

BRANDON ROAD INTERBASIN PROJECT



US Army Corps
of Engineers
Rock Island District

STRUCTURAL PLAN FEATURES

Engineered Channel: Creates a concrete channel without fish habitat. Increases the effectiveness and reduces the impacts of some measures and is a platform for future technologies.

Electric Deterrent: Creates an electric field that deters fish.

Automated Barge Clearing (ABC) Deterrent: Bubble curtain removes small and stunned fish entrained in spaces between barges.

Acoustic Fish Deterrents: Underwater sounds to deter fish.

Bubbler Deterrent: Bubble curtain that deters fish.

Support Facilities: Infrastructure to support operations and maintenance of controls.

Boat Launches: Provides access for nonstructural measures, safety and future operation and management.

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 Deterrent
- Continued monitoring, overfishing, public education and research, etc.

Nonstructural Controls

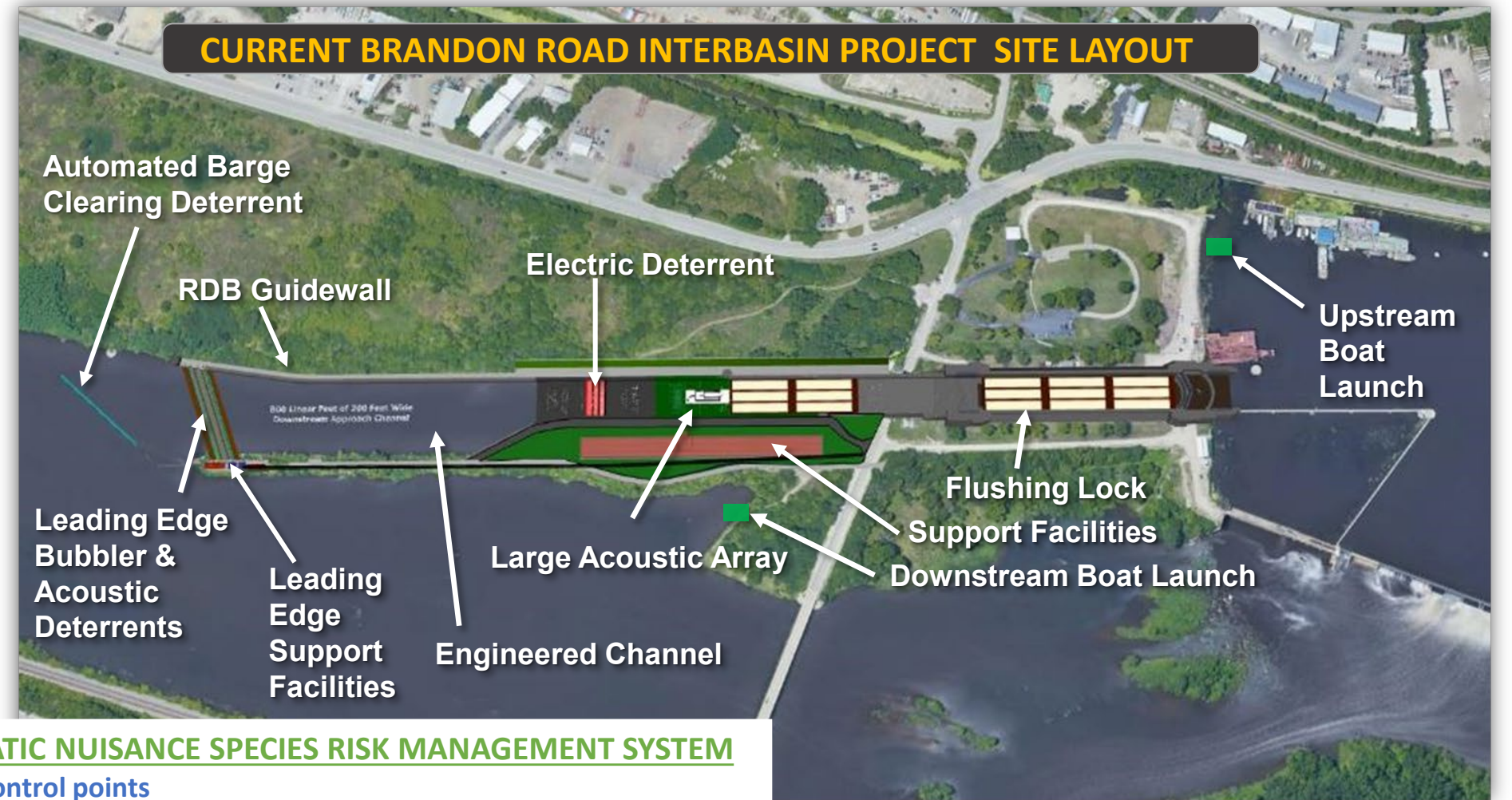
- Monitoring aquatic nuisance species populations
- Increased overfishing to reduce population pressure at Brandon Road.
- Maximizes effectiveness of the aquatic nuisance species management system

