

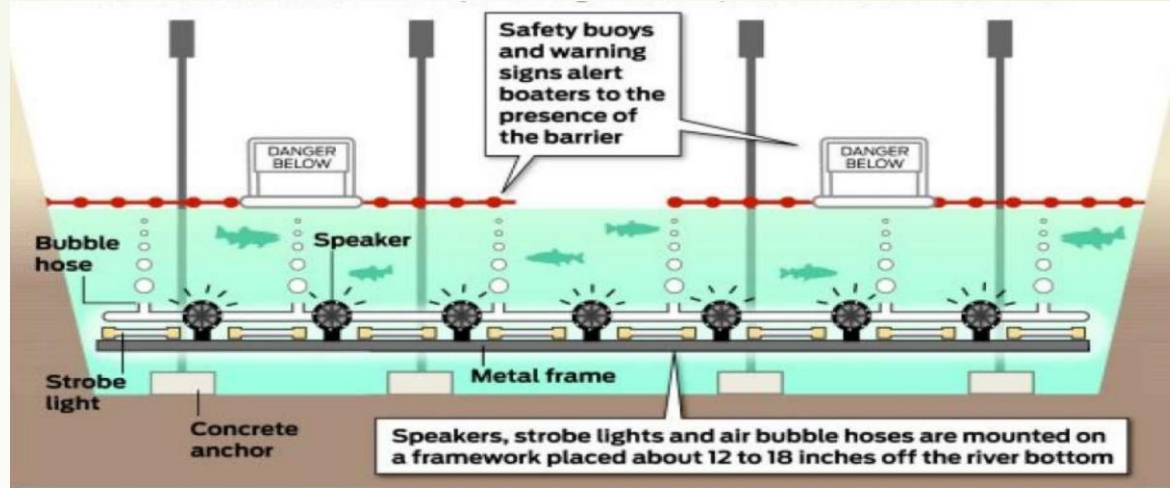
Asian Carp: Next Steps

Asian Carp
Information Meeting
October 27, 2025

Dirk Van Hoesen
Watts Bar Ecology and Fishery Council Chairman

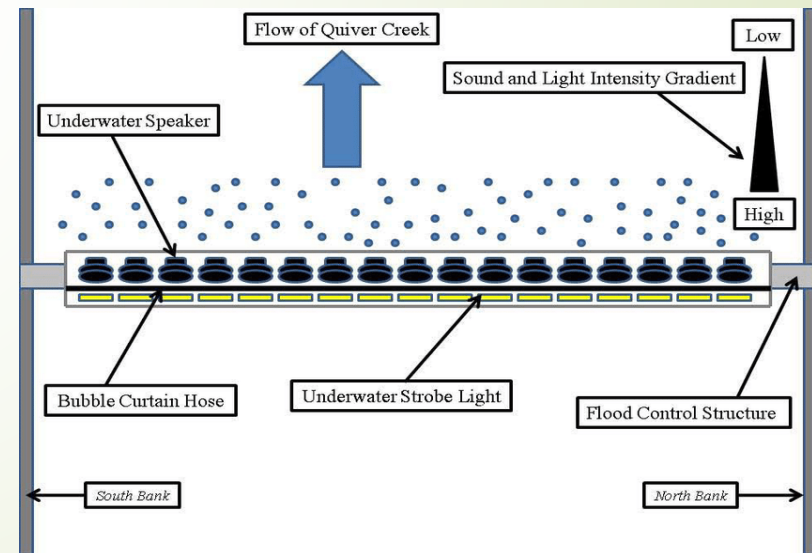
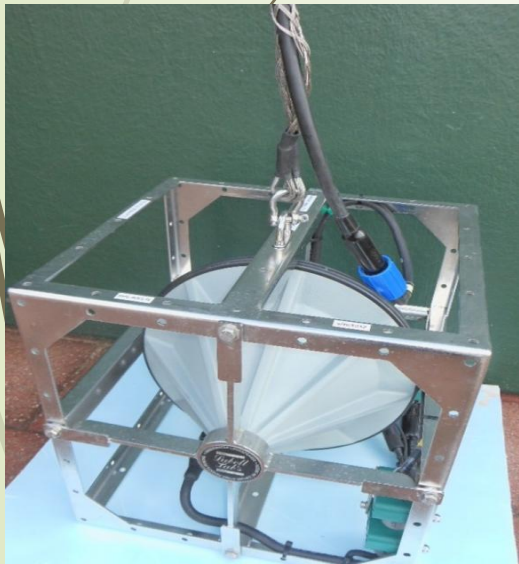


