

# Lake Erie Grass Carp Response Strategy

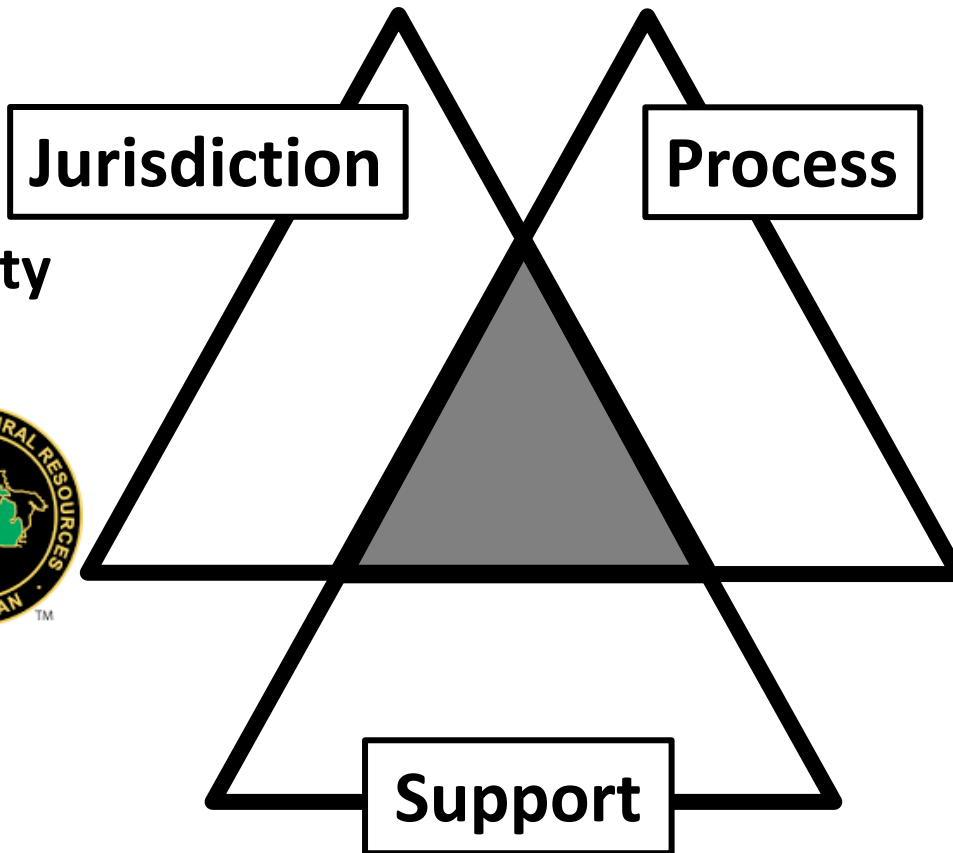
Great Lakes Panel Meeting  
November 2, 2022

