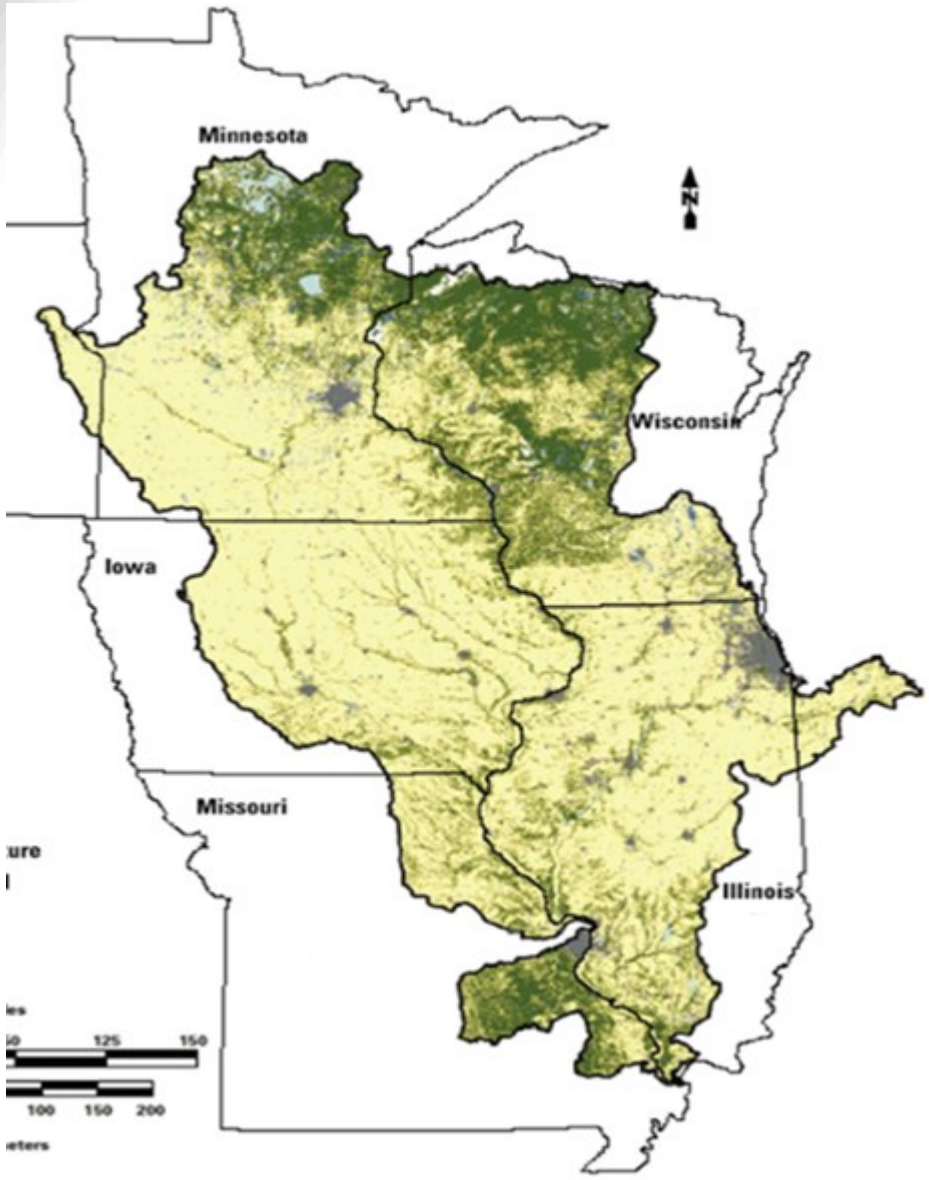
LOWER POOL 4
ROBINSON LAKE
HABITAT REHABILITATION & ENHANCEMENT PROJECT

Ben Nelson
Project Manager
St. Paul District
27 February 2025

UPPER MISSISSIPPI RIVER RESTORATION



Program Authority (Section 1 of the Report)

Authorized under the Water Resources Development Act (WRDA) 1986

Fish and wildlife Habitat Rehabilitation and Enhancement Projects (**HREP**s)

