

# GLMRIS BRANDON ROAD STUDY

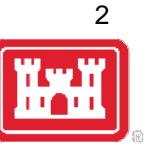
Date: July 2019



US Army Corps  
of Engineers®



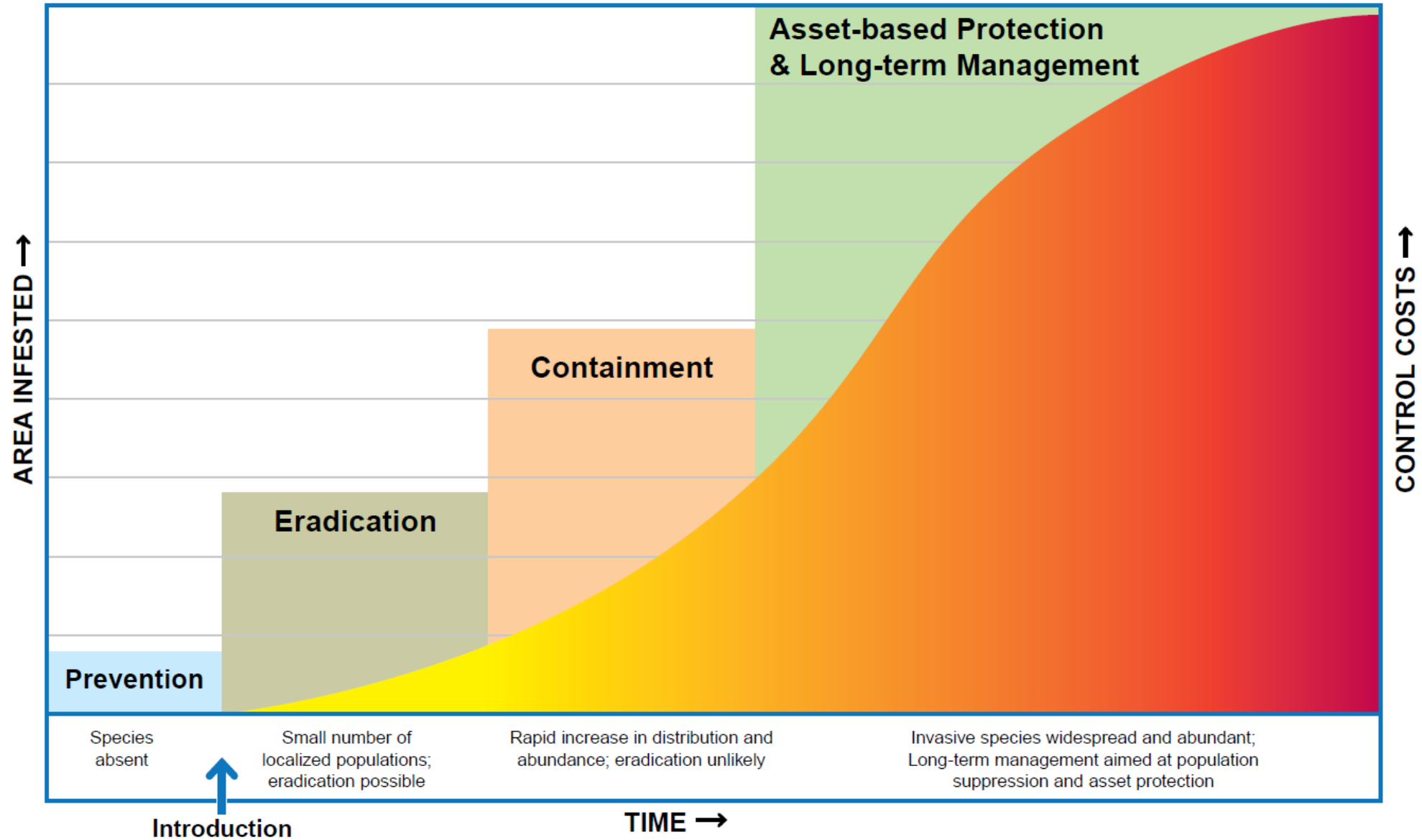
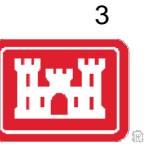
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- The Chiefs Report recommending a National Ecosystem Restoration (NER) Plan, “federal plan” was signed on 23 May 2019 and sent to Congress.
- The NER Plan is a federal risk management plan including a layered system of structural controls and nonstructural measures.
- Nonstructural measures can begin upon appropriation.
- The Recommended Structural Plan is the Technology Alternative Acoustic Fish Deterrent with Electric Barrier, which includes the following measures: acoustic fish deterrent, bubble curtain, an engineered channel, an electric barrier, a flushing lock, and boat launches.
- Total Estimated cost is \$830,784,000 cost shared 65/35 with the sponsor, the State of Illinois and can be broken into phases.
- OMRR&R is cost shared 80/20 Federal/Non-federal.
- The Corps is working with state of Illinois to execute a design agreement to initiate the PED phase.
- Illinois is coordinating with Great Lake states and provinces to align regional interest in implementing a project. A two-day Illinois-led meeting is planned for mid-July in Chicago.
- PED could take two to four years to complete, subject to the availability of funds.
- Construction is expected to take 6 to 8 years to complete. Timeline for structural implementation will be further developed in the PED phase.