*ODNR Division of Wildlife*

*John Navarro, Aquatic Stewardship Program Administrator*



# Planning & Coordination



**Responsibility  
& Authority**



**Planning  
& Coordination**



**Grass Carp SDM Workgroup**

**Research & Additional Resources**



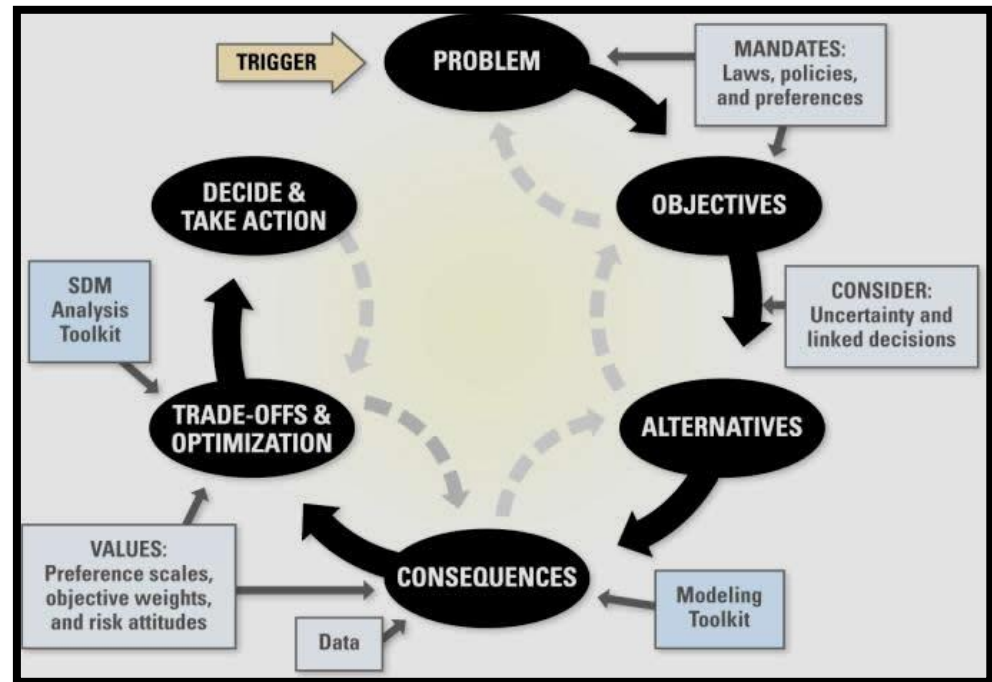
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**TOLEDO**  
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# Structured Decision Making

## Objective Way to Make Complex Decisions

- Clear Objectives
- Explore Tradeoffs
- Deal with Uncertainty
- Transparent
- Integrate Public Values

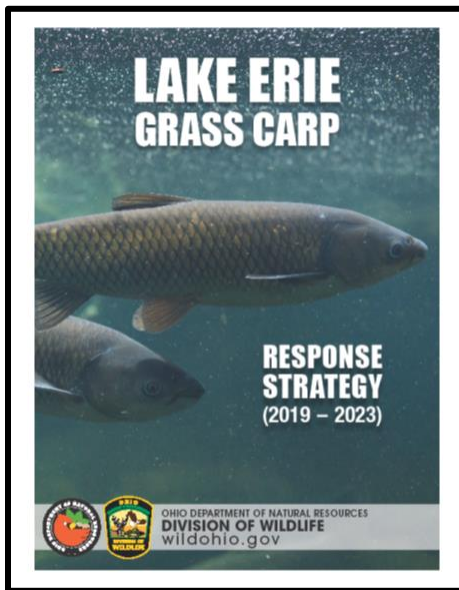


# SDM Outcomes

1. **Removal target:** 390 diploid Grass Carp per year
2. **Sampling method:** The paired gear method of electrofishing and trammel net
3. **Concentrated removal:** Commercial catch and dedicated strike teams
4. **Address critical uncertainties:** Grass Carp abundance and gear efficiency
5. **Barrier evaluations:** Reducing spawner passage with removal actions