Structural Controls

- Flushing Lock
- Electric Deterrent
- 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 deterrent
- 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 Deterrent
- Brandon Road control point

Three management zones

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

Shared responsibility

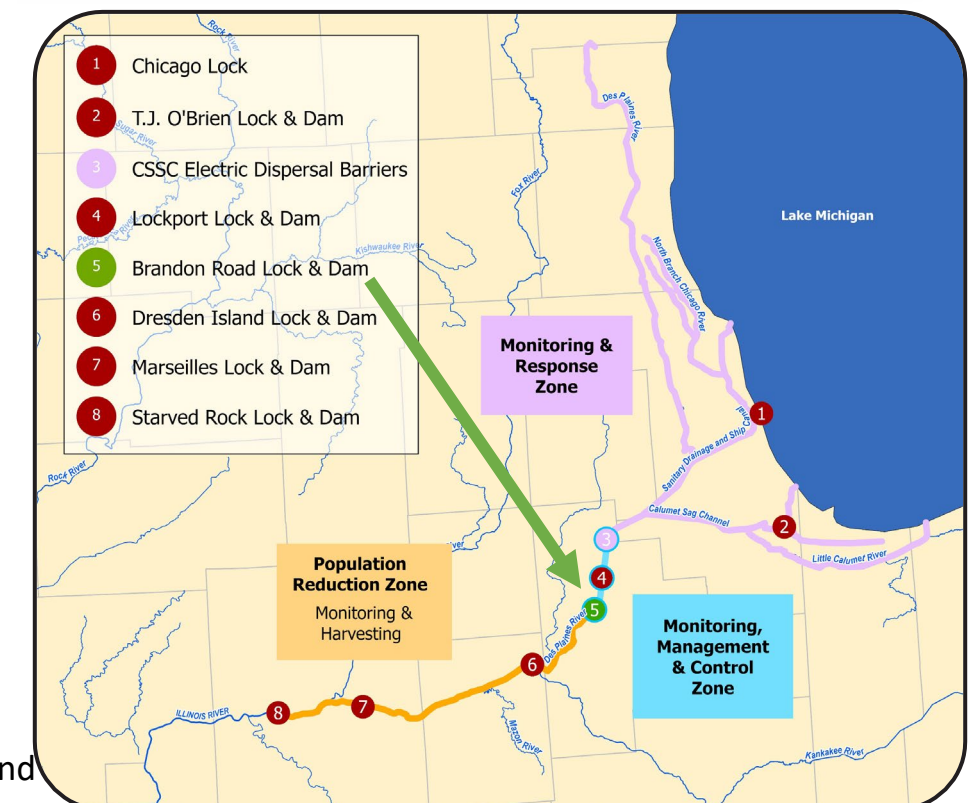
PRE-CONSTRUCTION, ENGINEERING & DESIGN

Value Engineering with Design Charrettes

- Overall Project Design
- Engineered Channel
- Flushing Lock
- 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



