

# CONCLUSION

## CONCLUSION

Integrated ANS controls within the Tentatively Selected Plan and the waterway system (e.g., at Brandon Road Lock and Dam and at the Chicago Sanitary and Ship Canal Electric Barrier) would maximize the effectiveness of preventing upstream transfer of swimming and floating Mississippi River Basin ANS into the Great Lakes Basin while maintaining navigation and minimizing impacts. Life safety would be a primary consideration when designing, constructing and operating this plan.

Integrated ANS controls within the Tentatively Selected Plan and within the system (e.g., at Brandon Road Lock and Dam and at Romeoville) would maximize the effectiveness of preventing upstream

transfer of swimming and floating Mississippi River Basin ANS into the Great Lakes Basin while maintaining navigation and minimizing impacts. Life safety would be a primary consideration when designing, constructing and operating this plan.

Collaborative groups such as the Asian Carp Regional Coordinating Committee – which is comprised of federal, state, and local governments and associated regulatory agencies – will continue to play a significant leadership role. Continued partnerships among these agencies will facilitate coordinated efforts toward the protection of aquatic and environmental resources and shape future decisions regarding long-term ANS strategies.

## NEXT STEPS

The GLMRIS-BR Report was released in early August and is currently in a public comment period. The public comment period provides interested parties with an opportunity to make comments for the record.

Comments can be submitted in one of four ways:

1. completing a comment form located on the study website ([glmr.is.anl.gov](http://glmr.is.anl.gov));
2. via traditional mail;
3. at public meetings; or
4. delivered by hand.

Please refer to the GLMRIS website for a copy of the draft report and how to submit comments.

## RESOURCES & CONTACTS

To learn more about GLMRIS, visit the following locations:

Website: [glmr.is.anl.gov](http://glmr.is.anl.gov)

Twitter: [twitter.com/glmris](https://twitter.com/glmris)

Facebook: [facebook.com/glmris](https://facebook.com/glmris)

Or contact the GLMRIS Project Team at: [glmr.is@usace.army.mil](mailto:glmr.is@usace.army.mil)



**US Army Corps of Engineers**®

# GLMRIS BRANDON ROAD

## SUMMARY OF THE GREAT LAKES MISSISSIPPI RIVER INTERBASIN STUDY - BRANDON ROAD

### WHAT IS GLMRIS-BRANDON ROAD?

The Great Lakes and Mississippi River Interbasin Study - Brandon Road (GLMRIS-BR) Draft Integrated feasibility study and Environmental Impact Statement builds on the Great Lakes and Mississippi River Interbasin Study (GLMRIS) Report released in January 2014.

#### Study Objective

GLMRIS-BR is a Feasibility Study to evaluate options and technologies in the vicinity of Brandon Road Lock and Dam near Joliet, Illinois, to prevent upstream transfer of Aquatic Nuisance Species (ANS) from the Mississippi River Basin into the Great Lakes Basin through the Chicago Area Waterway System, while minimizing impacts to existing waterway uses and users.

The United States Army Corps of Engineers (USACE) is conducting this study in consultation with other federal agencies, Native American tribes, state agencies, local governments, and nongovernmental organizations.



**ANS can cause harmful environmental, economic, political and social impacts!**



Prevention is recognized as the best defense against ANS. USACE has interpreted the term "prevent" to mean the reduction of risk to the maximum extent possible, because it may not be technologically feasible to achieve an absolute solution.

### BACKGROUND-2014 GLMRIS REPORT

GLMRIS is a study conducted by USACE as authorized by the United States Congress in 2007 in Section 3061(d) of the Water Resources Development Act of 2007, Public Law 110-114 (WRDA 2007).

In 2014, USACE released the GLMRIS Report which presented a range of options and technologies to prevent the upstream and downstream transfer of ANS between the Great Lakes and Mississippi River basins through aquatic pathways.

The report presented an array of eight alternative plans but did not include a recommendation for authorization.

Three of the plans included implementing a control point to prevent upstream transfer of Mississippi River Basin ANS at Brandon Road Lock and Dam near Joliet, Illinois.

Valuable information for the public and decision-makers was identified in the report, including ideas regarding available ANS control options and their potential impacts on waterway users and uses.

### WHAT ARE ANS?

ANS are organisms, which can be plants, animals, or pathogens, that when introduced into a new habitat can produce harmful impacts on aquatic ecosystems and to the human uses of these systems. Recent ANS invasions to the Great Lakes and Mississippi River Basins include zebra mussels, quagga mussels, round goby and Eurasian ruffe.

Because ANS populations span watershed and government jurisdictional boundaries, efforts to manage them must be coordinated across these boundaries. For these reasons, ANS are of national and global concern.



# ANS CONTROLS

# TENTATIVELY SELECTED PLAN

## HOW DO ANS TRAVEL?



**Swim**  
Examples: fish



**Hitchhike**  
Examples: plant fragments and crustaceans attached to vessels



**Float**  
Examples: fish eggs, larvae and plant fragments

Swimming, floating and hitchhiking are called “modes of transport.”

ANS control measures were developed to address ANS modes of transport and site-specific conditions in the area around Brandon Road Lock to prevent their upstream transfer.