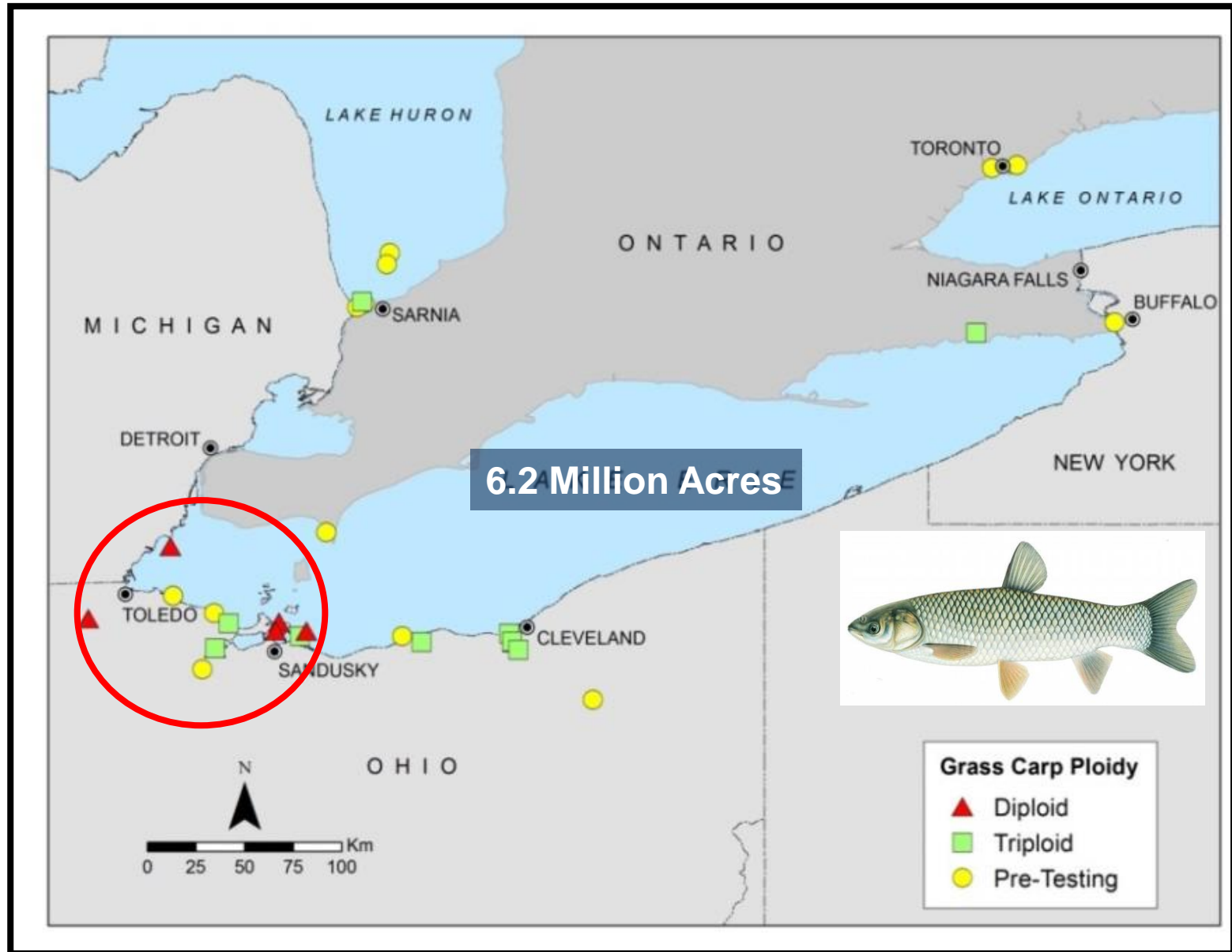
# Lake Erie Grass Carp Response Strategy Planning



**Goal 1: Prevented Expansion Beyond Western Basin of Lake Erie**

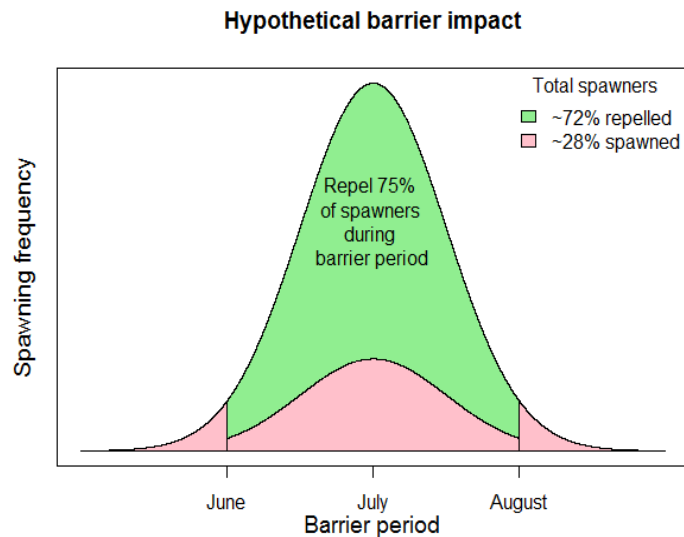
**Goal 2: Prevent Population from reaching levels that compromise aquatic communities.**

# Effective at Working in Tributaries



# Barrier Scope

- **Goal:** Reduce the reproductive potential to amplify the effects of removal and other possible control technologies.
- **Criteria:** Block passage of at least 75% of adult grass carp that encounter the barrier.
- **Uncertainty:** AECOM developed an evaluation matrix that looked at technologies and impacts.



