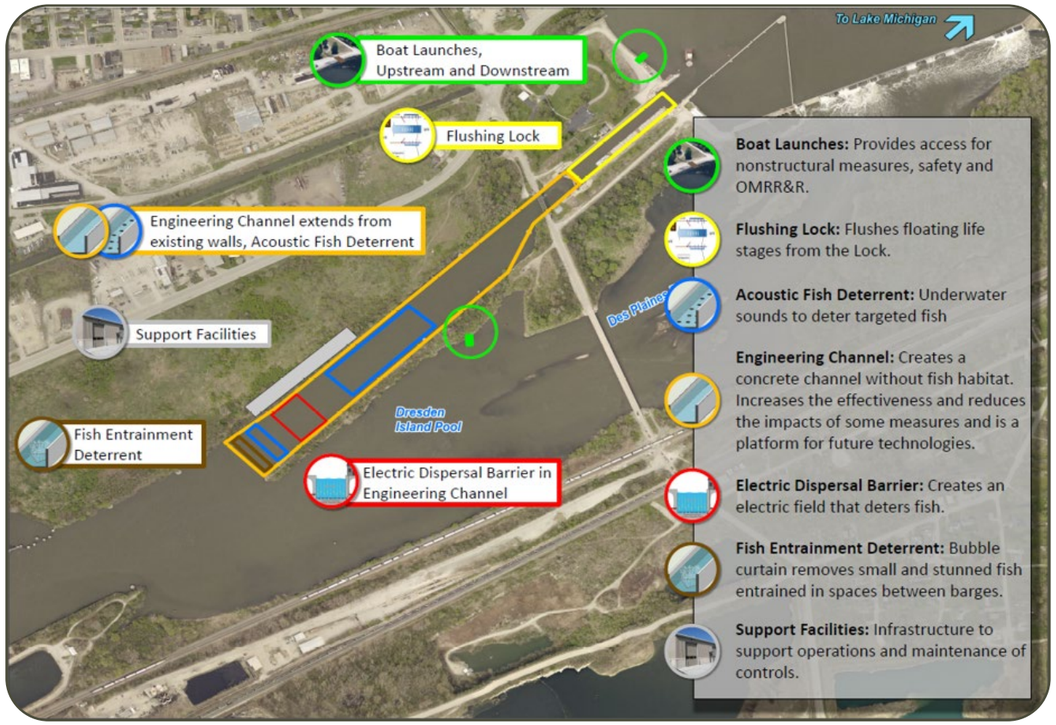
BRANDON ROAD INTERBASIN PROJECT

US Army Corps of Engineers ®

RECOMMENDED PLAN *from feasibility report



RISK-INFORMED AQUATIC NUISANCE SPECIES CONTROL STRATEGY

The Recommended Plan developed during the feasibility phase of this project uses integrated aquatic nuisance species management to maximize the effectiveness of the aquatic nuisance species control system while minimizing impacts to navigation. Success requires shared responsibility.

Future without Project

- Continued operation of the Chicago Sanitary and Shipping Canal (CSSC) Electric Barriers
- Continued monitoring, overfishing, public education and research, etc.

Nonstructural Controls

- Monitoring aquatic nuisance species populations
- Increased overfishing to reduce population pressure at Brandon Road.
- Maximizes effectiveness of the aquatic nuisance species management system

Structural Controls

- Flushing Lock
- Electric Dispersal Barrier
- Acoustic Fish Deterrent
- Fish Entrainment Deterrent

Importance of Engineered Channel

- Increases effectiveness of aquatic nuisance species controls
- Improves underwater monitoring
- Reduces stray current impacts of the electric barrier
- Increases effectiveness of fish clearing within the channel
- Provides platform to test & implement future aquatic nuisance species controls