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BRIP FY23-25 SCHEDULED ACTIVITIES OVERVIEW

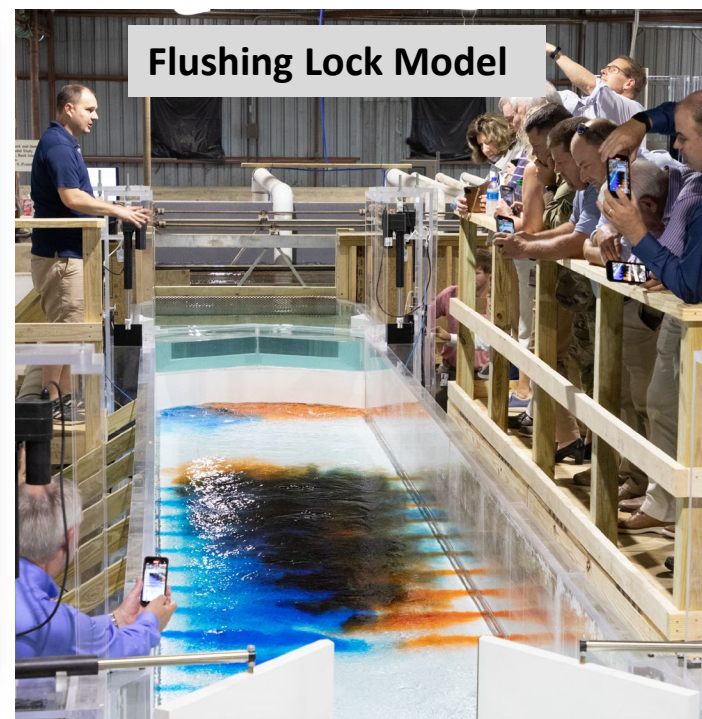
- FY23 Scheduled Activities**
- PPA Negotiations
 - Complete all remaining ERDC R&D efforts
 - Complete Certified Cost Estimate: 10 MAR
 - Increment I-A Design 95%: 23 JUN
 - Increment I-A Design 100%: 30 SEP
 - Initiate Scoping for I-B and II contracts

- FY24 Planned Activities**
- PPA Executed
 - Fabrication Contract (Speakers)
 - Construction Contract Increment I-A
 - Complete Designs of Increment I-B
 - Initiate Construction of Increments I-A
 - Initiate Design of Increment II

- FY25 Planned Activities:**
- Continuation of Increment I-A Construction
 - Continuation of Design of Increment II
 - Construction Contract for Increment I-B
 - Initiate Fabrication of New Lock Gates
 - Initiate Const. of Flushing Lock (Phase 1 of 3)



LD 19 Acoustic Testing



Flushing Lock Model

PROPOSED INCREMENTS
*Subject to change pending completion of design and execution of PPA.

- INCREMENT I-A**
- Automated Barge Clearing (ABC) Deterrent
 - Leading Edge Bubble Deterrent
 - Leading Edge Acoustic Deterrent Array
 - Leading Edge Support Facilities
 - Upstream Boat Launch
- INCREMENT I-B**
- Site Prep
 - Channel Rock Excavation