## Barrier Type:

- Acoustic
- Air Bubble

# Sandusky River at the Proposed Barrier Location





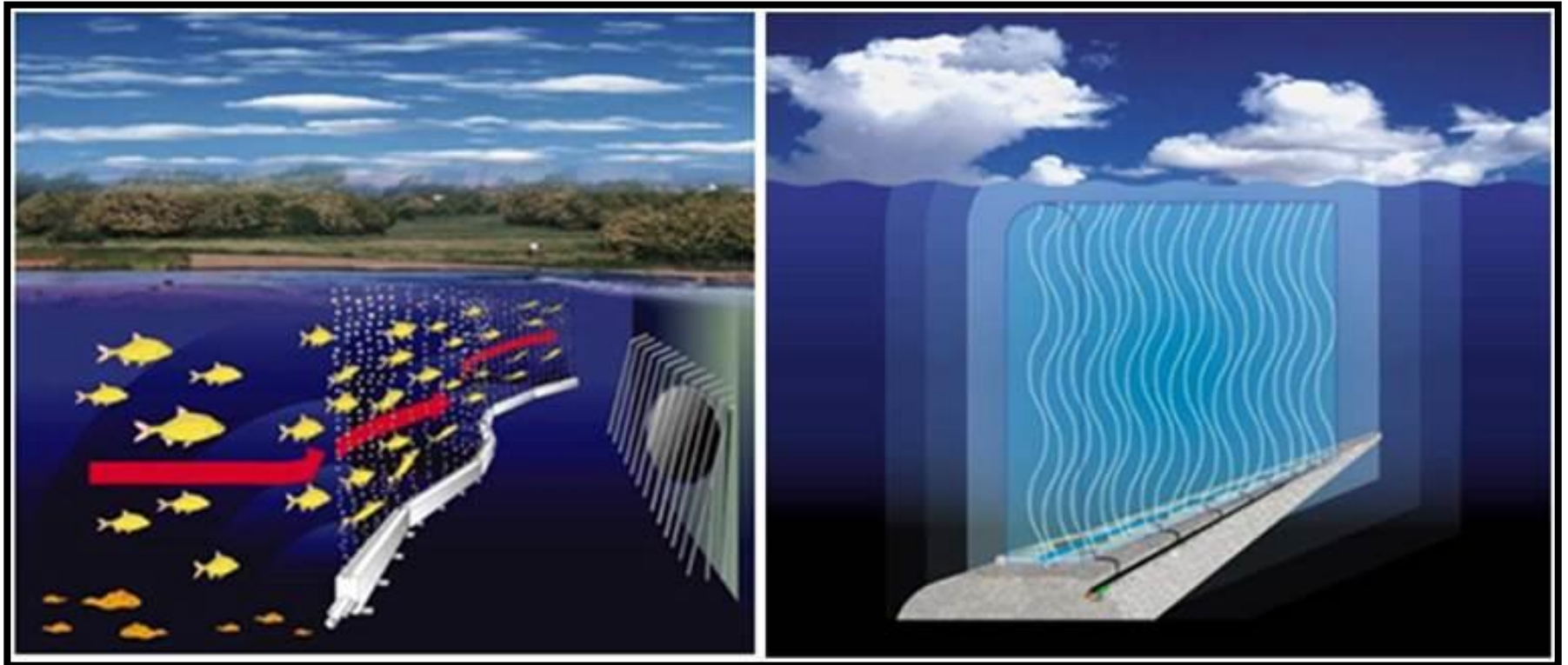