Bio-Acoustic Barrier: Sound, Bubble Curtain, Strobe Lights To Deter/Discourage movement past barrier

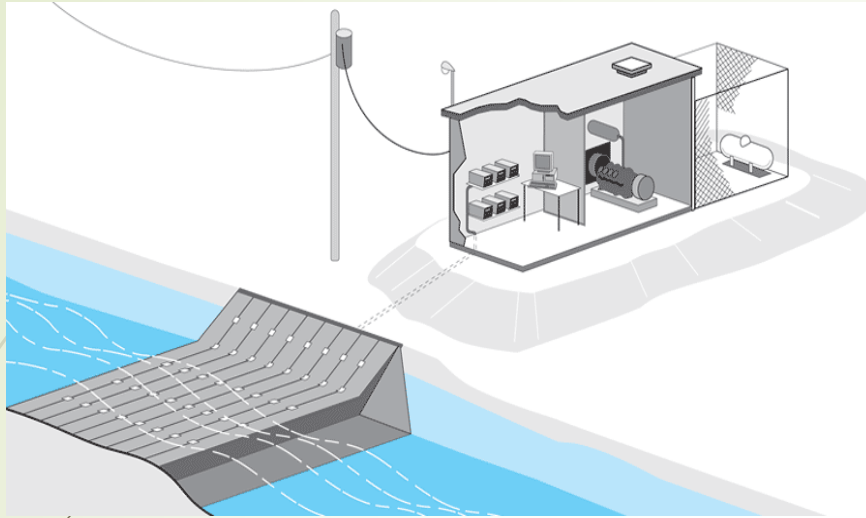


50%
Effective

Cost
\$8 - 10 M



Electric Barriers Prevent Movement Upstream



**NO POSSIBILITY OF
ELECTROCUTION**

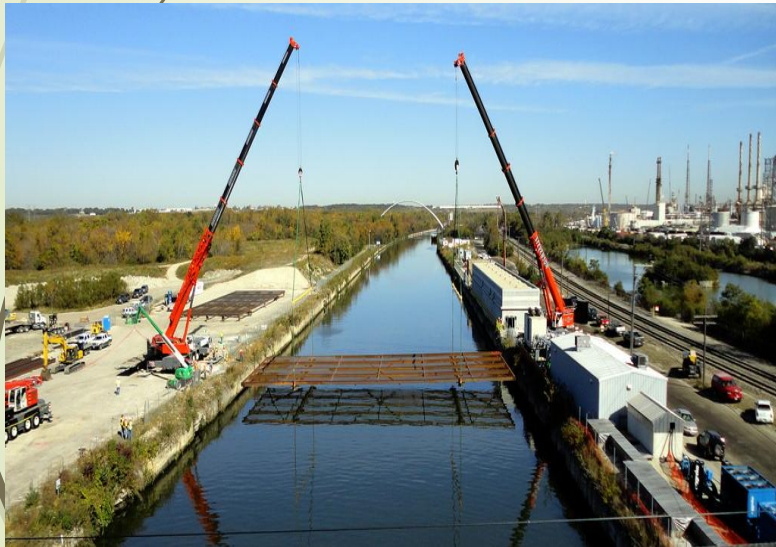
No Injury Ever Reported

50 year-old technology

**94-97%
effective when
operating**

Cost ~\$10 M

>50 Smith and Root Electric Barriers in U.S.