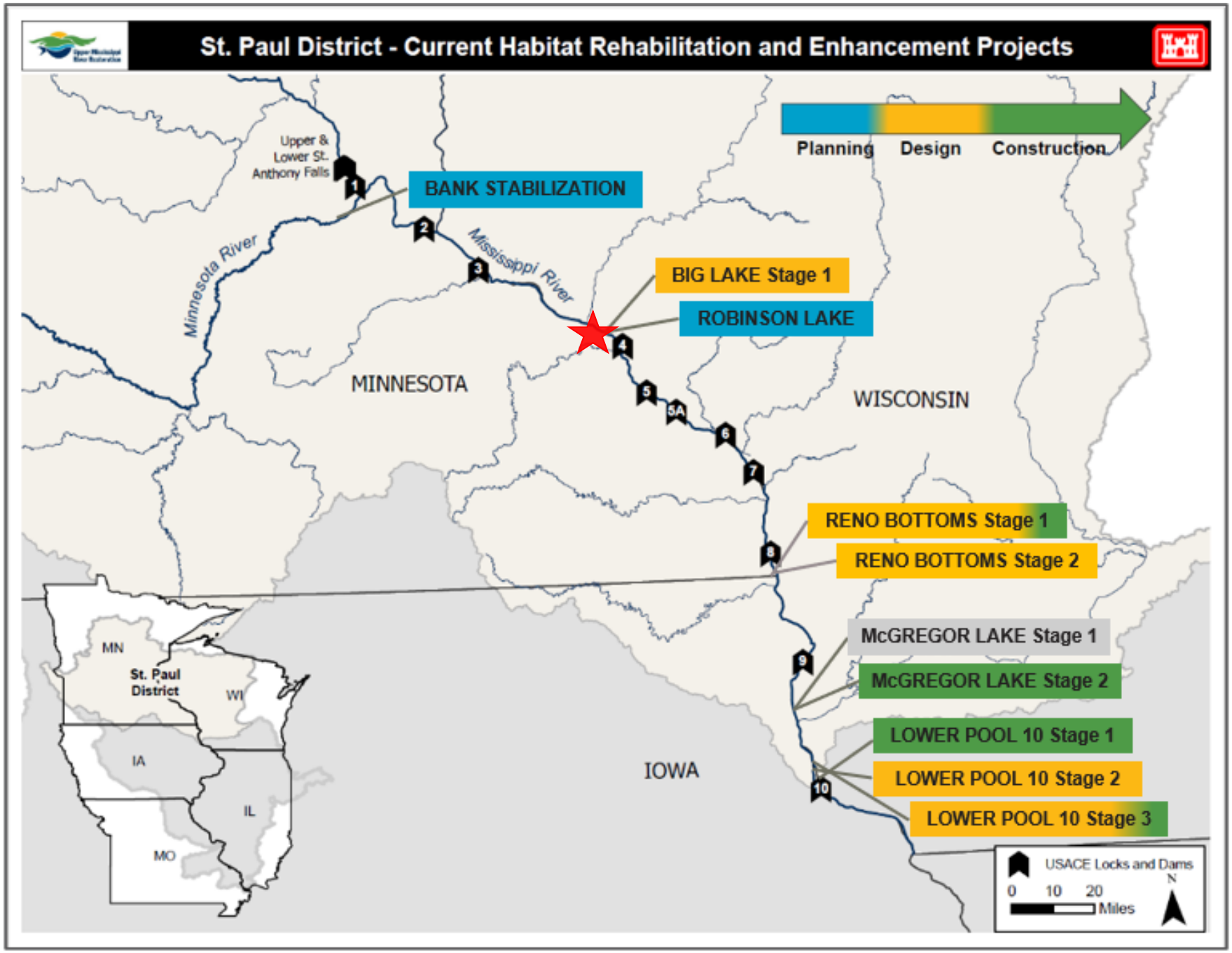
[33 U.S.C. 652(e)(1)(A)(i)]

"planning, construction, and evaluation of measures for fish and wildlife habitat rehabilitation and enhancement"

Upper Mississippi River Restoration
Leading · Innovating · Partnering

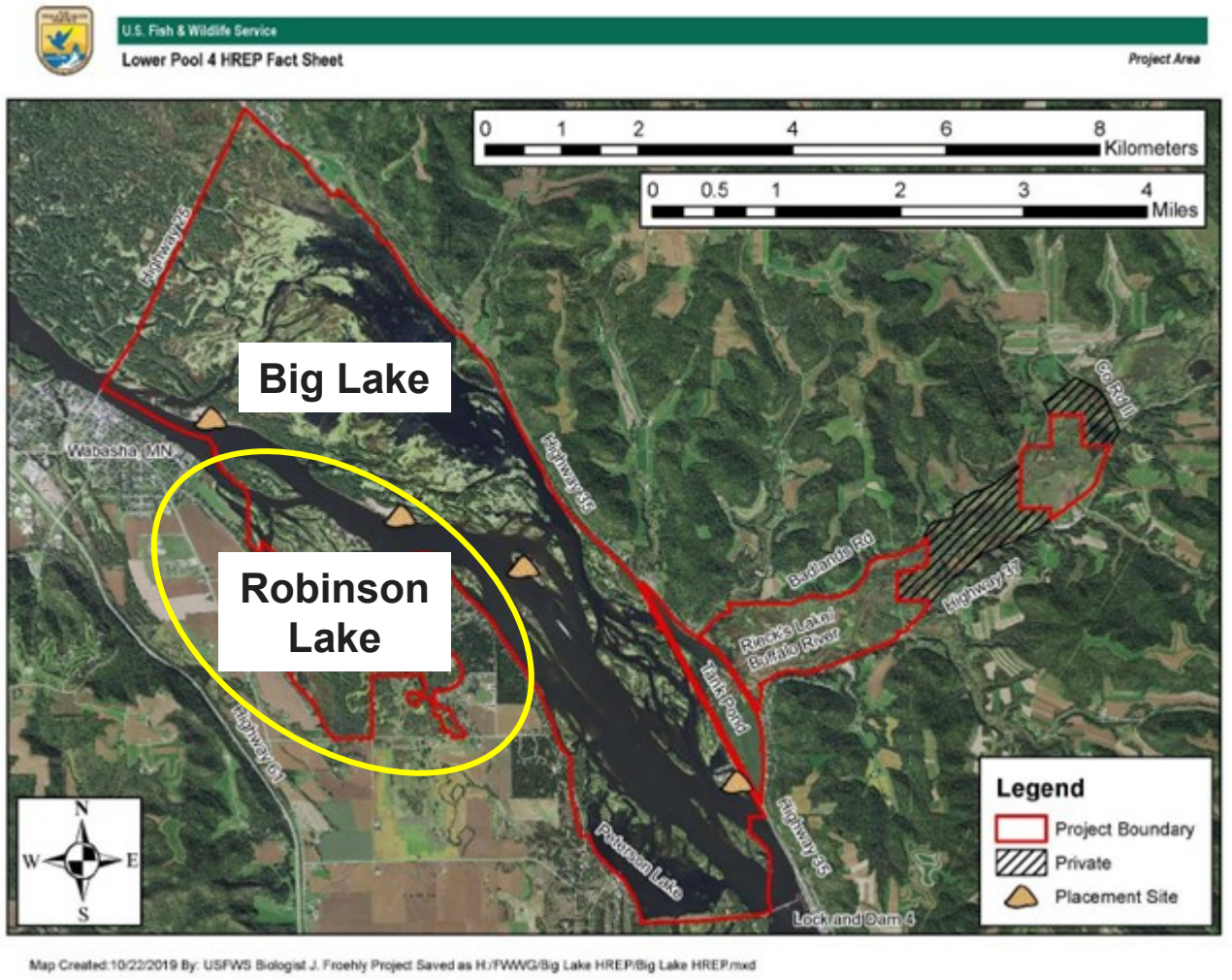
Active HREPs:

- Currently all located on the Refuge and sponsored by the USFWS
- 100% federally funded
- Agency partners include Minnesota, Wisconsin, and Iowa Departments of Natural Resources



LOWER POOL 4 FACT SHEET (2020)

- Fact Sheet included in Appendix A and on the website
  - Phase 1: Big Lake
  - **Phase 2: Robinson Lake**
    - Initiated in January 2023



BIG LAKE HREP

Public meetings

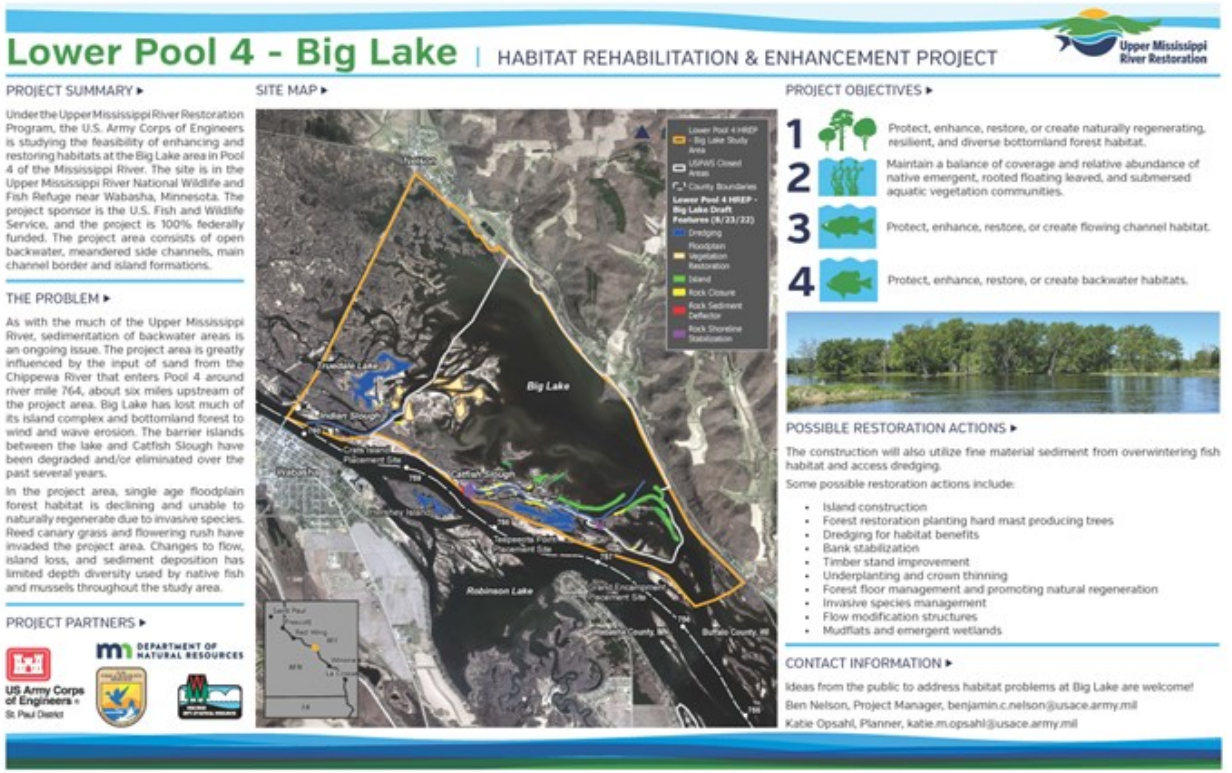
- 29 August 2022 – Initial meeting
- 8 November 2023 – Public Draft Report

Feasibility Report/Environmental Assessment

- Finding of No Significant Impact (FONSI)
- June 2024

Design

- September 2024 - Summer 2026



Lower Pool 4 - Big Lake | HABITAT REHABILITATION & ENHANCEMENT PROJECT

Upper Mississippi River Restoration

PROJECT SUMMARY ▸

Under the Upper Mississippi River Restoration Program, the U.S. Army Corps of Engineers is studying the feasibility of enhancing and restoring habitats at the Big Lake area in Pool 4 of the Mississippi River. The site is in the Upper Mississippi River National Wildlife and Fish Refuge near Wabasha, Minnesota. The project sponsor is the U.S. Fish and Wildlife Service, and the project is 100% federally funded. The project area consists of open backwater, meandered side channels, main channel border and island formations.

THE PROBLEM ▸

As with the much of the Upper Mississippi River, sedimentation of backwater areas is an ongoing issue. The project area is greatly influenced by the input of sand from the Chippewa River that enters Pool 4 around river mile 764, about six miles upstream of the project area. Big Lake has lost much of its island complex and bottomland forest to wind and wave erosion. The barrier islands between the lake and Catfish Slough have been degraded and/or eliminated over the past several years.