## NONSTRUCTURAL CONTROLS

Nonstructural controls do not require construction of structural features and may be implemented relatively quickly. The nonstructural control measures in the Tentatively Selected Plan include monitoring, overfishing, integrated pest management, public education and outreach. Through a shared responsibility, these are implemented by municipal, state and federal agencies.

## SUPPORTING MEASURES

Supporting measures were developed to aid with implementation of the nonstructural control measures and the electric barrier.

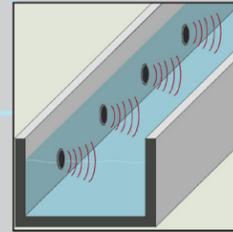
**Mooring area** is a supporting measure included in alternatives with an electric dispersal barrier to provide for reconfiguration of tows downstream prior to locking through Brandon Road Lock.

**Boat launches** are located upstream and downstream of Brandon Road Lock and Dam to address limited boat access for safety and ANS control measures.

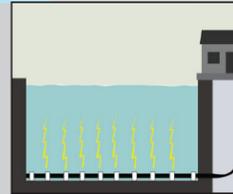
## STRUCTURAL CONTROLS

Structural controls require the design, construction and operation of a permanent feature in the vicinity of the lock and adjacent waterway and take longer to implement. The structural control measures in the Tentatively Selected Plan provide physical deterrents to swimming and floating ANS.

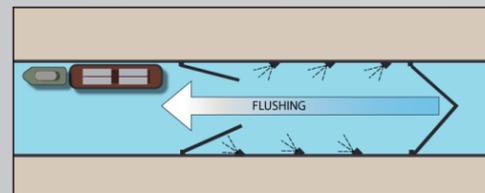
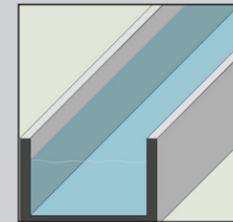
**Complex noise** is underwater sound generated to deter ANS fish species from entering the approach channel and lock; it is ineffective for floating and hitchhiking ANS.



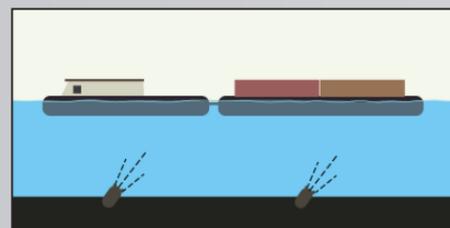
**Electric dispersal barrier** creates an electric field that repels fish.



**Engineered channel** is a concrete structure installed within the downstream approach channel to the Brandon Road Lock that will house structural ANS controls. The engineered channel increases the efficacy and reduces the negative impacts of some ANS controls, and provides a platform from which to evaluate future ANS controls and potentially incorporate them.



**Flushing lock** removes floating ANS from the downstream pool by flushing the lock with water from the upstream pool. It does not control the passage of swimming or hitchhiking ANS.



**Water jets** installed along the bottom of the engineered channel are designed to remove small and stunned fish that may become entrained in spaces between barges.



Aerial view of Tentatively Selected Plan

USACE recommends the Technology Alternative - Complex Noise with Electric Barrier as the Tentatively Selected Plan. Life safety would be a primary consideration when designing, constructing and operating this plan.

The Tentatively Selected Plan includes the nonstructural and structural measures identified on page 2. The plan includes redundant ANS controls for swimmers, the electric barrier, currently the most effective fish deterrent available, and complex noise, and contains measures to address floating ANS. Initially, the electric barrier would only operate when there are no vessels immediately downstream of the approach channel, within the channel, or within the lock. Complex noise would be operated when the electric barrier is off.

Nonstructural controls add an additional layer of control by in part decreasing the population pressure below Brandon Road Lock and Dam through the removal of Asian Carp or other ANS species. Successful implementation of nonstructural controls would maximize the plan's effectiveness, and would be a shared responsibility with multiple stakeholders including federal, state and local agencies.

Structural controls downstream of the lock would be installed within an engineered channel. The engineered channel would increase the efficacy of certain structural and nonstructural controls and also would provide a platform to continue development and testing of future ANS controls and potentially incorporate them.

If the Tentatively Selected Plan becomes the recommended alternative, nonstructural controls would be implemented within one year of project authorization pending the availability of funding. Structural control measures are estimated to take approximately five years to design and construct once authorized and fully funded. After construction is complete, additional time would be required to complete all necessary testing, such as safety and calibration testing, prior to operation.

The Tentatively Selected Plan, in conjunction with the existing Chicago Sanitary and Ship Canal Electric Dispersal Barrier System in Romeoville, Illinois, would provide two control points for swimming ANS to protect Great Lakes' resources. Integrated ANS controls within the Tentatively Selected Plan and the waterway system (e.g., at Brandon Road Lock and Dam and at the Chicago Sanitary and Ship Canal Electric Barrier - see figure on page 4) would maximize the effectiveness of preventing upstream transfer of swimming and floating Mississippi River Basin ANS into the Great Lakes Basin while maintaining navigation and minimizing impacts.

## TENTATIVELY SELECTED PLAN ESTIMATED COSTS

Element	Cost
Construction	\$275,300,000
Nonstructural (Annual)	\$11,300,000
OMRR&R (Annual)	\$8,200,000