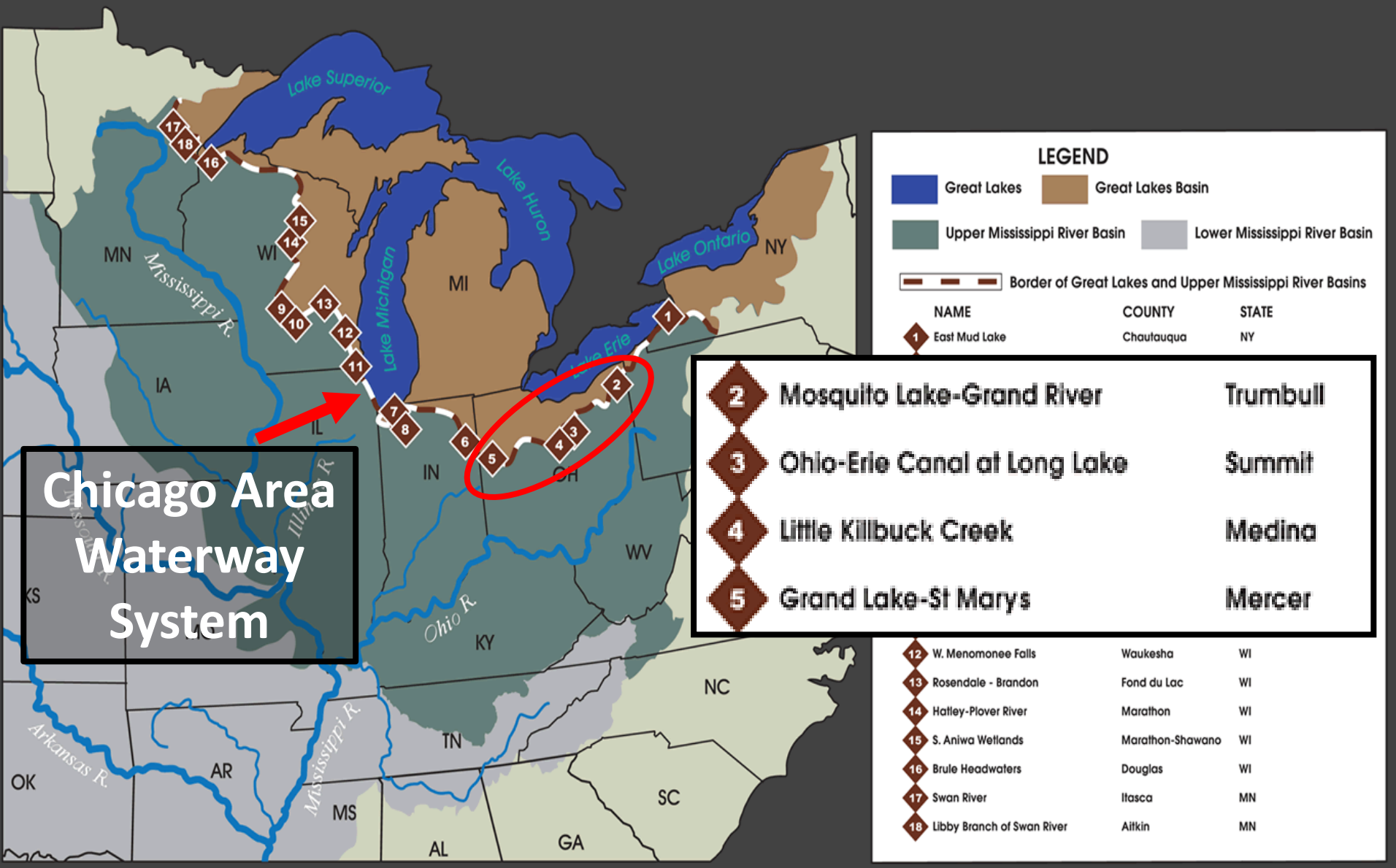
Aquatic Stewardship Program Administrator

Overview

- **Risk Reduction: Brandon Road Project**
- **Risk Reduction: Ohio Connections**
- **Grass Carp**



Other Pathways



Rankings

#1: Chicago Area Waterway (Illinois)

#2: Eagle Marsh (IN)

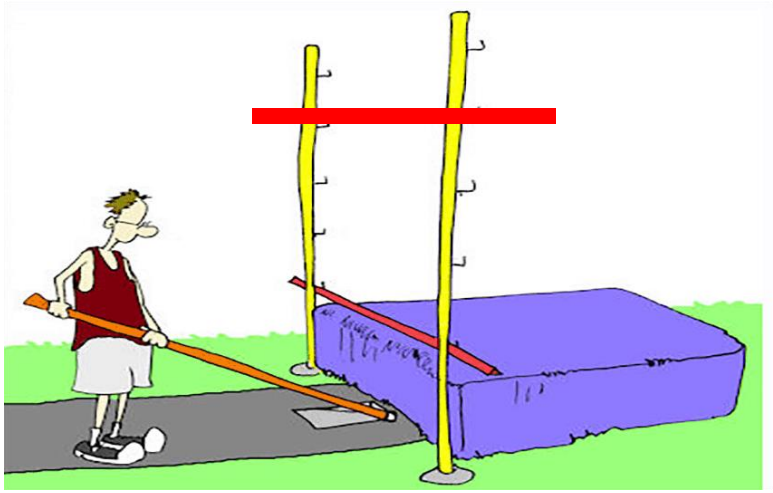
#3: Ohio Erie Canal (OH)

#3: Little Killbuck Creek (OH)

#4: Grand Lake St. Marys (OH)

NA: Mosquito Creek (OH)