Photos by Smith & Root



Underwater Acoustic Deterrent System (UADS)

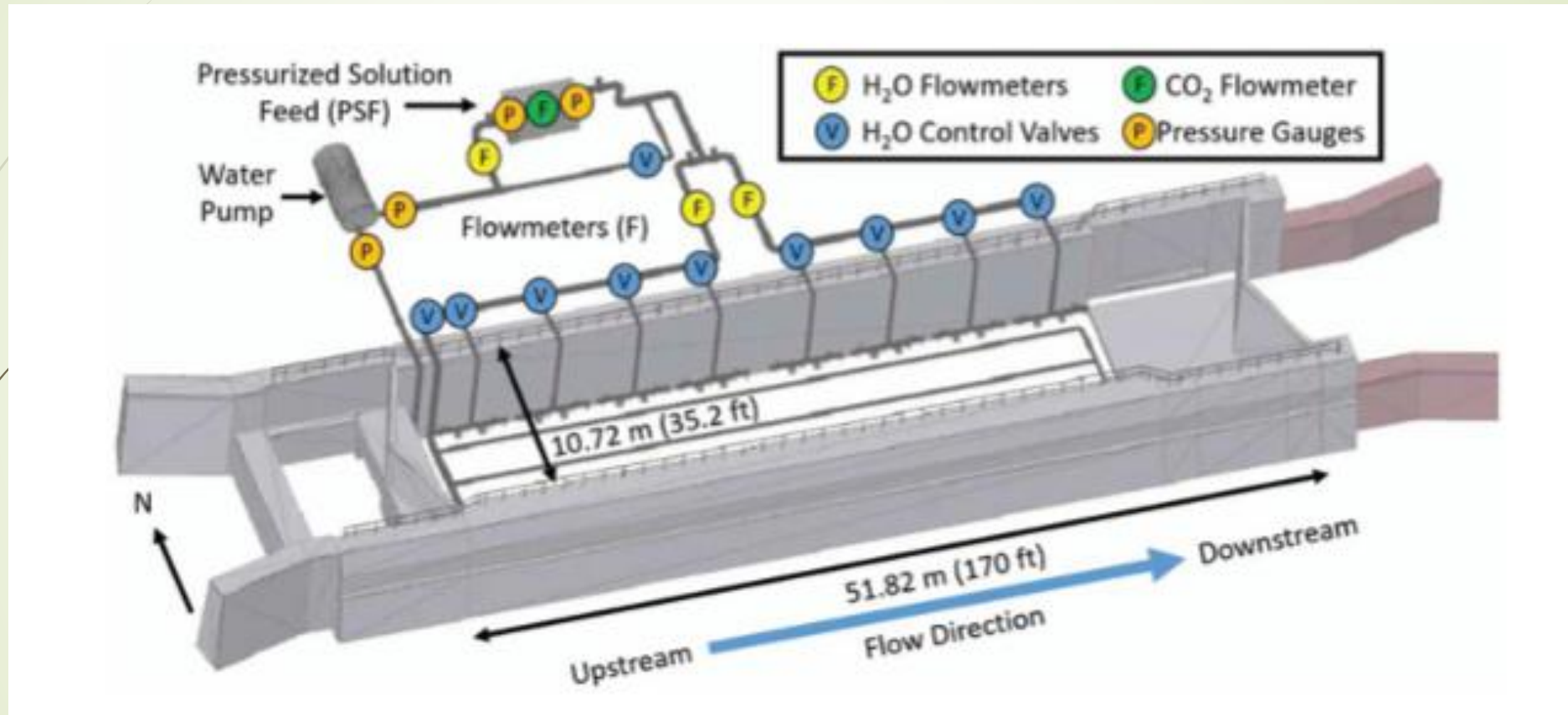


50% effective

\$ 2 M +

UADS being installed by the USGS in the downstream lock approach channel of Mississippi River Lock 19, Keokuk, Iowa, in February 2021.