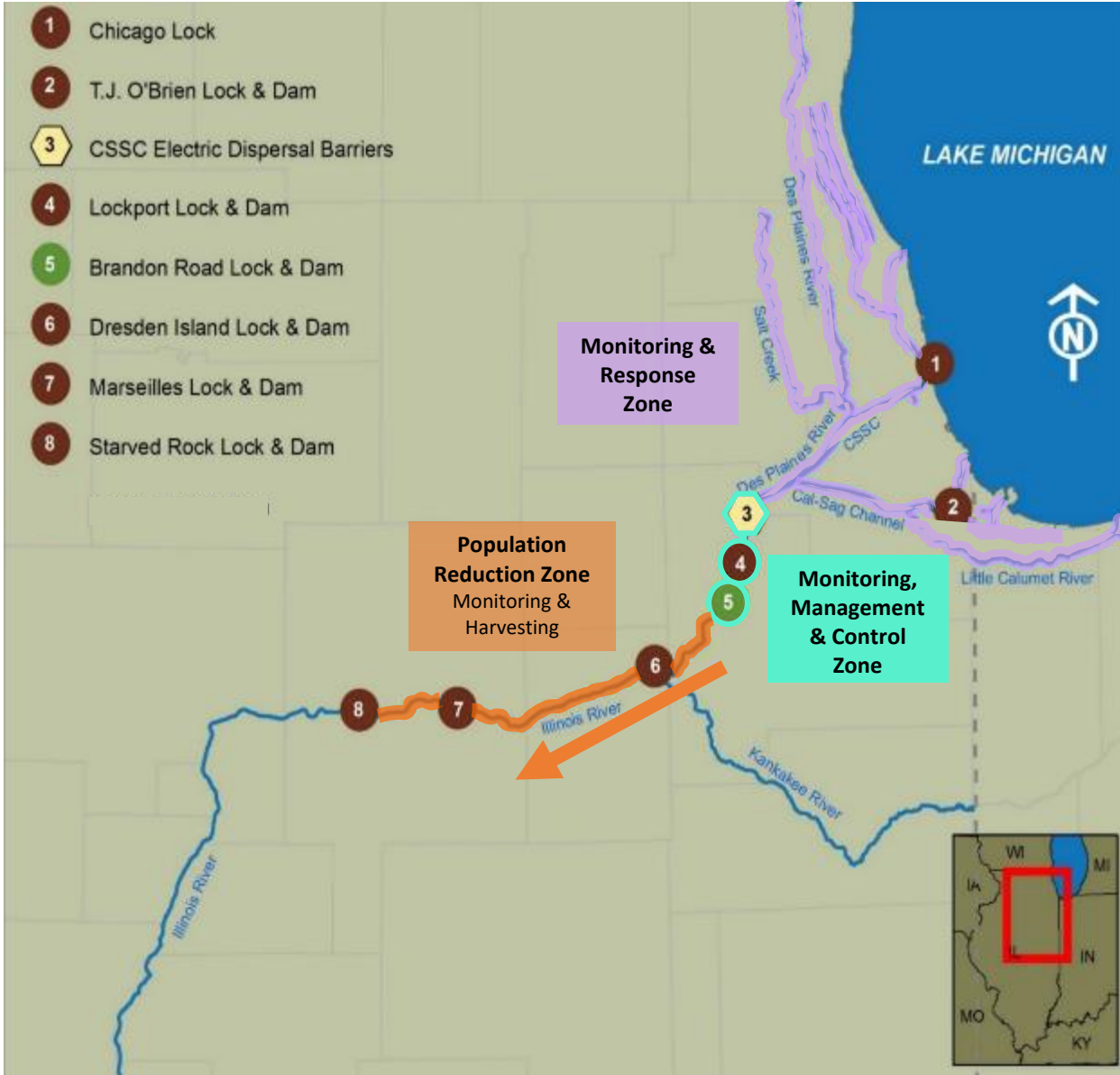


# BRANDON ROAD STUDY





# FEDERAL RISK MANAGEMENT PLAN



- The Recommended Plan is a federal risk management plan including a layered system of structural controls and non-structural measures.
- Nonstructural measures are implemented primarily by other federal agencies including USFWS & USGS which can begin upon appropriation.
- Nonstructural measures include public education and outreach, nonstructural monitoring, integrated pest management, pesticides, manual or mechanical removal, and research and development.
- The Corps structural plan includes a new control point at Brandon Road Lock and Dam in addition to the control point that is already provided at by the electric dispersal barrier.





# BRANDON ROAD STUDY RECOMMENDED STRUCTURAL PLAN





# BRANDON ROAD COST APPORTIONMENT



Contributor	Estimated Project First Costs <sup>a</sup>
<b>Recommended Plan</b>	
USACE (65%)	\$540,010,000
Non-Federal (35%)	\$290,774,000
<b>Total Federal Contribution</b>	<b>\$540,010,000</b>
<b>Total Non-Federal Contribution</b>	<b>\$290,774,000</b>
Cash	\$287,462,000