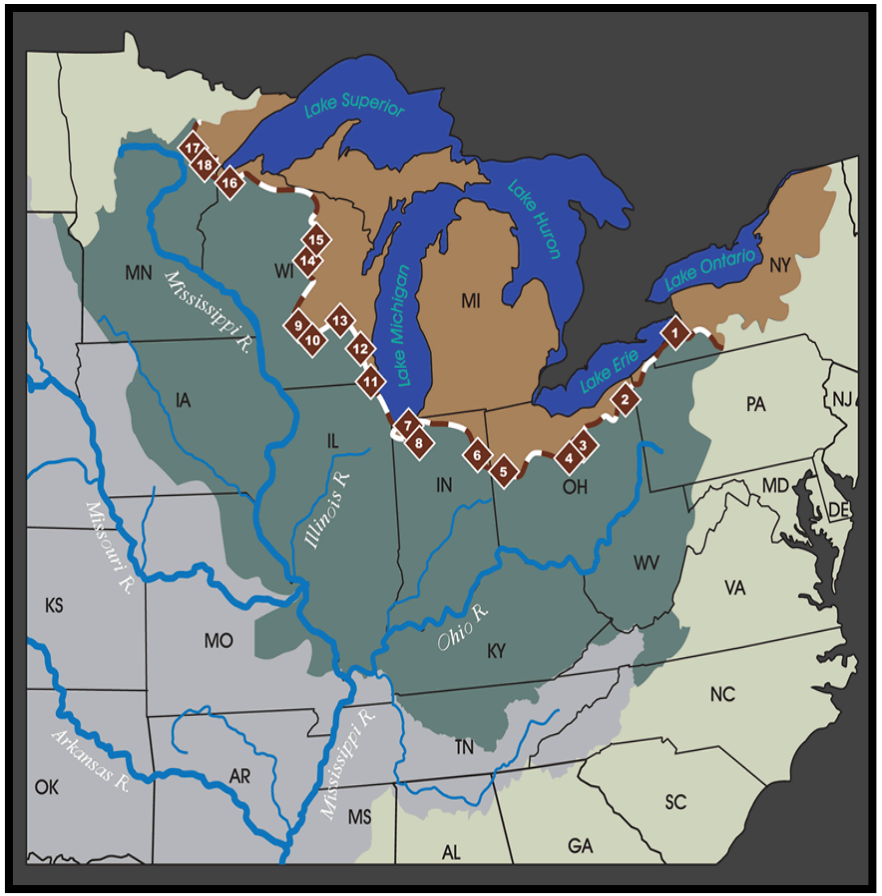
Desire: Complete Separation



Reality: Something less than 100%
(Buying Down Risk)