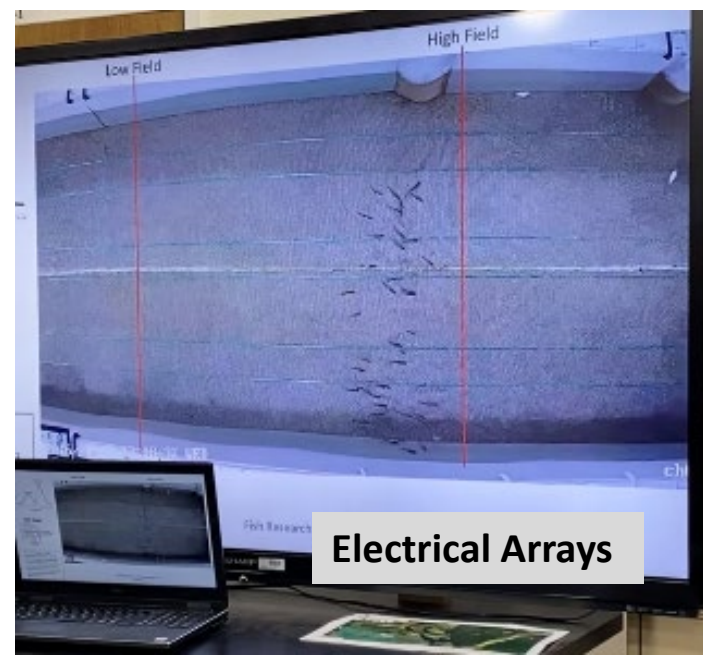
ESTIMATED PROJECT COSTS

Contributor	Estimated Total Project Costs ^a
Total Federal Contribution (90%)	\$1,031,483,700
Total Non-Federal Contribution (10%)	\$114,609,300
Cash	\$113,225,300
Lands, Easements, Right-of-Ways, Relocations & Disposal (LERRDs)	\$1,384,000
Total Project Costs	\$1,146,093,000
Nonstructural Measures (Equivalent Average Annual Cost) ^b	
Project Cost	
USACE (80%)	\$478,080
Non-Federal Sponsor (20%)	\$119,520
Not Project Costs	
Department of the Interior	\$14,130,000
Total Nonstructural Measures	\$14,727,600
Operation, Maintenance, Repairs, Rehabilitation & Replacement (OMRR&R) (Equivalent Average Annual Cost) ^c	
USACE (100%) flushing lock	\$33,500
USACE (80%)	\$7,681,440
Non-Federal (20%)	\$1,920,360
Total OMRR&R	\$9,635,300

a) All costs are presented at the FY 2023 price level and rounded to the nearest thousand. Average annual costs were estimated using a base year of FY 2024 and a 50-year period of analysis. b) Nonstructural measures are assumed to commence in 2024. USACE's portion pertains to monitoring of the control point. That annual estimate will be cost-shared 80% Federal and 20% 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.



Approach Channel Model

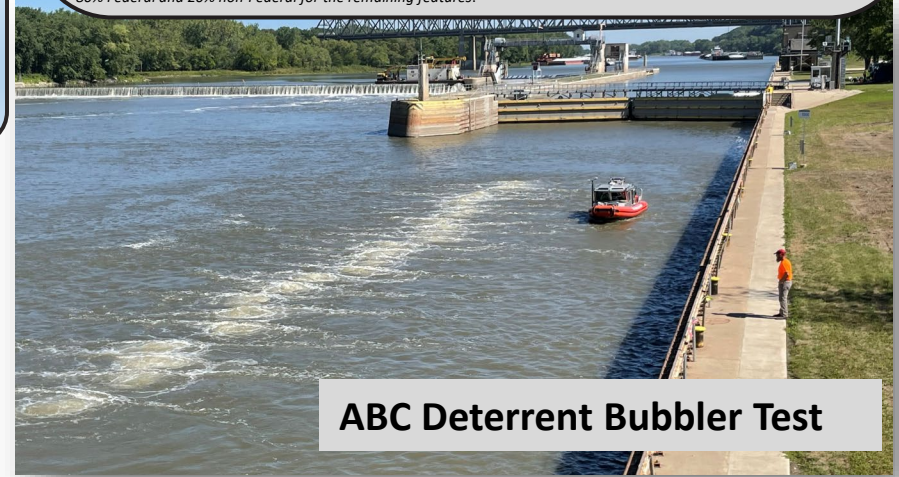


Electrical Arrays

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

- INCREMENT III**
- Finish Engineered Channel

Total Project Costs: \$1.146B*
*Based on FY23 price levels



ABC Deterrent Bubbler Test

BRANDON ROAD INTERBASIN PROJECT

CURRENT BRANDON ROAD INTERBASIN PROJECT SITE LAYOUT