LERRDs	\$3,312,000
<b>Total Project First Costs</b>	<b>\$830,784,000</b>
<b>Nonstructural Measures (Equivalent Average Annual Cost)<sup>b</sup></b>	
<b>Project</b>	
USACE	\$325,000
Non-Federal sponsor	\$175,000
<b>Not Project Costs</b>	
Department of the Interior	\$11,823,000
<b>Total Nonstructural Measures</b>	<b>\$12,323,000</b>
<b>OMRR&amp;R (Equivalent Average Annual Cost)<sup>c</sup></b>	
USACE	\$6,455,000
Non-Federal	\$1,607,000
<b>Total OMRR&amp;R</b>	<b>\$8,062,000</b>

Increment	Estimated Project First Costs <sup>a</sup>
1	\$205,700,000
2	\$534,945,000
3	\$90,139,000
<b>Total Project First Costs</b>	<b>\$830,784,000</b>
<sup>a</sup> All costs are presented at the FY19 price level and rounded to the nearest thousand. Costs of increments may not sum to total due to rounding.	

**\*Cost certified with 66% contingency**

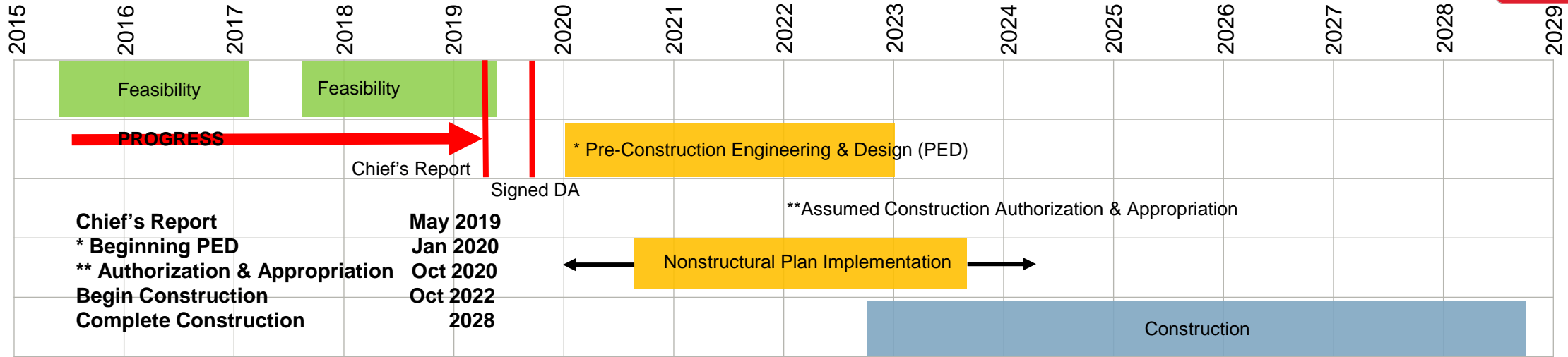
<sup>a</sup> All costs are presented at the October 2018 (Fiscal Year (FY) 2019) price level and rounded to the nearest thousand. Average annual costs were estimated using a base year of 2022 and a 50-year period of analysis.