Overview

- Asian Carp Primer
- **Risk Reduction:**
  Brandon Road Project

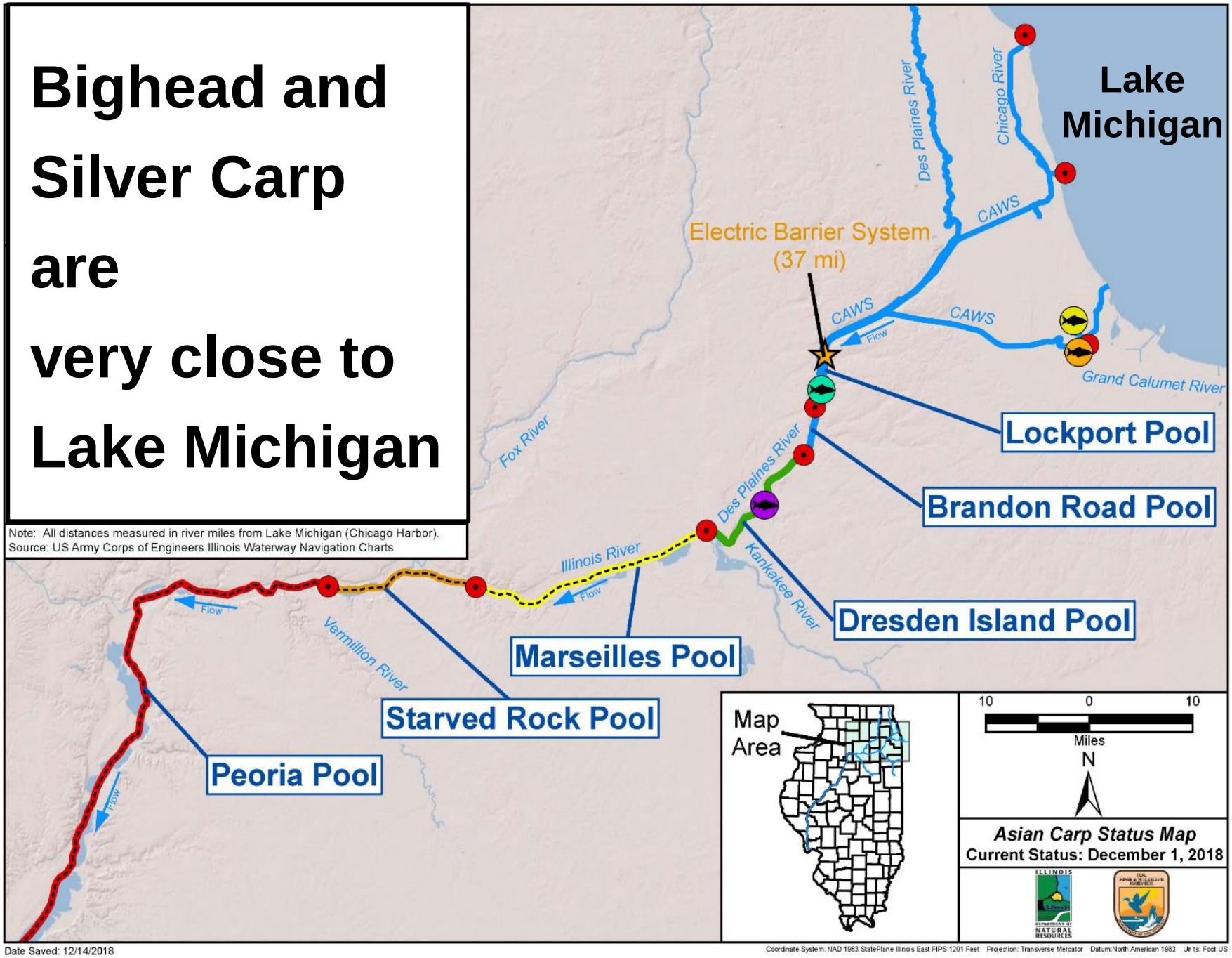


A river reversed, a problem created

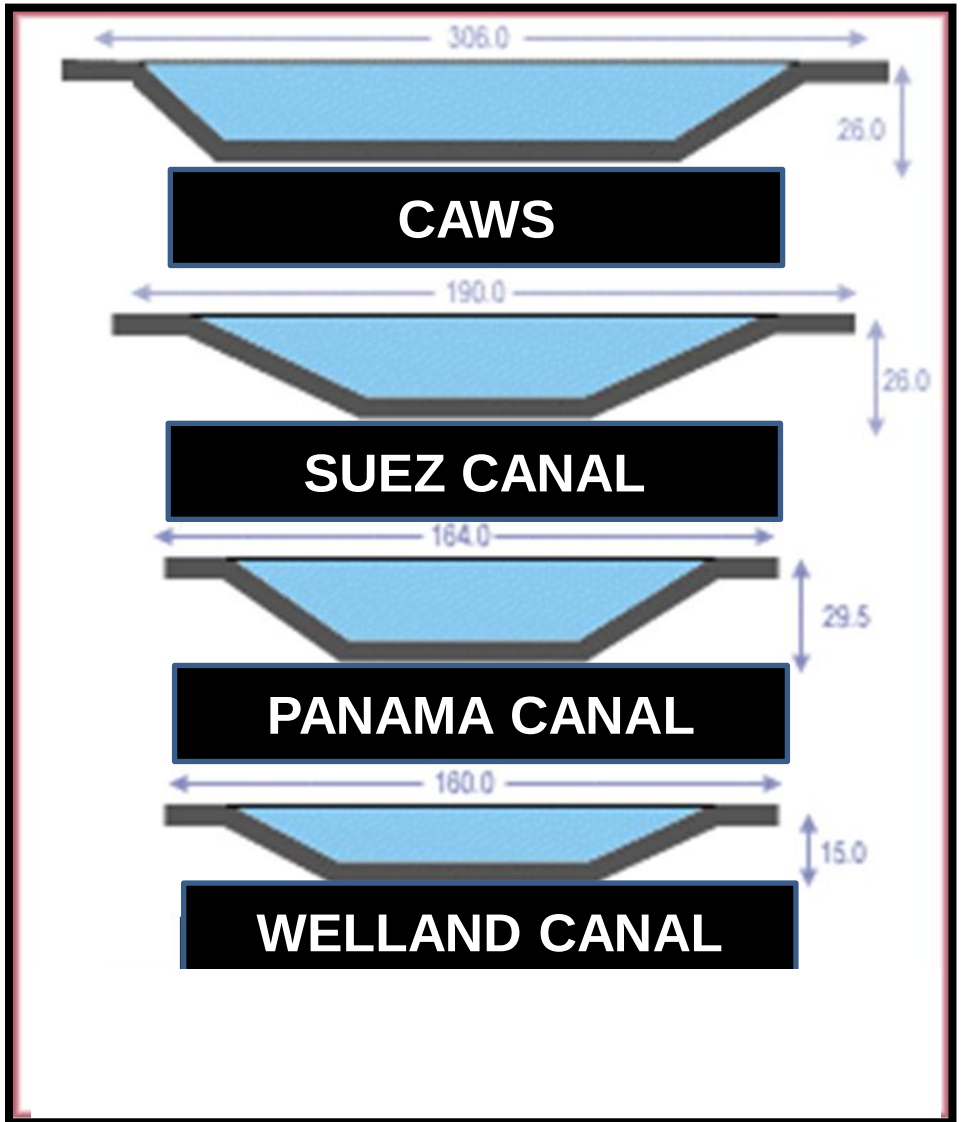
The Chicago and Calumet rivers were once tiny waterways that trickled into Lake Michigan. Begining in 1900 the city dug a series of canals that reversed their flows so they could carry the city's waste into the Mississippi River basin, and away from the lake – the city's drinking water source. A push is now under way to engineer a system to re-establish the natural hydrological divide between Lake Michigan and the Mississippi.