# Example of a Structural Barrier



# Proposed Barrier Design and Location



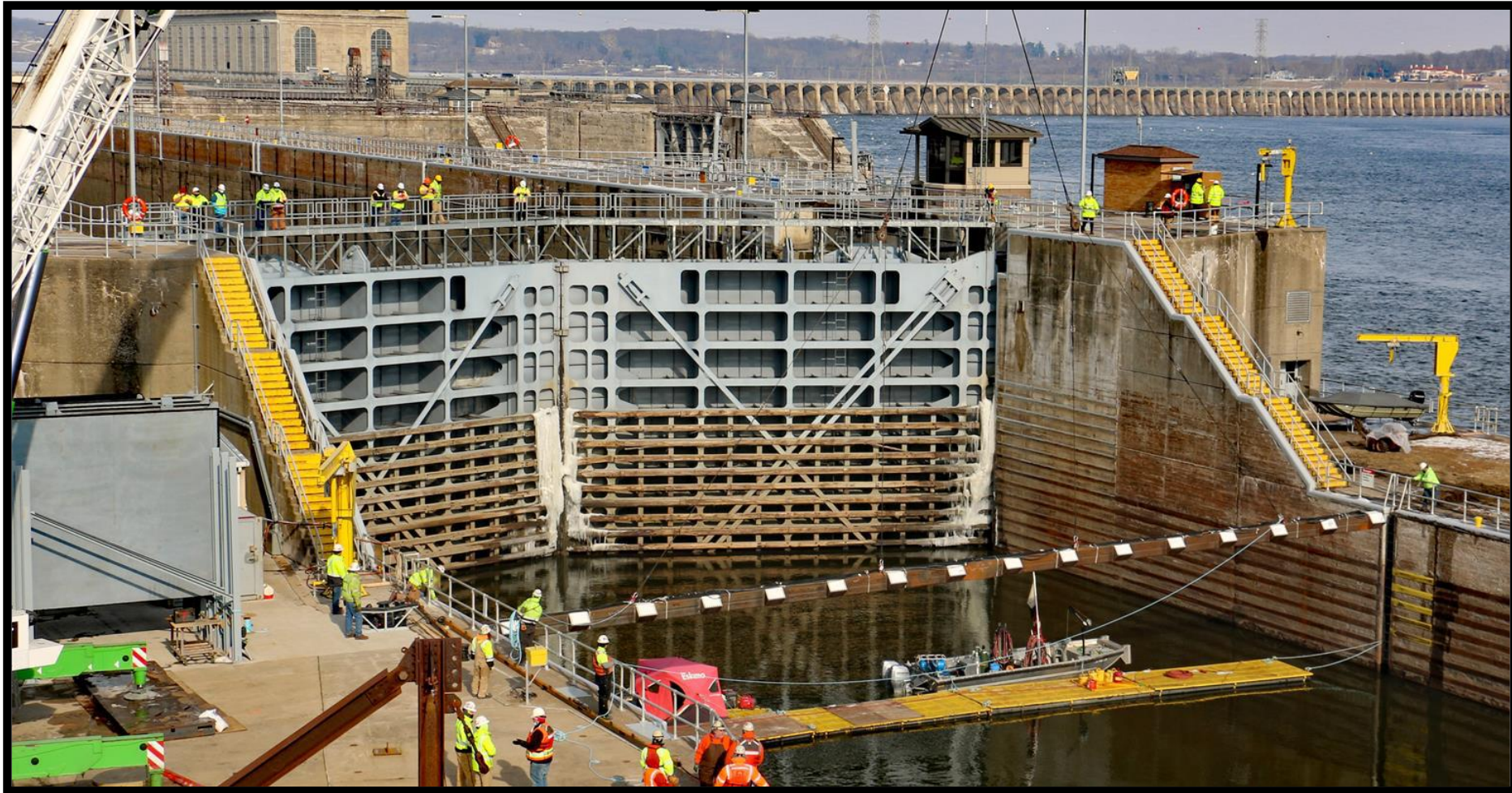