Carbon Dioxide Forced Circulation (CO₂)



USGS test for CO₂ distribution at the Kaukauna locks on the Fox River near Kaukauna, Wisconsin

Deterrent Summary

- Several promising deterrent technologies.
- Research ongoing – USGS, USACE.
- Not a barrier – effectiveness is an issue.
- Require down time for maintenance.
- Multiple systems required to be effective in stopping Asian carp.
- Capital cost varies – \$2 -10 M/system.
- Operations and maintenance cost varies - \$500 K - \$ 1 M/yr/system



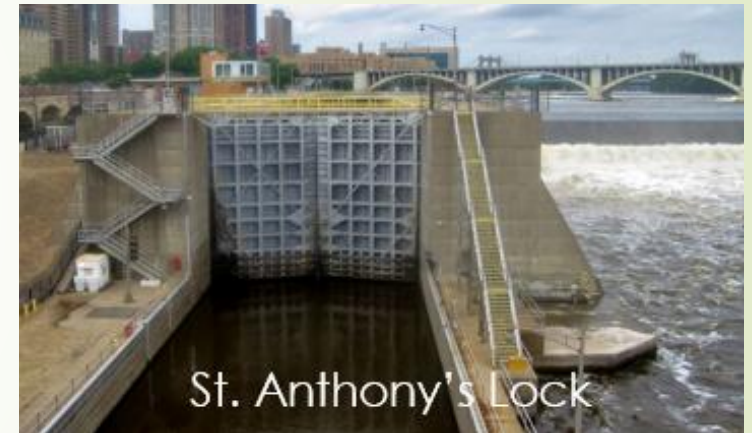
If We Follow “Business As Usual” There Won’t Be Deterrents at Watts Bar for at Least 10 Years

- Design/Permit/Construct Pilot Projects => 3-5 years.
- Temporarily operate Pilot Projects => 3-5 years.
- Authorize/fund/design/permit/construct new deterrents => 4+ years.
- Carp sighting in Chickamauga Lake in 2019 – 6 years ago!
- Even if deterrents installed as part of the WRDA Pilot Project continued to operate they would not stop carp already in the river from advancing upstream.
- We must take action at Watts Bar now!



Silver Carp Movement Upriver Can Be Stopped By Closing/Modifying Lock Operations

- ▶ Lock passage primary means for carp to move.
- ▶ Closing/modifying operations not considered in Pilot Program PgEA.
- ▶ TEMPORARY lock closure is the most effective approach until deterrents can be installed.
- ▶ St. Anthony's lock in Minnesota was closed permanently to stop Asian silver carp advance.
- ▶ Modifying operations to reduce the number of lock cycles is also effective.
- ▶ What are the impacts?



Cost of Shipping by Truck or Rail Instead of Barge

Watts Bar 2024	Tons - K	Additional Cost
Petroleum and Petroleum Products	130	\$4,707,440
Chemicals and Related Products	192	\$11,674,208
Crude Materials, Inedible, except Fuels	427	\$17,357,144
Primary Manufactured Goods	16	\$653,246
Food and Farm Products	88	\$2,953,939
All Manufactured Equipment and Machinery	29	\$1,160,151
Total	882	\$38,506,127

Data Source: USACE LPMS, USACE Inland Navigation Rate Savings per Ton (2022) by L. Bolin

**A small amount of cargo is too big or heavy
to be transported by truck or rail**

Upper TN River Lock Vessel Information

2024 Lock Data	Nickajack	Chickamauga	Watts Bar	Fort Loudon
Recreational Vessels	936	4,089	1,758	1,904
Commercial Vessels	373	383	654	443
Other Vessels	18	14	12	19
Total Vessels	1,327	4,486	2,424	2,366
Total Lockages	785	2,028	1,321	1,135
Ave Vessel Lockage	1.7	2.2	1.8	2.1
Ave Vessels Day	3.6	12.3	6.6	6.5