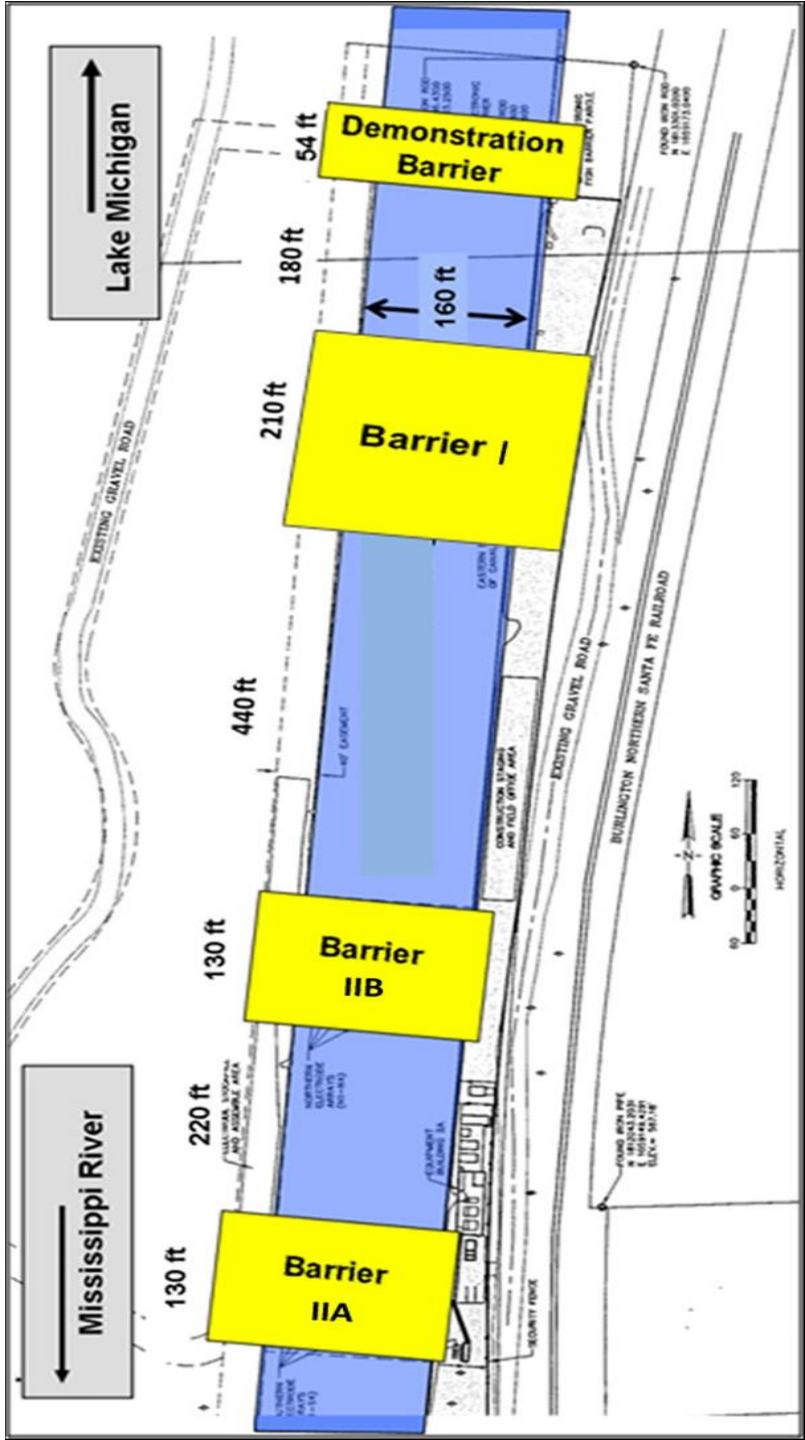
Sources: Great Lakes Fishery Commission

Journal Sentinel


Bighead and Silver Carp are very close to Lake Michigan
Lake Michigan
Des Plaines River
Chicago River
CAWS
Electric Barrier System (37 mi)
CAWS
Flow
CAWS
Grand Calumet River
Lockport Pool
Fox River
Des Plaines River
Brandon Road Pool
Note: All distances measured in river miles from Lake Michigan (Chicago Harbor).
Source: US Army Corps of Engineers Illinois Waterway Navigation Charts
Illinois River
Flow
Kankakee River
Dresden Island Pool
Flow
Vermillion River
Marseilles Pool
Starved Rock Pool
Peoria Pool
Flow
Map Area
10
0
10
Miles
N
Asian Carp Status Map
Current Status: December 1, 2018
Date Saved: 12/14/2018
Coordinate System: NAD 1983 StatePlane Illinois East FIPS 1201 Feet Projection: Transverse Mercator Datum:North American 1983 Units: Foot US

Electric Barrier (USACE)





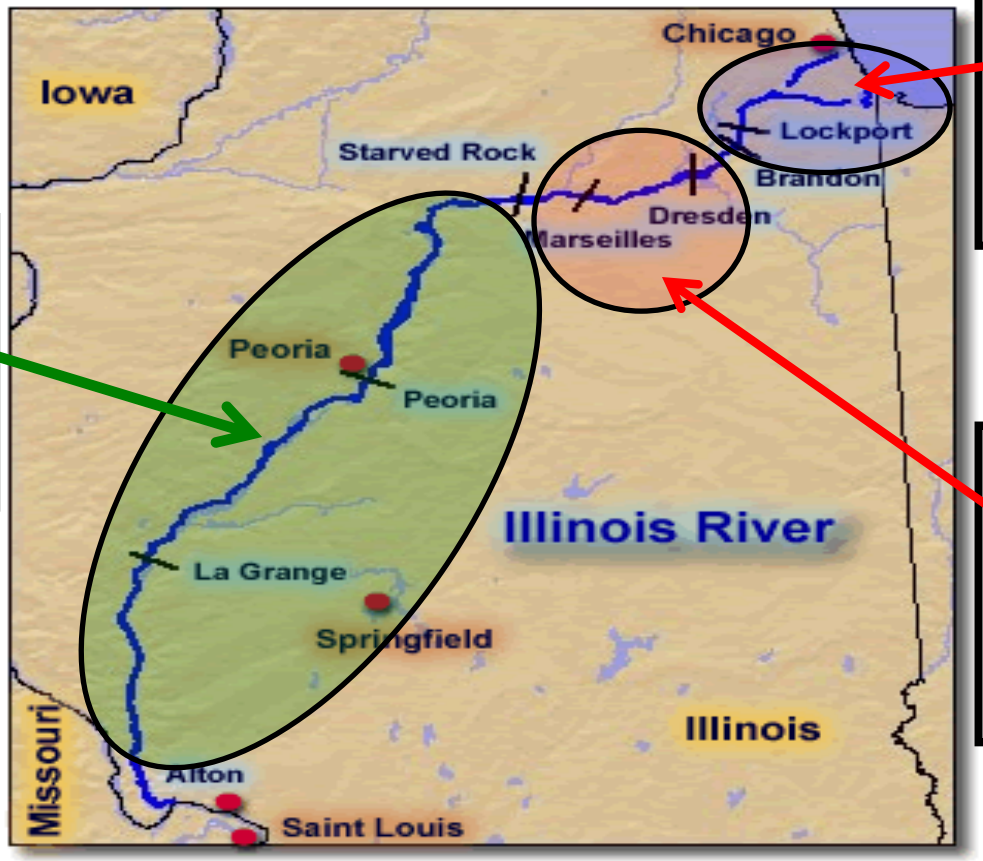
Targeted Removal (IDNR)

CAWS & Upper Des Plaines

- Physical Barriers
- Seasonal Monitoring
- Response Actions

Illinois River

- Independent Commercial Harvest



Upper Illinois Waterway

- Contracted removal
- Small fish monitoring

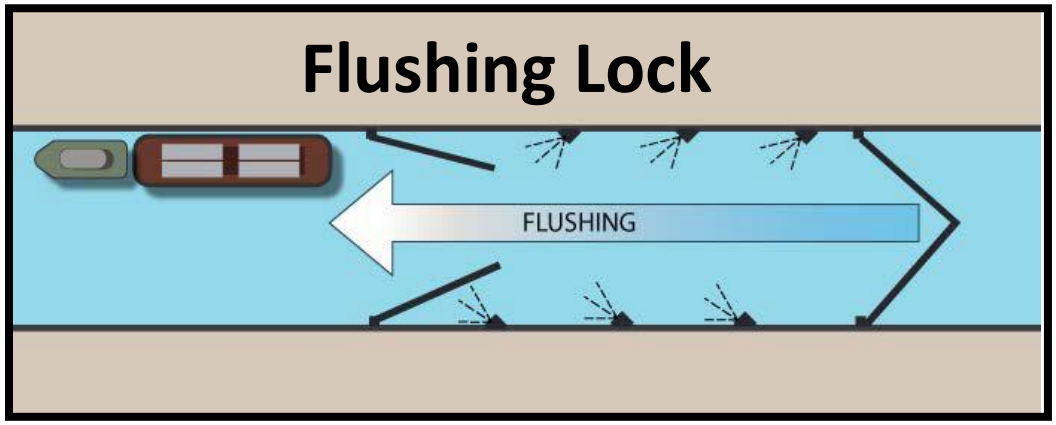
Brandon Road

Choke Point

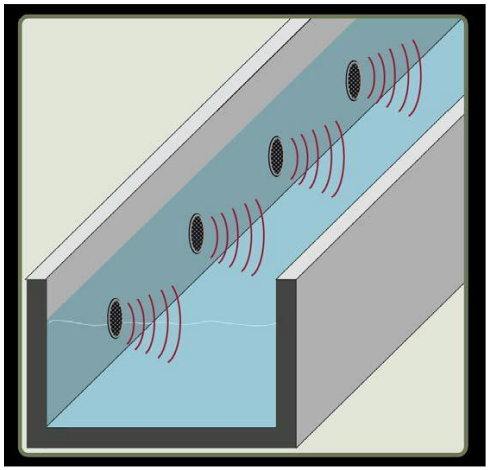

Boat Launches, Upstream
To Lake Michigan
Flushing Lock
Engineered Channel
Acoustic Fish Deterrent
Des Plaines River
Support Facility
Air Bubble Curtain
Electric Barrier in Engineered Channel
Dresden Island Pool
One-Way Solution (USACE)