# Behavioral Barrier Design



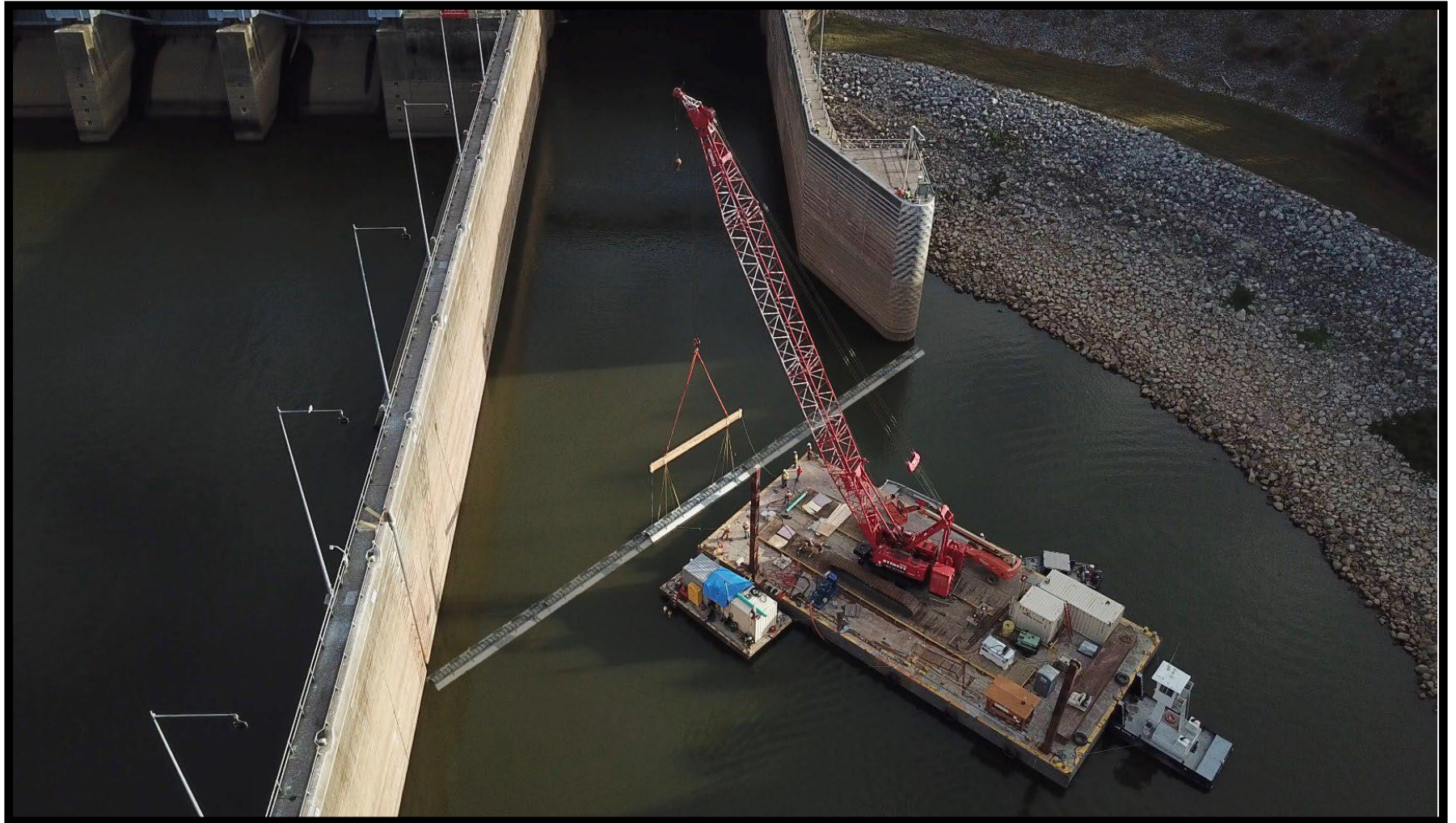
# Oblique Bubble Screen System Two-Way Dispersal Barrier