In the project area, single age floodplain forest habitat is declining and unable to naturally regenerate due to invasive species. Reed canary grass and flowering rush have invaded the project area. Changes to flow, island loss, and sediment deposition has limited depth diversity used by native fish and mussels throughout the study area.

PROJECT PARTNERS ▸

US Army Corps of Engineers, St. Paul District

Department of Natural Resources

SITE MAP ▸

Big Lake

Robinson Lake

PROJECT OBJECTIVES ▸

1. Protect, enhance, restore, or create naturally regenerating, resilient, and diverse bottomland forest habitat.
2. Maintain a balance of coverage and relative abundance of native emergent, rooted floating leaved, and submersed aquatic vegetation communities.
3. Protect, enhance, restore, or create flowing channel habitat.
4. Protect, enhance, restore, or create backwater habitats.

POSSIBLE RESTORATION ACTIONS ▸

The construction will also utilize fine material sediment from overwintering fish habitat and access dredging.

Some possible restoration actions include:

- Island construction
- Forest restoration planting hard mast producing trees
- Dredging for habitat benefits
- Bank stabilization
- Timber stand improvement
- Underplanting and crown thinning
- Forest floor management and promoting natural regeneration
- Invasive species management
- Flow modification structures
- Mudflats and emergent wetlands

CONTACT INFORMATION ▸

Ideas from the public to address habitat problems at Big Lake are welcome!

Ben Nelson, Project Manager, benjamin.c.nelson@usace.army.mil

Katie Opsahl, Planner, katie.m.opsahl@usace.army.mil

Website updates

Email biglakehrep@usace.army.mil or umrr-mvp-hrep@usace.army.mil to be added to the email list

ROBINSON LAKE HREP

Status:

– Previous public meeting
- May 17, 2023
- Background info & Initial concepts

– Draft Feasibility Report & Environmental Assessment
- Document released February 20, 2025
- Public meeting today

COMMENTS MAY 2023 PUBLIC MEETING

- Changes to Robinson Lake over the past few years/decades
  - Loss of open water habitat (shallower)
  - Sedimentation
  - Increased aquatic vegetation
- Interest in removing sediment and creating deeper areas for fish and recreation
- Consider human habitat
- Dredging along shorelines for access and use material to build islands

(FAQ from May 2023 meeting on website)