<sup>b</sup> Nonstructural measures 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.

<sup>c</sup> 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



# BRANDON ROAD PROJECT SCHEDULE



\* PED is able to begin after submittal of Chief's Report to ASA(CW) and Design Agreement is signed pending funding

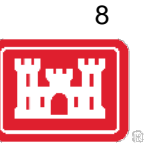
## Key Schedule Drivers

- Signed design agreement with sponsor
- Non-federal sponsor/cost share agreements (DA/PPA)
- Availability of PED funds in FY 20
- Complex innovative designs increase PED duration
- Construction authorization & appropriation
- Real Estate Acquisition/HTRW
- Maintaining navigation during construction extends duration





# BRANDON ROAD PRECONSTRUCTION ENGINEERING & DESIGN POTENTIAL RISK REDUCTION INCREMENT I ACTIVITIES



Data Gathering & Research	Engineering & Design
*Phase II HTRW Investigation	Engineered Channel Design
*Geotechnical Exploration	Air Bubble Curtain Design
*Topographical, Boundary, Utility Surveys	Acoustic Deterrent Design
Waterway Numeric Model for Flood Flows & Navigation Conditions	Control Building Design
Initiate Physical Modeling of the Flushing Lock	Upstream Boat Ramp Design
Physical Modeling of the Channel	Initiate Flushing Lock Design
Acoustic Deterrent Research	Initiate Electric Barrier Design
Bubble Curtain Research	Engineering Charrette
ANS Control Research/Testing & ANS Control Interaction Studies	Value Engineering
Concept Studies, Engineered Channel Wall, Channel Floor	Permit Coordination
Shallow Electric Barrier Research, (Stray Current Numeric Model for Insulation Termination & Channel Length Shortening)	Engineering Specifications & Drawings Risk Reduction Increment I
	30% PED & Drawings for Risk Reduction Increments II & III

\*signed design agreement with non-federal sponsor is a prerequisite prior to PED initiation.