A Bundle of Deterrents

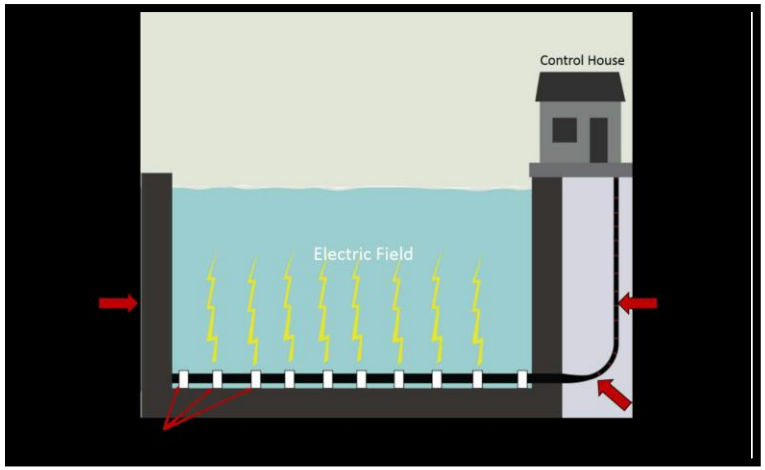
engineered channel to increase effectiveness



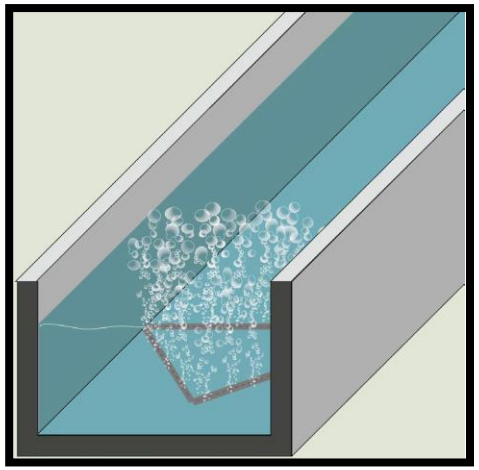
Acoustic



Electric



Air Bubbles



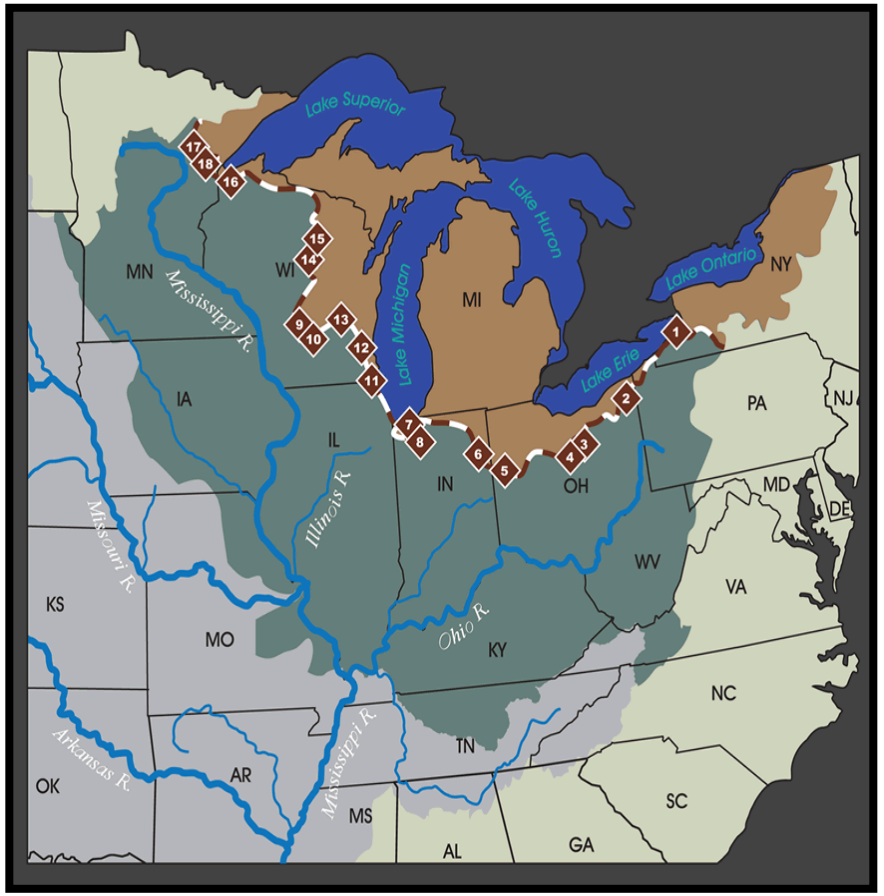
Total Cost = $831 M
Timeline = 2022 to 2028

- **Non-Federal Match: $291 M (65/35 cost share)**
- **MDNR offers $8 M (PED)**
- **OLEC Resolution Support**

Overview

- Risk Reduction:
  Brandon Road Project

- **Risk Reduction:**
  Ohio Connections




Lake Michigan
Detroit
Lake Erie
Chicago
Cleveland
Pittsburgh
Columbus
Indianapolis
Dayton
Cincinnati
Charleston
Washington
St. Louis
Louisville
Lexington
Evansville
Nashville
Chattanooga
Huntsville
Ohio's Hydraulic Connections