Photo submitted by Lauri Hassinger

Photo submitted by Sarah Wilhelmson

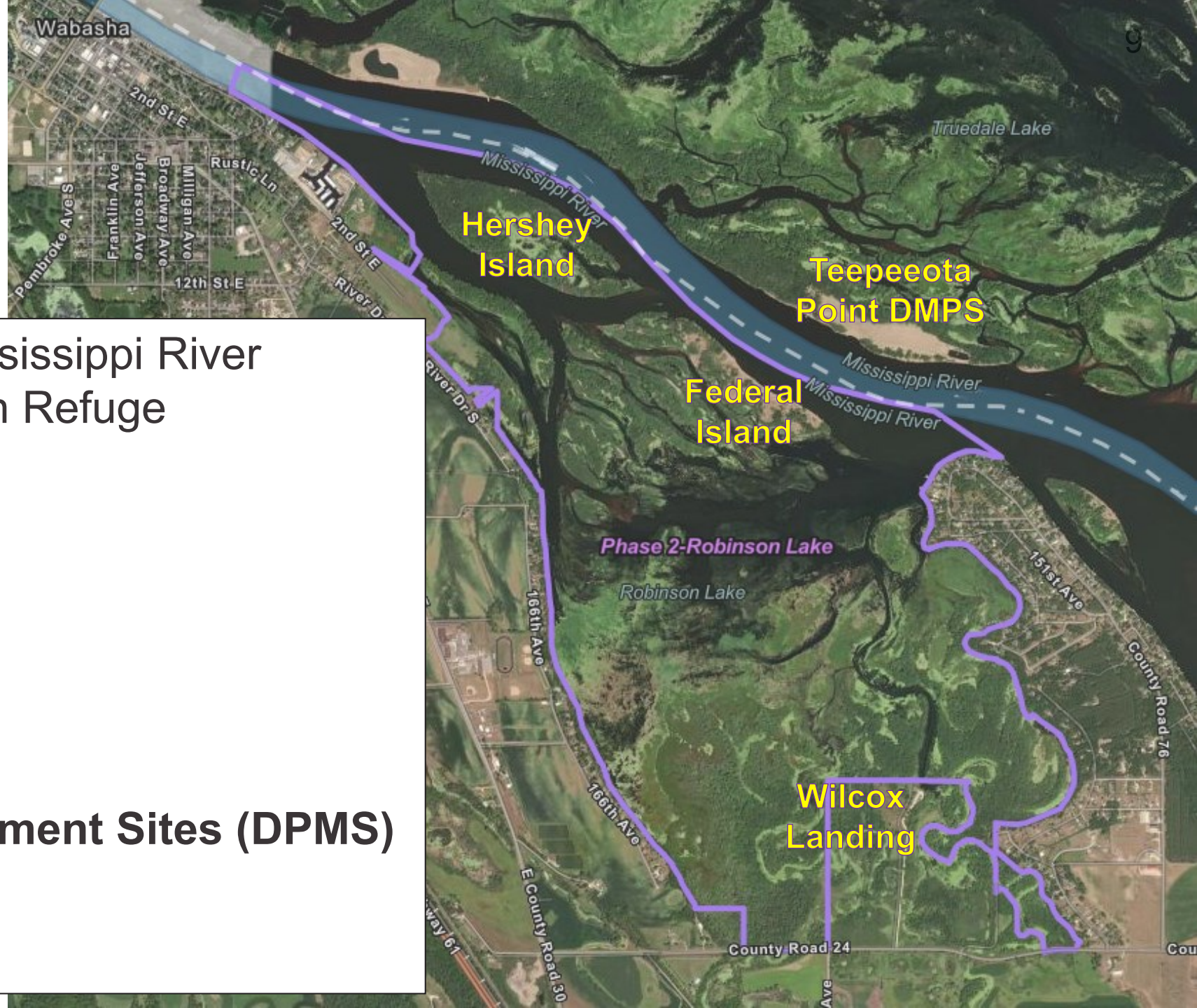
NAVIGATION DREDGING

- The Corps dredges for maintenance of 9-foot navigation channel in the Mississippi River
- Federal navigation includes commerce, national security needs, and public recreation. The Corps does not dredge for personal navigation needs
- Dredged material placement sites near the study area: Crats Island, Teepeota Point, Grand Encampment

ROBINSON LAKE STUDY AREA

- Entirely within Upper Mississippi River National Wildlife and Fish Refuge
- **Key areas:**
  - Robinson Lake
  - Wilcox Landing
  - Federal Island
  - Hershey Island
- **Dredged Material Placement Sites (DPMS)**
  - Teepeeota Point

Section 1 in the Report



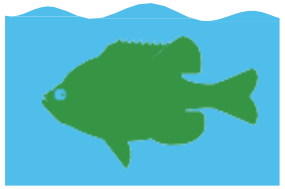
PROBLEMS (SECTION 2.3.1)

- Sediment from the Chippewa River & deposition in the backwaters
- Loss of historic island complex
- Poor water circulation and high nutrient concentrations - algal growth and anoxic conditions
- Lack of depth diversity
- Limited backwater fish habitat
- Degradation and loss of floodplain forest
- Expansion of invasive species

OBJECTIVES (SECTION 2.3.3)

1 

Maintain a balance of coverage and relative abundance of native emergent, rooted floating leaved, and submersed **aquatic vegetation** communities

2 

Protect, enhance, and restore **backwater habitats** to restore, maintain, or create depth diversity and flow conditions suitable for native backwater biota (native fish and mussel populations)

3 

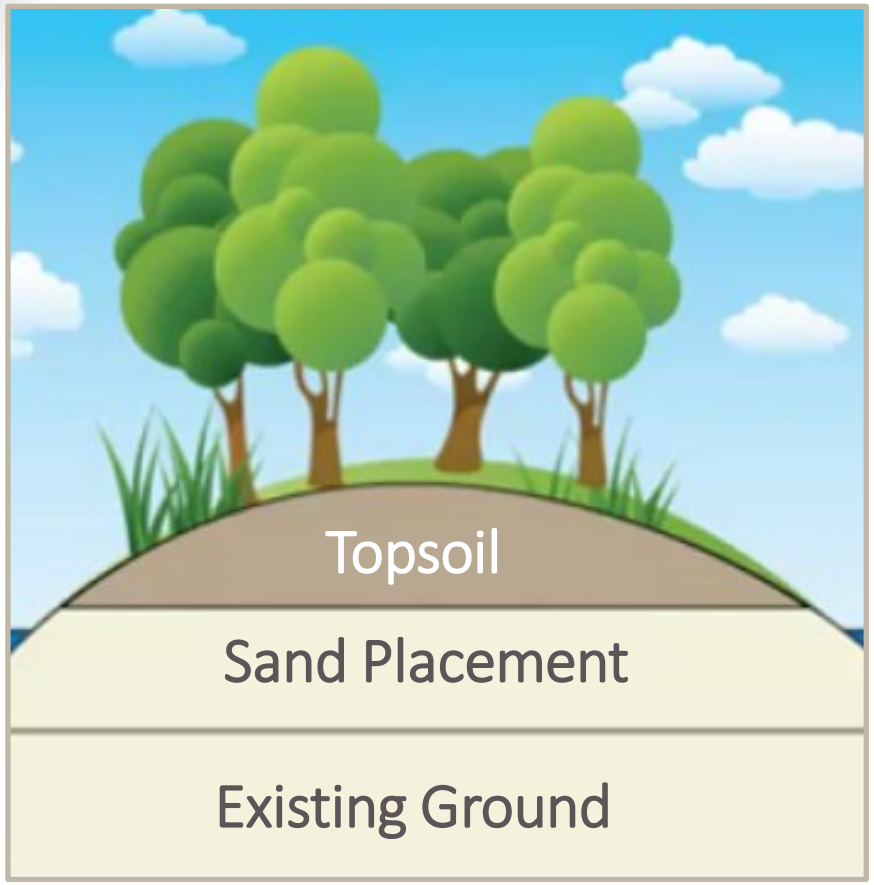
Protect, restore, or create naturally regenerating, resilient, and diverse **bottomland forest habitat** that will benefit migratory and resident birds and other species