**~ 275,000 Boats
registered in TN**

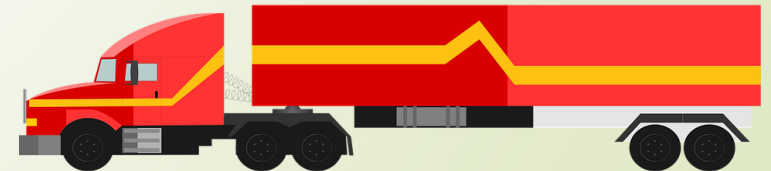
Data Source: USACE LPMS by L. Bolin

Bottom Line for Lock Closure/ Operation Modification

- Total Recreational Value of TNCR at Risk from Asian Carp ~ \$20B annually.
- Recreational Value for 8 counties bordering Upper TN River lakes ~ \$ 2B annually.
- Number of boaters inconvenienced is relatively small.
- Additional cost to transport by Truck / Rail vs by Barge if Watts Bar is Closed ~ \$ 40M.
- Some loads can only be transported by barge.



OR



Approach that Will Protect Watts Bar and Allow Limited Barge Shipments

- ▶ Stop carp movement through Watts Bar Lock by TEMPORARILY limiting vessel traffic.
- ▶ Allow only items too large or heavy to ship by rail or truck – other loads ship by rail or truck.
- ▶ Normal lock operation resumes once deterrents become operational.
- ▶ Economic and convenience impacts from lock operation modifications are much less than impacts from not stopping carp invasion!
- ▶ Also protects Ft. Loudoun, Tellico, and Melton Hill!

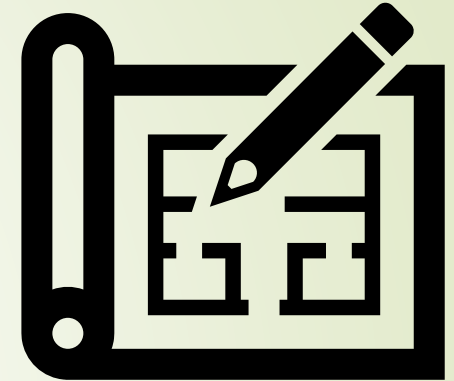


Watts Bar Lock

**Prioritize installation of deterrents at
Watts Bar to minimize length of closure!**

We Need to Develop a Watts Bar Asian Carp Plan

- ▶ We need to develop a plan that
 - ▶ Implements TEMPORARY lock closure with exceptions for large / oversize loads.
 - ▶ Charts the path for future deterrent installation.
- ▶ The Plan should include multiple deterrents.
- ▶ The Plan needs to be based on preliminary engineering studies with defensible cost and schedule estimates.
- ▶ Cost to prepare plan ~\$ 1 M (source of funds - \$ 2 B TN “Rainy Day Fund”).
- ▶ State should take the lead in developing the plan.
- ▶ Ideally the Watts Bar Plan will be part of a Plan that includes other TNCR locks in Tennessee (Nickajack, Chickamauga, Ft. Loudoun, Melton Hill, Cheatham, Old Hickory, Cordell Hull).



In Order To Develop and Implement A Plan to Stop Asian Carp Organizations Must Work Together

- ▶ Department of Interior (DOI), US Fish and Wildlife Service (USFWS), US Geologic Survey (USGS)
- ▶ Mississippi Interstate Cooperative Resource Association (MICRA)
- ▶ Mississippi River Basin Fishery Commission (MRBFC)
- ▶ Tennessee Valley Authority
- ▶ US Army Corps of Engineers
- ▶ Tennessee Asian Carp Advisory Commission (TACAC)
- ▶ Tennessee Wildlife Resources Agency (TWRA)
- ▶ Watts Bar Ecology and Fishery Council (WBEFC) and many other advocacy organizations