Grand Lake St Marys

Ohio Erie Canal

Ohio – Erie Canal
Lake Erie Watershed

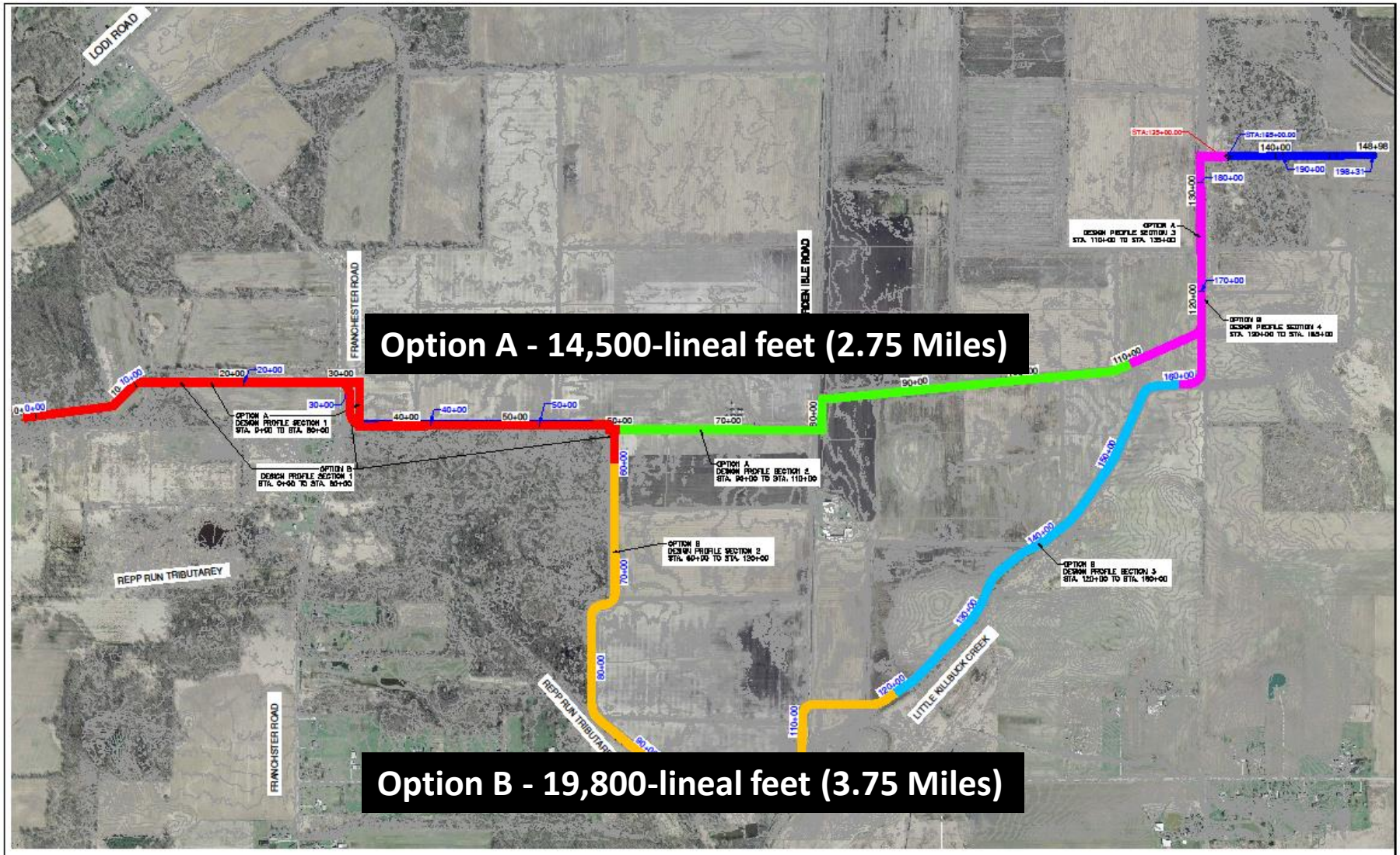
Tuscarawas River
Ohio River Watershed

Status

- **USACE: $2.8 M**
- **Completion: Early 2020**
- **Ohio DNR O&M: $82,000**

Little Killbuck Creek

Two Proposed Alignments



NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services

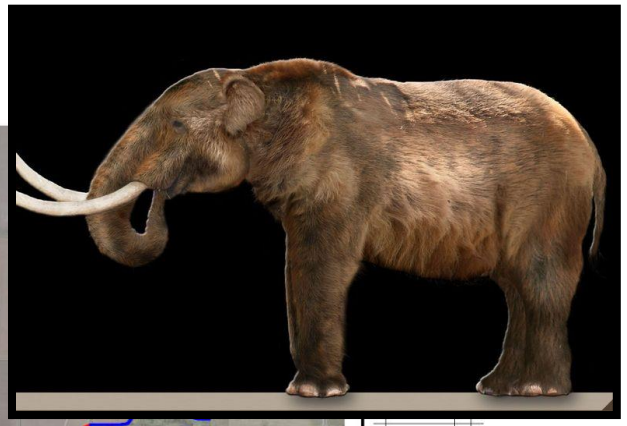
ENGINEERING Ohio Department of Natural Resources