4 

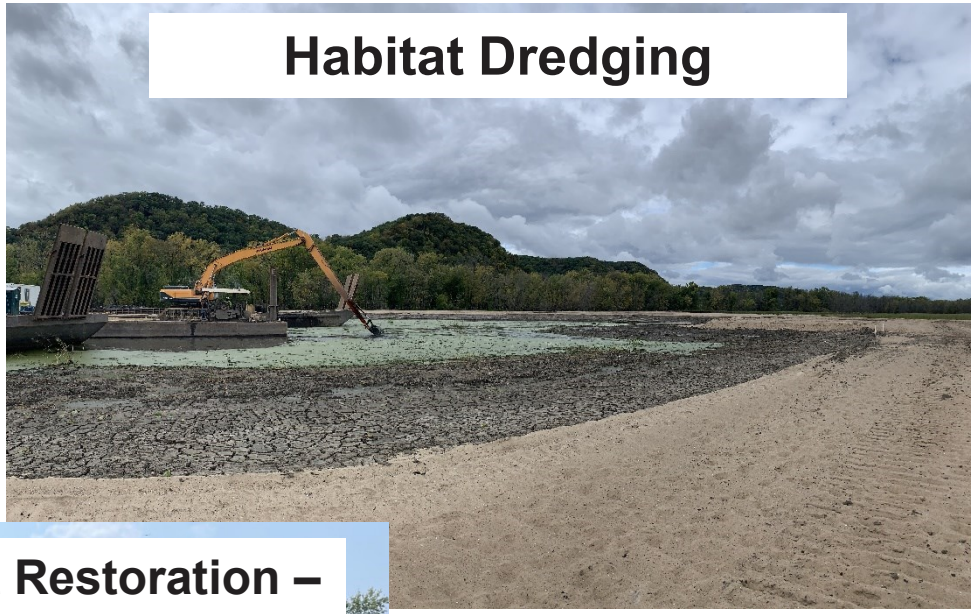
Protect, restore, or enhance **existing islands**

MANAGEMENT MEASURES (SECTION 4.1)

ISLAND RESTORATION/CREATION



Habitat Dredging



Floodplain Forest Restoration – Tree Planting

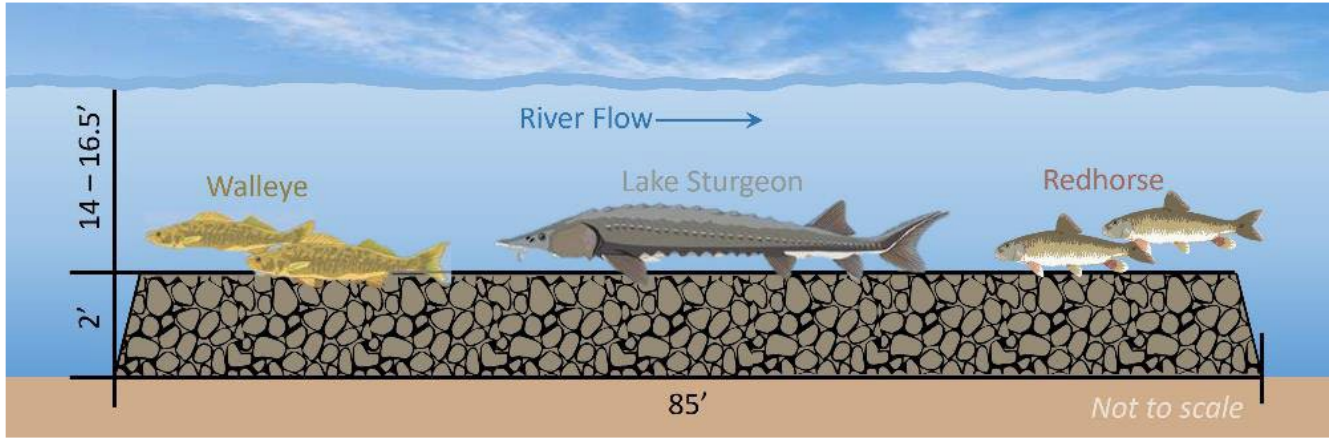
MANAGEMENT MEASURES (SECTION 4.1)

Thin Layer Placement

- Material placed on the existing land
- About 6 – 24" of dredged material
- Raises land to reduce flood impacts

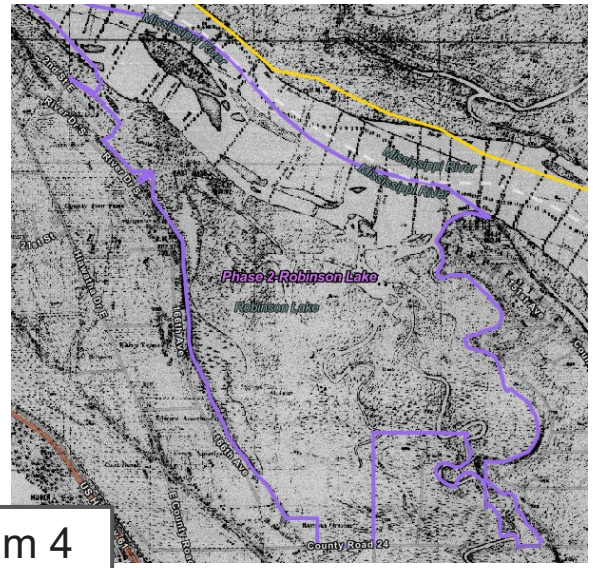
Spawning Reef

- Lake Sturgeon, Walleye, Redhorse, etc (deepwater broadcast spawning fish) & mussels
- 2 rock features with angular rock
- 2 rock features with cobble (rounded rock)
- Depth (12-15’) and velocity based on previous spawning reef projects