Examples of What Can Be Accomplished by Groups Working Together

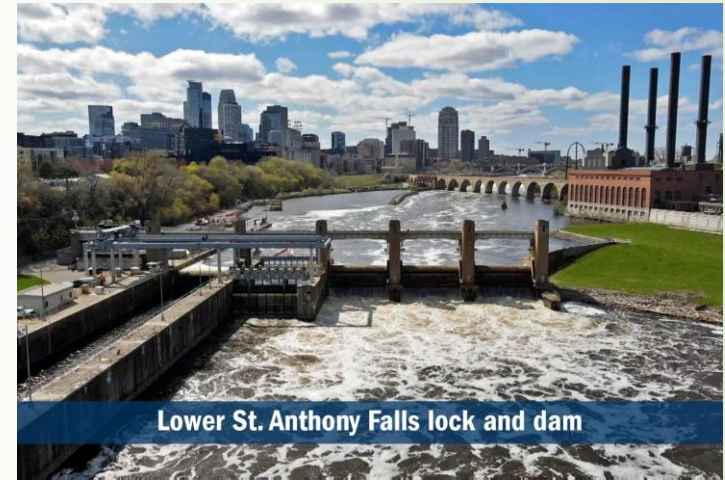
- St. Anthony Lock closure
- Brandon Road Interbasin Project construction

The St. Anthony Lock in Minneapolis Was Permanently Closed to Stop the Asian Silver Carp from Moving Upstream

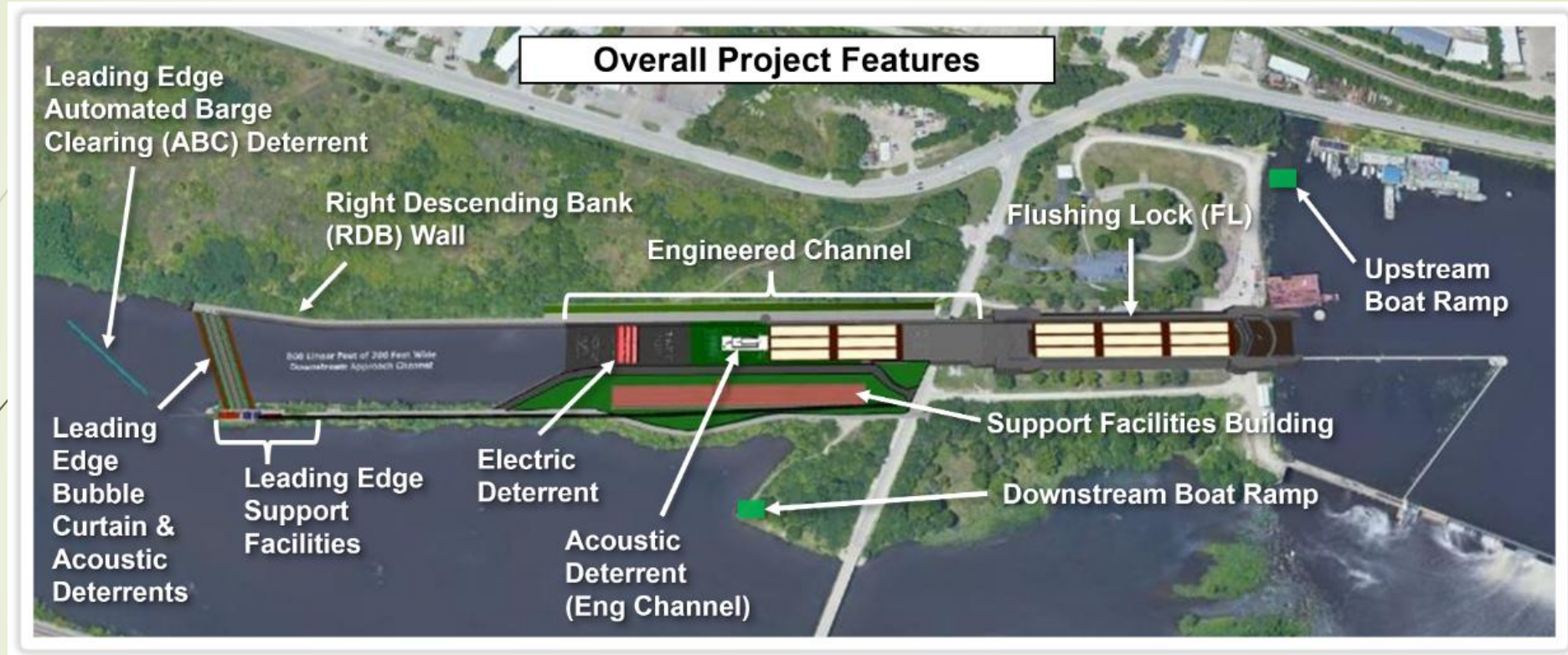
- ▶ U.S. Senator Amy Klobuchar (D), U.S. Reps. Keith Ellison (D) and Eric Paulsen (R) and the rest of Minnesota's congressional delegation worked to get legislation approved to close the lock in 2014.