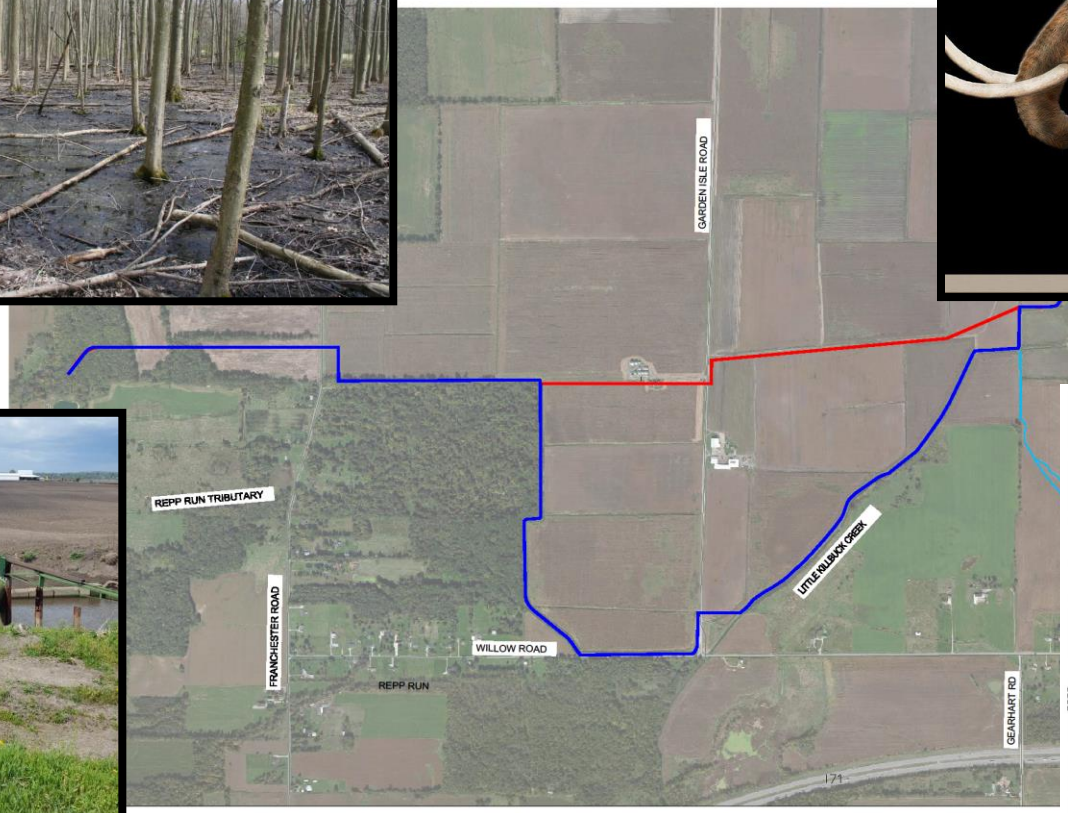
LITTLE KILLBUCK CREEK
INVASIVE SPECIES CLOSURE
MEDIANA AND WAYNE COUNTIES, OHIO

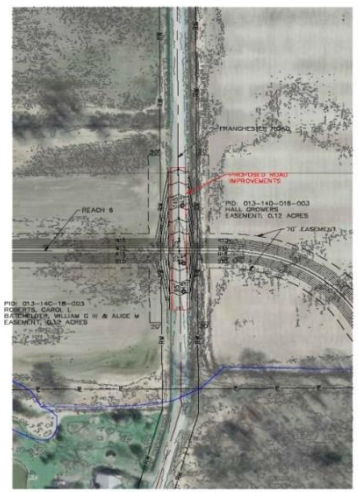
DESIGN PROFILE PLAN
ALIGNMENT OPTION A AND B

10

Wetlands/Roadway/Cultural Flooding/Drainage/Irrigation







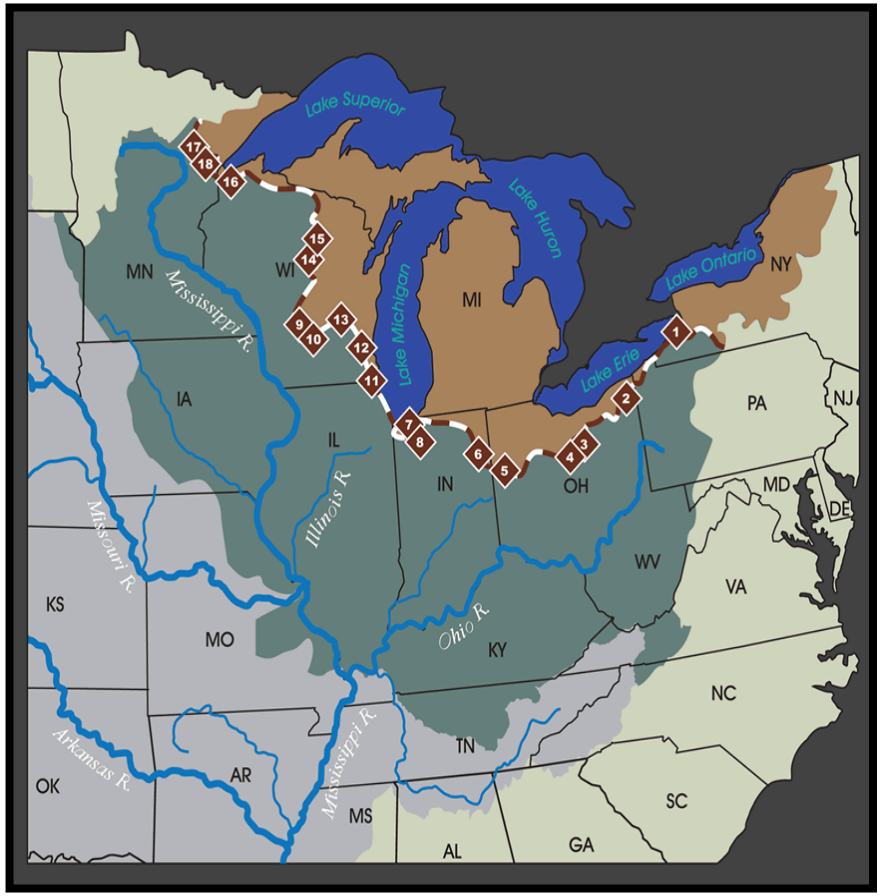
Estimated Cost: $11 – $15 M

Ohio Pathways Closed 2023:

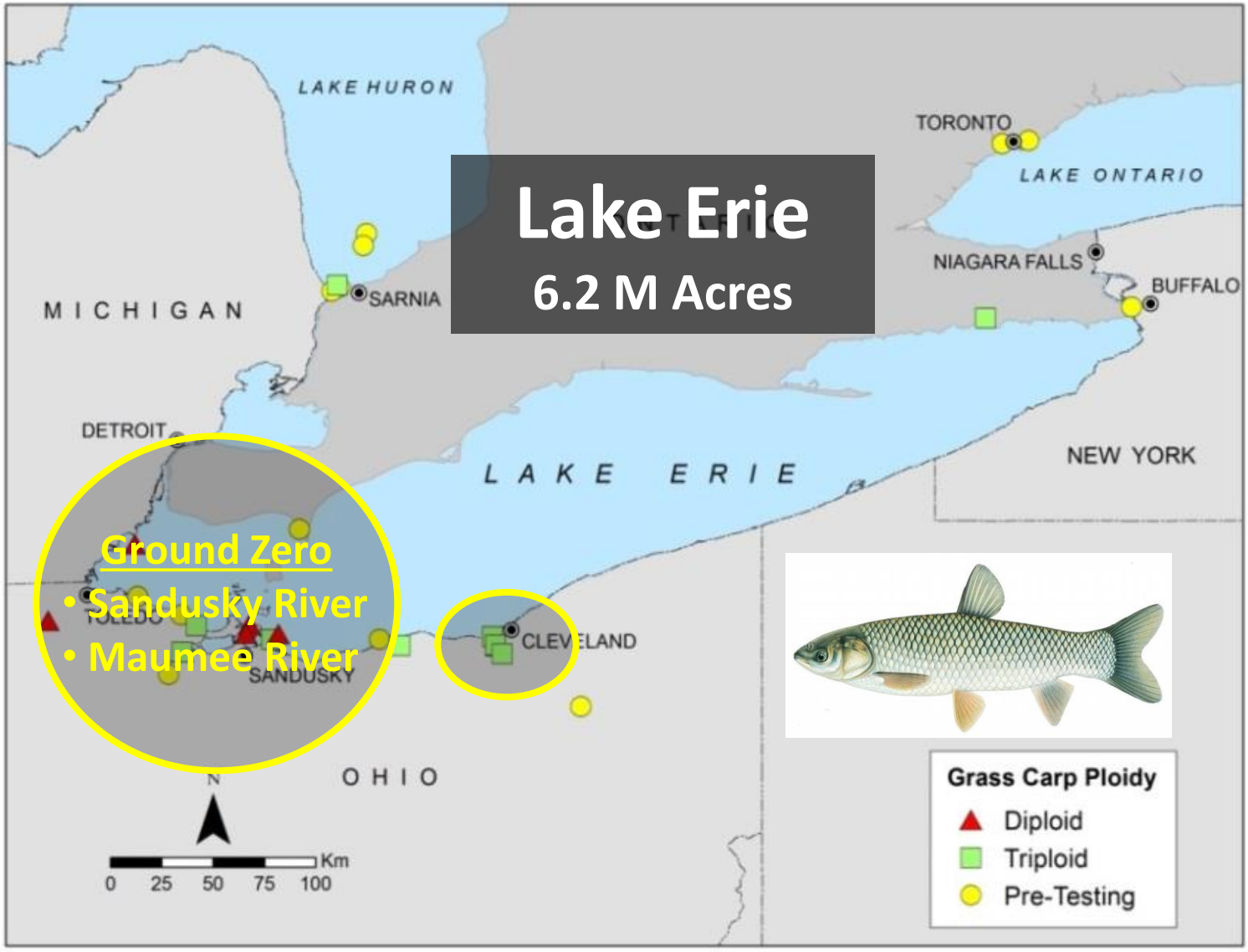
- **Ohio Erie Canal - 2020**
- **Grand Lake St. Marys - 2022**
- **Little Killbuck Creek - 2023**