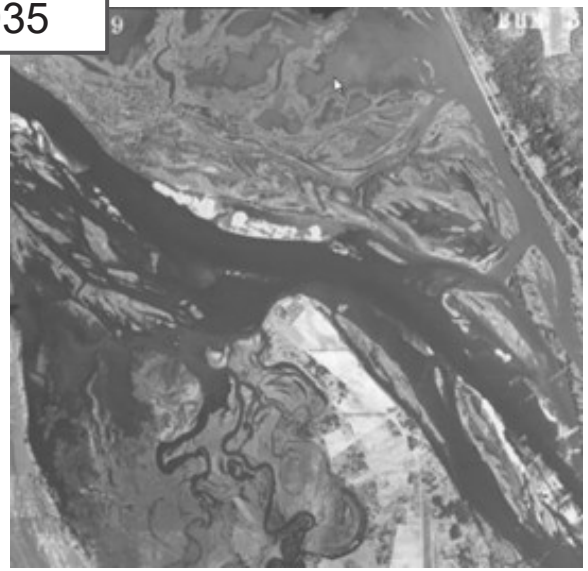
INITIAL DEVELOPMENT

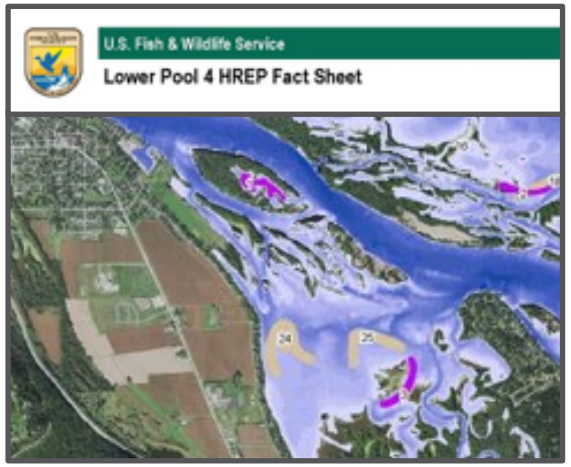
Robinson Lake area 1890 map



Lock & Dam 4 built in 1935

Robinson Lake area 1939





2020 Fact Sheet

Historic & current maps

Long Term Resource Monitoring (LTRM) data

Data collection bathymetry, soil borings

Public comments

Lessons learned

Site visits

INTERAGENCY TEAM ALTERNATIVES DEVELOPMENT

- Reviewed historic landforms & channels
- Use model to determine maximum plan based on flood stage impacts
- Started with the base plan (Alt 2) that would be acceptable to interagency team
- Built larger alternatives considering constructability & key measures
- Resulted in 10 alternatives including No Action