# RISK REDUCTION INCREMENT I



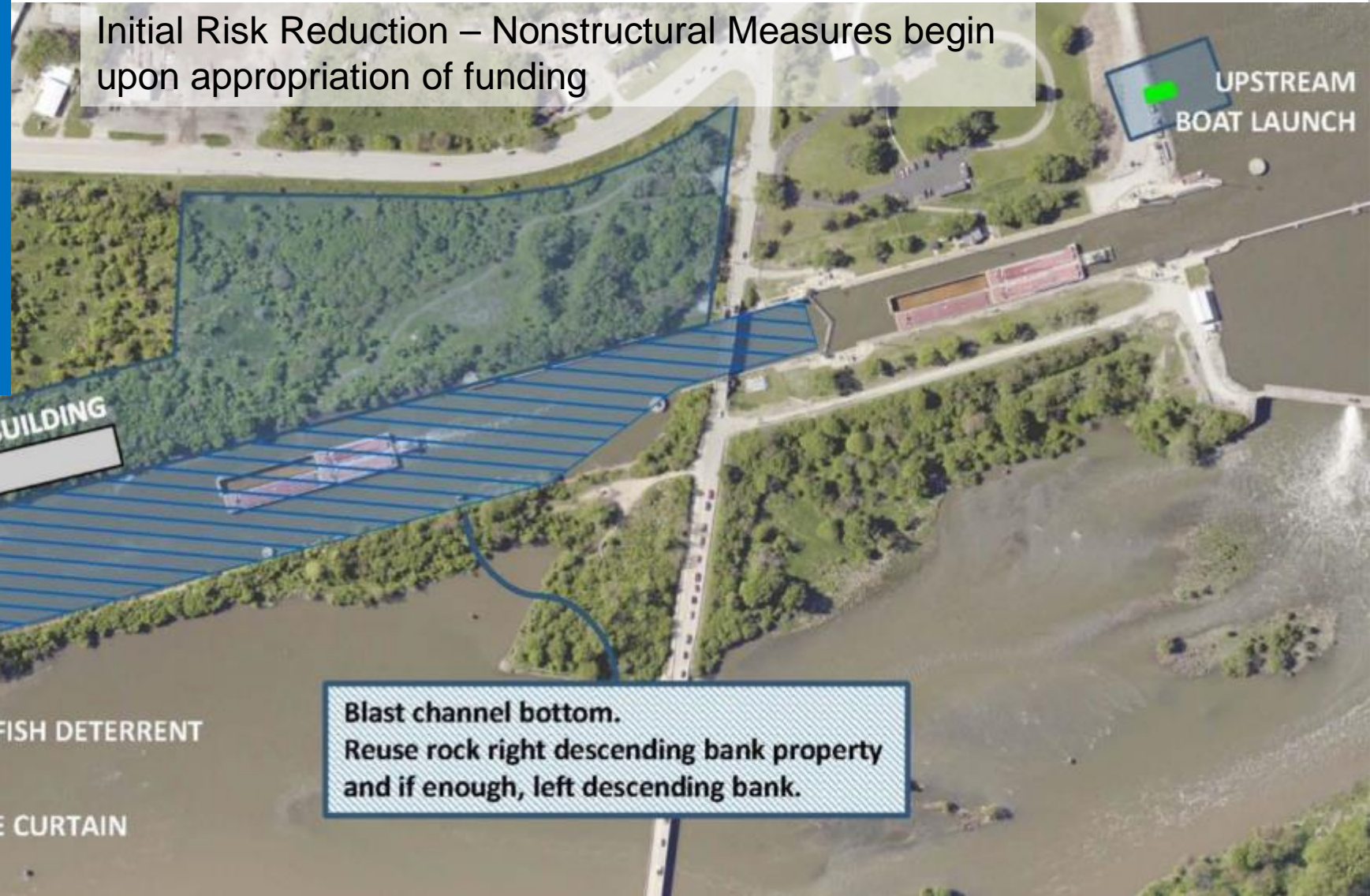
## Risk Reduction Increment I

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

Cost \$205,700,000

Design & Const. Duration 4-5 yr.

Timeline for structural implementation will be further developed in the PED phase.