- ▶ Closure was supported by:

Minnesota Department of Natural Resources, National Parks Conservation Association, Friends of the Mississippi River, National Wildlife Federation, Wild Rivers Conservancy, Midwest Marina Association, Mississippi Park Connection, MN Conservation Federation, MN Division – Izaak Walton League, Conservation Minnesota, Lake Pepin Legacy Alliance, Native Fish for Tomorrow, Minnesota Trout Unlimited, FM Walleyes Unlimited, Fishing For All, MN-FISH, Minnesota Lakes and Rivers Advocates.



Michigan and Illinois Are Taking Action



- The Brandon Road Interbasin Project is designed to prevent upstream movement of invasive carp and other aquatic nuisance species into the Great Lakes from the Illinois Waterway.
- The \$1.15 B project began construction in 2024 (State and Federal funded).

Opportunities - Chickamauga Lock Replacement



- Authorized in 2003.
- Initial preparation started in 2006, major construction started in 2012.
- Construction halted for 3 years due to funding limitations.
- Initial operation in 2028, full operation in 2032.
- Estimated cost just under \$1 B.
- Now is the time to install deterrents!!

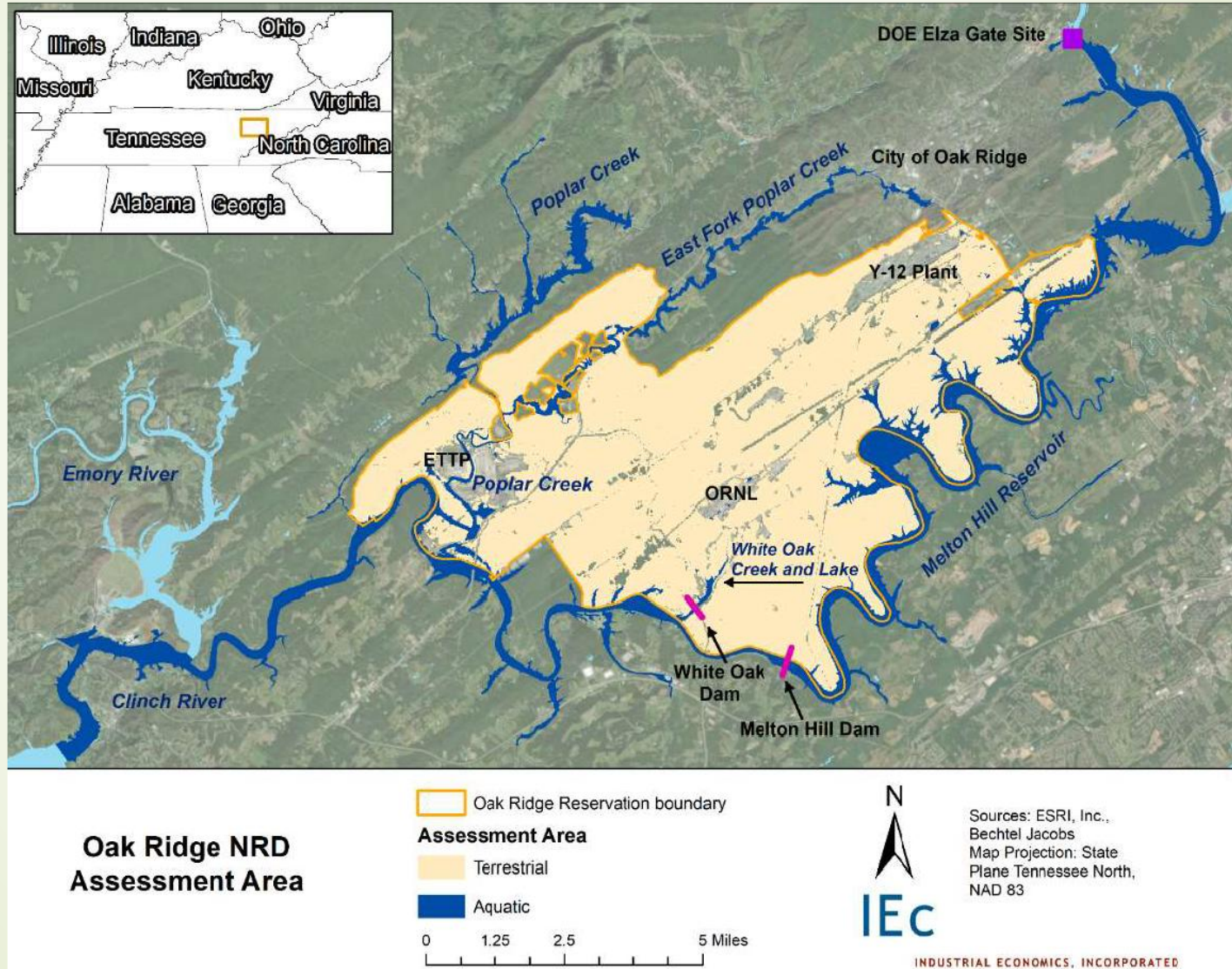
Opportunities - Oak Ridge Reservation Natural Resource Damages Restoration Project Grant Program (ORR NRDRP)