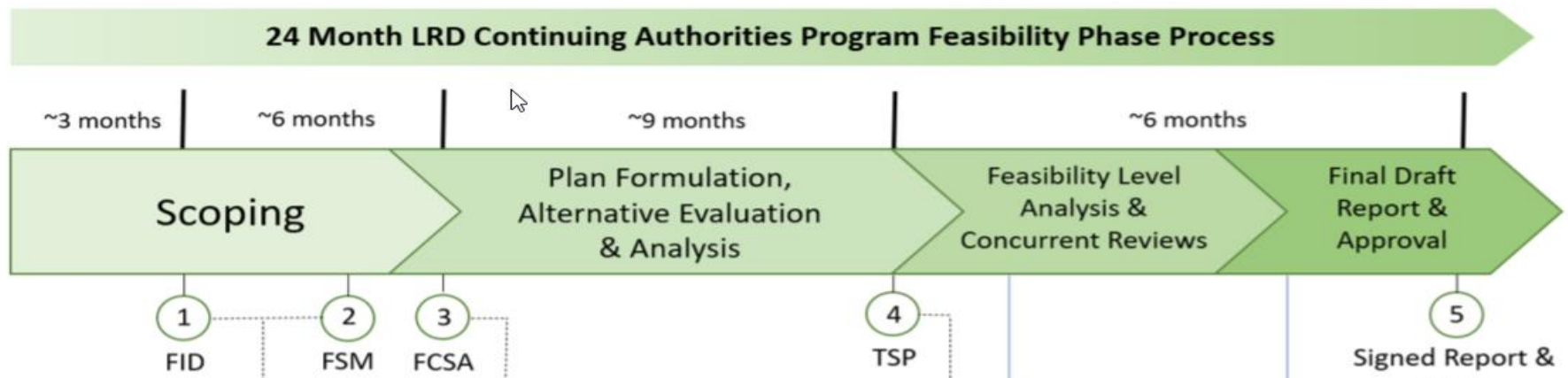
# Underwater Acoustic Deterrent System River Lock 19



# Bio Acoustic Fish Fence Barkley Lock and Dam



# Behavioral Barrier Timeline



- **Initial feasibility (AECOM): Decision to proceed**
- **USACE GLFER authority: High priority**
- **USACE Federal Interest Determination - Six Months**
- **USACE Scoping and feasibility – Two Years**
- **Planning for a Masters Student at UT**

# Grass Carp Advisory Committee Barrier and Deterrent Task Group

**Terms of Reference:** GCAC Task Groups shall undertake and coordinate special focused activities needed to achieve GCAC and individual lake committees' objectives.





# Where are we now?

- **Combined 11 field crews annually conducting removal efforts (UT, USFWS, MDNR, UB).**
  - Removal of >800 fish total, ~75% fertile diploids
  - Surveillance in high priority locations in Lake Erie and other Great Lakes
- **No observed increases in Grass Carp density or detrimental ecological effects documented.**
- **Research helps to close information gaps, evaluates ongoing removal efforts, and offer innovative response strategies.**
- **The seasonal barrier is entering a feasibility and design phase. Once constructed, managers expect this barrier will reduce grass carp spawning success by at least 75%.**
- **All work coordinated through Grass Carp Advisory Committee (GCAC) and associated task groups.**
- **Implementation of adaptive response plan supported by GLRI and GLFC funding.**

# Where Do We Go From Here

- **MDNR, ODNR, USFWS, and GLFC funded strike teams will continue to aggressively remove grass carp from Lake Erie**
- **Research investments by USGS, MSU, and UT will continue to close knowledge gaps to inform removal and spawning tributary risk (e.g., telemetry, FluEgg modeling)**
- **ODNR, MDNR, USGS, GLFC, and USACE will support, design, and construct a seasonal barrier on the Sandusky River**
- **Feasibility study estimated by 2025**
- **New version of LEC adaptive response strategy anticipated by 2024**