Overview

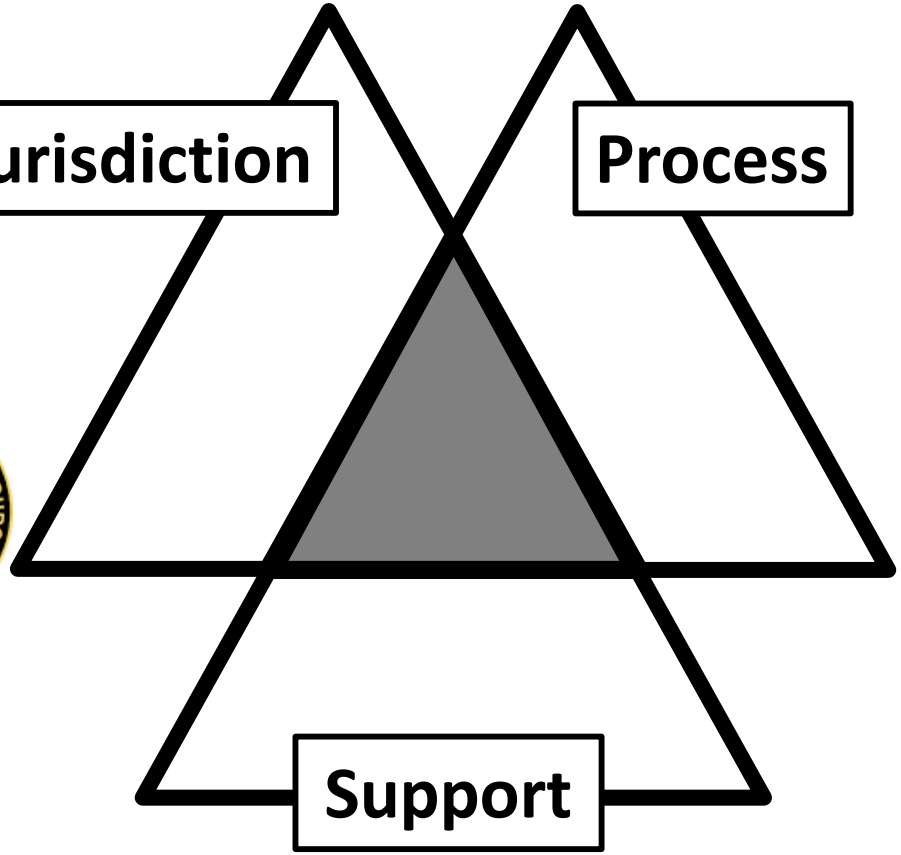
- Risk Reduction: Brandon Road Project
- Risk Reduction: Ohio Connections
- **Grass Carp**



Focus Area: Western Basin of Lake Erie



Management Framework & Partnerships



Responsibility & Authority

Planning & Coordination

Great Lakes Fishery Commission

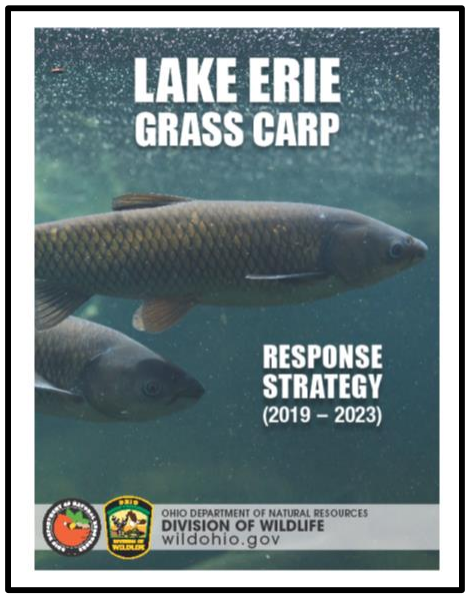
Lake Erie Committee

Grass Carp SDM Workgroup

Research & Additional Resources

science for a changing world

Goals



<u>Goal 1</u>: Prevented Expansion Beyond Western Basin of Lake Erie

<u>Goal 2</u>: Prevent Population from reaching levels that compromise aquatic communities.

- **Ramp up targeted removal to reach SDM goal – 390 (110 to date)**
- **Build removal capacity within the University of Toledo**
- **Increase detection capability to increase removal effectiveness**
- **Fine tune the model to better understand removal effectiveness**
- **Evaluate seasonal barrier feasibility**
- **Continue to address data gaps and enhance removal strategies**

Overarching Approach

Integrate adaptive strategies to eradicate or limit populations to low densities in Western Lake Erie

- **Minimize risk**
- **Control costs**
- **Avoid collateral damage to ecosystems, stakeholders and agencies**

Moving Forward

- **Targeted Grass Carp Removal**
- **Real-time tracking key to success**
- **Barrier Feasibility Assessment**