AQUATIC NUISANCE SPECIES RISK MANAGEMENT SYSTEM

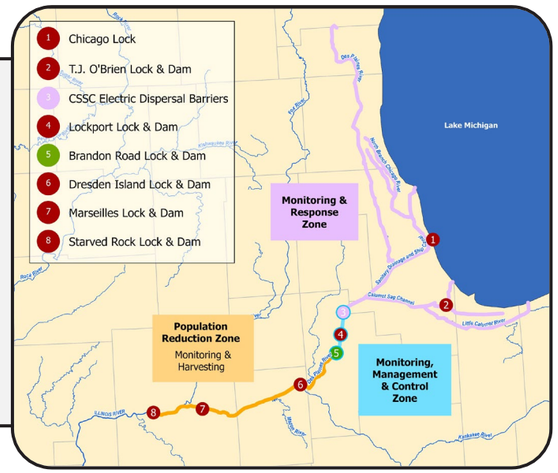
Two control points

- CSSC Electric Barrier
- Brandon Road control point

Three management zones

- Population Reduction Zone: monitoring and harvesting
- Monitoring, Management and Control Zone
- Monitoring and Response Zone

Shared responsibility



FEASIBILITY LEVEL PROPOSED INCREMENTS SUBJECT TO CHANGE PENDING COMPLETION OF DESIGN

INCREMENT I

- Prep NRG Site
- Channel Rock Excavation
- Air Bubble Curtain
- Narrow Acoustic Deterrent Array
- Control Building
- Upstream Boat Launch

EST. COST: $212,465,000
Design & Construction Duration: 4-5 yrs.

INCREMENT II

- Electric Barrier
- Wide Acoustic Deterrent Array
- Complete Control Building
- RDB Wall Connect to Lower Guidewall
- Flushing Lock
- Downstream Boat Launch

EST. COST: $552,559,000
Design & Construction Duration: 3-4 yrs.

INCREMENT III

- Finish Engineered Channel

EST. COST: $93,023,000
Design & Construction Duration: 2-3 yrs.

Total Incremental Implementation
EST. Costs: $858,047,000*
**Based on FY21 price levels*

PLANNING, ENGINEERING & DESIGN

Value Engineering with Design Charrettes

- Engineered Channel
- Other Aquatic Nuisance Species Controls
- Site Preparation and Support Buildings

Goals

- Assess Possible Efficiencies in Design and Construction Methods
- Maximize Aquatic Nuisance Species Control Effectiveness
- Minimize navigation impacts by Evaluating Construction Methods and Timing, and Coordination with Navigation Community

EXPEDITED CONSTRUCTION COSTS

Contributor	Estimated Project First Costs [a]
Total Federal Contribution	$681,913,000
Total Non-Federal Contribution	$176,134,000
Cash	$172,723,000
Lands, Easements, Right-of-Ways, Relocations & Disposal (LERRDs)	$3,411,000
Total Project First Costs	$858,047,000
Nonstructural Measures (Equivalent Average Annual Cost) [b]	
Project Cost	
USACE	$338,000
Non-Federal Sponsor	$182,000
Not Project Costs	
Department of the Interior	$12,287,000
Total Nonstructural Measures	$12,807,000
Operation, Maintenance, Repairs, Rehabilitation & Replacement (OMRR&R) (Equivalent Average Annual Cost) [c]	
USACE (80%)	$6,680,000
Non-Federal (20%)	$1,671,000
Total OMRR&R	$8,351,000

a) All costs are presented at the FY 2021 price level and rounded to the nearest thousand. Average annual costs were estimated using a base year of FY 2022 and a 50-year period of analysis. b) Nonstructural measures are assumed to commence in 2022. USACE's portion pertains to monitoring of the control point. That annual estimate will be cost-shared 65% Federal and 35% non-Federal. c) OMRR&R activities are assumed to commence in FY29 . Pursuant to Water Resources Development Act of 2018, H.R. 3021, 115th Cong. § 1142 (2018) OMRR&R costs are 100% Federal for the flushing lock, and 80% Federal and 20% non-Federal for the remaining features.