# RISK REDUCTION INCREMENT II

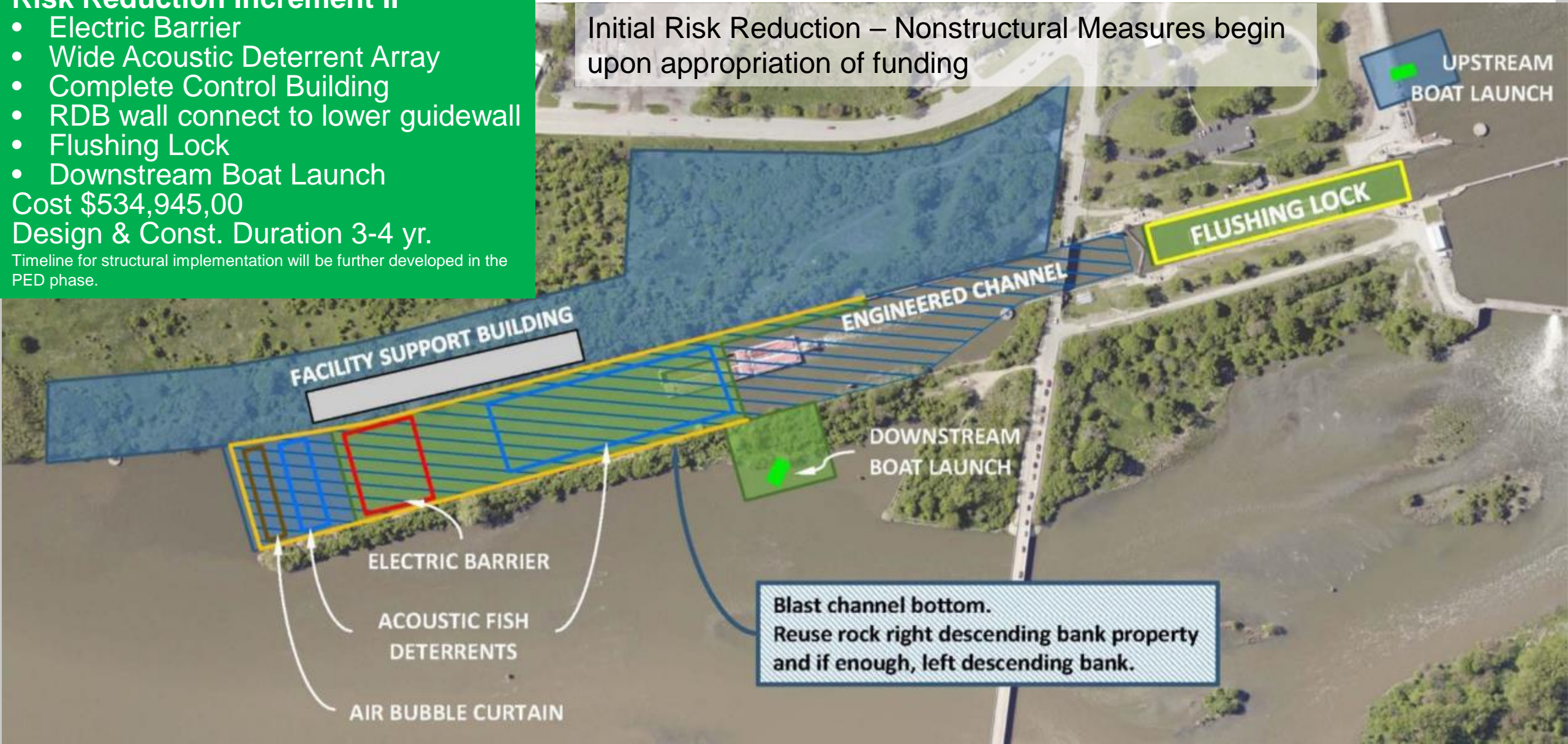


**Risk Reduction Increment II**

- Electric Barrier
- Wide Acoustic Deterrent Array
- Complete Control Building
- RDB wall connect to lower guidewall
- Flushing Lock
- Downstream Boat Launch

Cost \$534,945,00  
 Design & Const. Duration 3-4 yr.  
 Timeline for structural implementation will be further developed in the PED phase.

Initial Risk Reduction – Nonstructural Measures begin upon appropriation of funding