- \$42 M grant program to restore the environment in and around the Oak Ridge Reservation.
- Grant Trustees



- Strategic investment Areas
 - Ecological Restoration Projects – Invasive Species
 - Groundwater Projects
 - Recreation Projects

Opportunities - ORR NRD RP (Cont'd)



Opportunities – ORR NRD RP (Cont'd)

- Reimbursable grant with 20% matching requirement
- First grant notice for \$10 M issued September 2025 and additional grant notices anticipated every 2 years.
- Next grant call ~September 2026.
- Due to geographical limitations Watts Bar Lock is the only location eligible for deterrent installation.
- WBEFC submitted a proposal in February 2025 for \$500 K (with a matching proposal to the Appalachian Regional Commission planned) for engineering and permitting for multiple deterrents.
- Grant not awarded - based on feedback from the Trustees we need to develop a proposal for actual deterrent installation.
- Assuming \$5 – 20 M cost (depending on number of deterrent systems) at least \$1 - 4 M “matching” funds must be identified.

Importance of State Leadership

- Can't rely on Federal action – too many competing needs.
- The State needs to take the lead in pushing action – like Illinois and Michigan.
- Re-evaluate Asian Carp Commission need and role.
- Dedicate additional funds.
- Direct State agencies to
 - Develop Watts Bar and State-wide Asian carp plan
 - Pursue temporary Watts Bar Lock closure and installation of deterrents.



What You Can Do

- ▶ Learn about Asian carp and ways to keep them from advancing.
- ▶ Get involved with an advocacy group.
- ▶ Communicate your opinion to Local, State, and Federal representatives.

Be the LOUD voice!





WBEFC

WATTS BAR ECOLOGY AND FISHERY COUNCIL

- We are looking for volunteers with experience and interest in
 - Social media
 - Web site design
 - Fund raising
 - Community / political engagement
- If interested in taking an ACTIVE role in battling the Asian carp please contact us at mail@wbefc.com



To Save Watts Bar and Upper TN Lakes

- ❖ Lock passage restricted TEMPORARILY to only large loads until deterrents are operational.
- ❖ Install deterrents at Watts Bar to protect Upper TN Lakes.

Silver Carp MUST be blocked from reaching us!

With timely actions we can prevent damage to the \$2+ Billion annual regional recreation economy, maintain natural ecosystem stability / biodiversity / healthy fishery, and ensure safe recreation

No Action



Which Legacy?

*Thank You
WBEFC*

Action