# RISK REDUCTION INCREMENT III



**Risk Reduction Increment III**

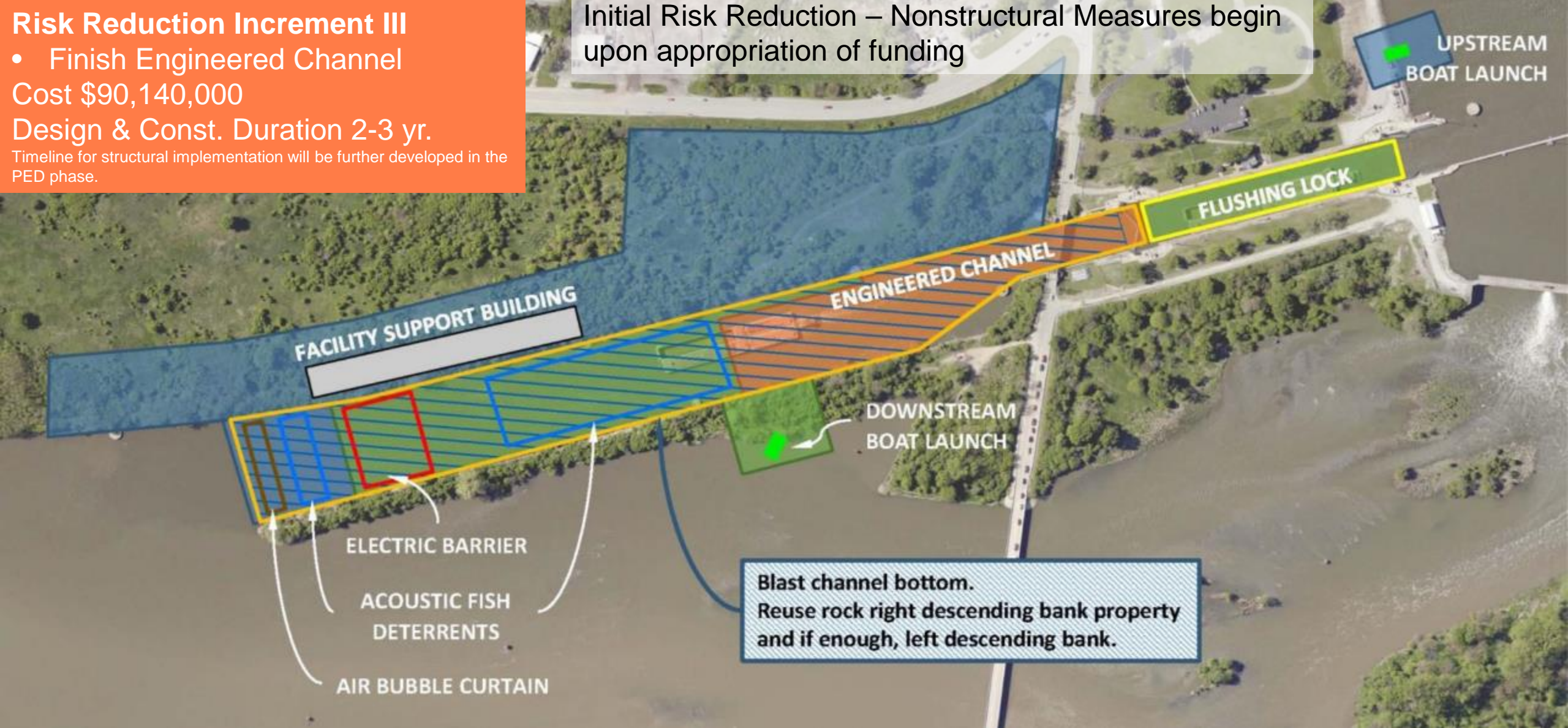
- Finish Engineered Channel

Cost \$90,140,000

Design & Const. Duration 2-3 yr.

Timeline for structural implementation will be further developed in the PED phase.

Initial Risk Reduction – Nonstructural Measures begin upon appropriation of funding







# LEVERAGED EXPERTISE & SHARED RESPONSIBILITY



## Great Lakes and Mississippi River Interbasin Study – Program Management

**GLMRIS Executive Steering Committee**  
 USACE • USFWS • USCG • NOAA • USEPA • USDOT

- Great Lakes Commission
- International Joint Commission
- Great Lakes Fisheries Commission
- Metro WRD of Greater Chicago
- State DNRs

**GLMRIS Senior Executive Review Group**  
 USACE HQ • LRD • MVD • SERG Co-chairs

- LRD & MVD CGs, SES
- Chicago & Rock Island Commanders & DPMs
- Regional Integration Team Deputies
- Laboratory and CX Leadership

**Stakeholders**

**NEPA Scoping Interest Groups:**  
 Navigation & Environmental Communities

**Non-Governmental Organizations**  
 (CAWS Advisory Committee)

**Brandon Road Work Group**

**Congressional Engagements**

### Brandon Road Project Management MVR

**Planning**  
 MVP/MVR  
 LRC

**Real Estate**  
 MVR

**Communications**  
 MVR, LRC

**Economics**  
 LRC, PCXIN

**Nat Res & NEPA**  
 MVR, LRC

**ANS Risk & Tech**  
 Eco-PCX,  
 LRC, MVR, ERDC  
 \*

**Engineering**  
 Inland Navigation  
 Design CX, NWW  
 Cost DX, & LRC



\* Research & Design is in coordination with the GLMRIS Program and other ANS efforts.



## NEXT STEPS



- Execute design agreement with non-federal sponsor
- Begin real estate and geotechnical site work upon receipt of PED funds (fed and non-fed)
- Implement non-structural measures upon receipt of appropriations
- Continue collaboration forums during PED phase