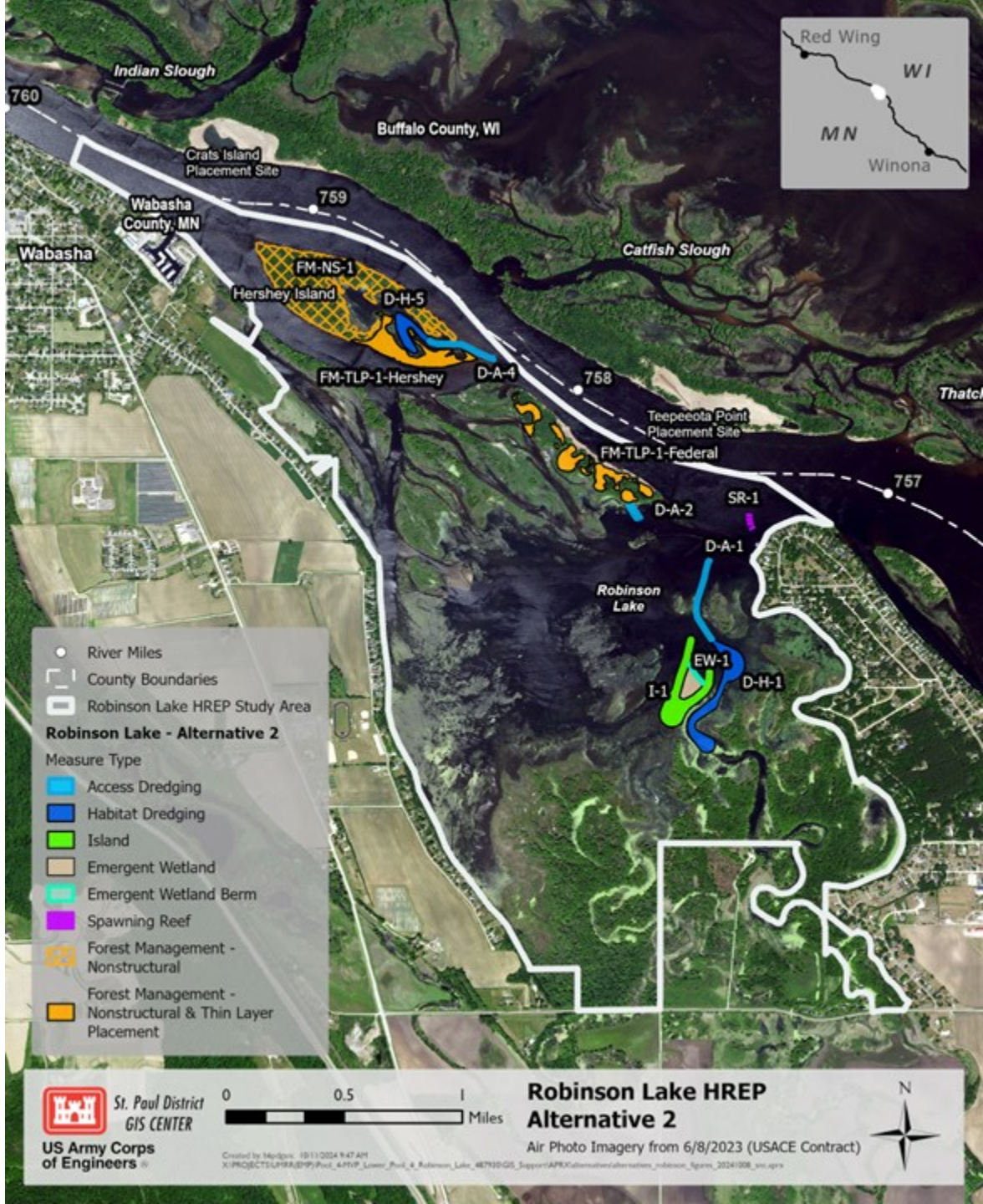
January 2023

Summer 2023

ALTERNATIVE 2 SMALLEST

- 1 Islands ~ 10 acres
- Dredging – access & habitat ~ 10 acres
- Emergent Wetland ~ 2.6 acres
- Spawning Reef
- Forest Management – planting/seeding
- Forest Management – Thin Layer Placement
    - Federal & Hershey Islands

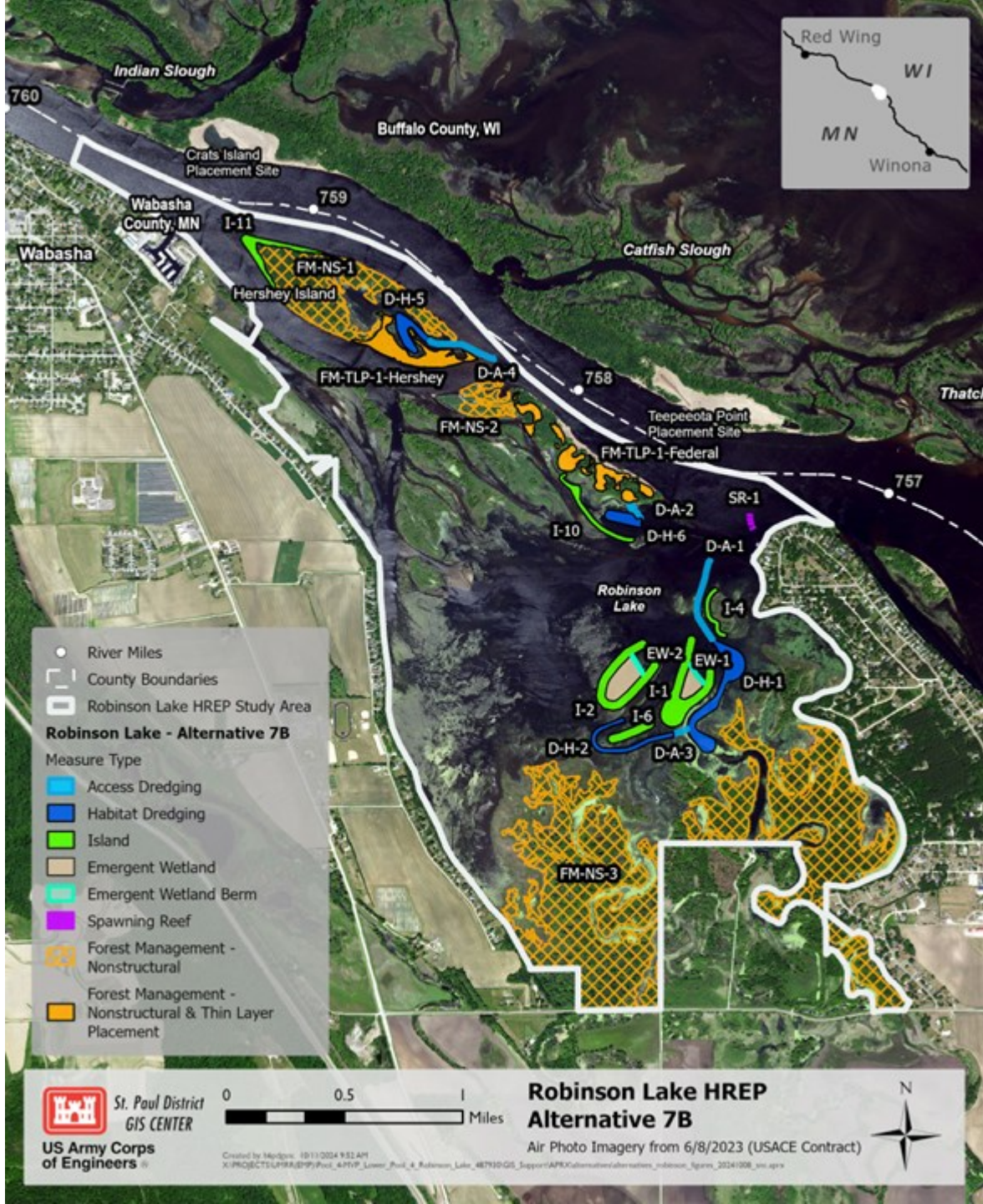
Figure 4. Alternative 2 (page 35)



ALTERNATIVE 7B LARGEST

- 5 Islands ~ 28 acres
- Dredging – access & habitat ~ 20 acres
- Emergent Wetland ~ 8 acres
- Spawning Reef
- Forest Management – planting/seeding
- Forest Management – Thin Layer Placement
    - Federal & Hershey Islands

Figure 12. Alternative 7B (page 43)



TENTATIVELY SELECTED PLAN

Section 6 in the Report

Alternative 6B Project Benefits

- ✓ 4 islands (20 acres)
- ✓ 261 acres of forest restoration
- ✓ 21 acres of Thin Layer Placement
- ✓ 16 acres of aquatic habitat related to dredging
- ✓ 2.6 acres of emergent wetland
- ✓ Spawning reef

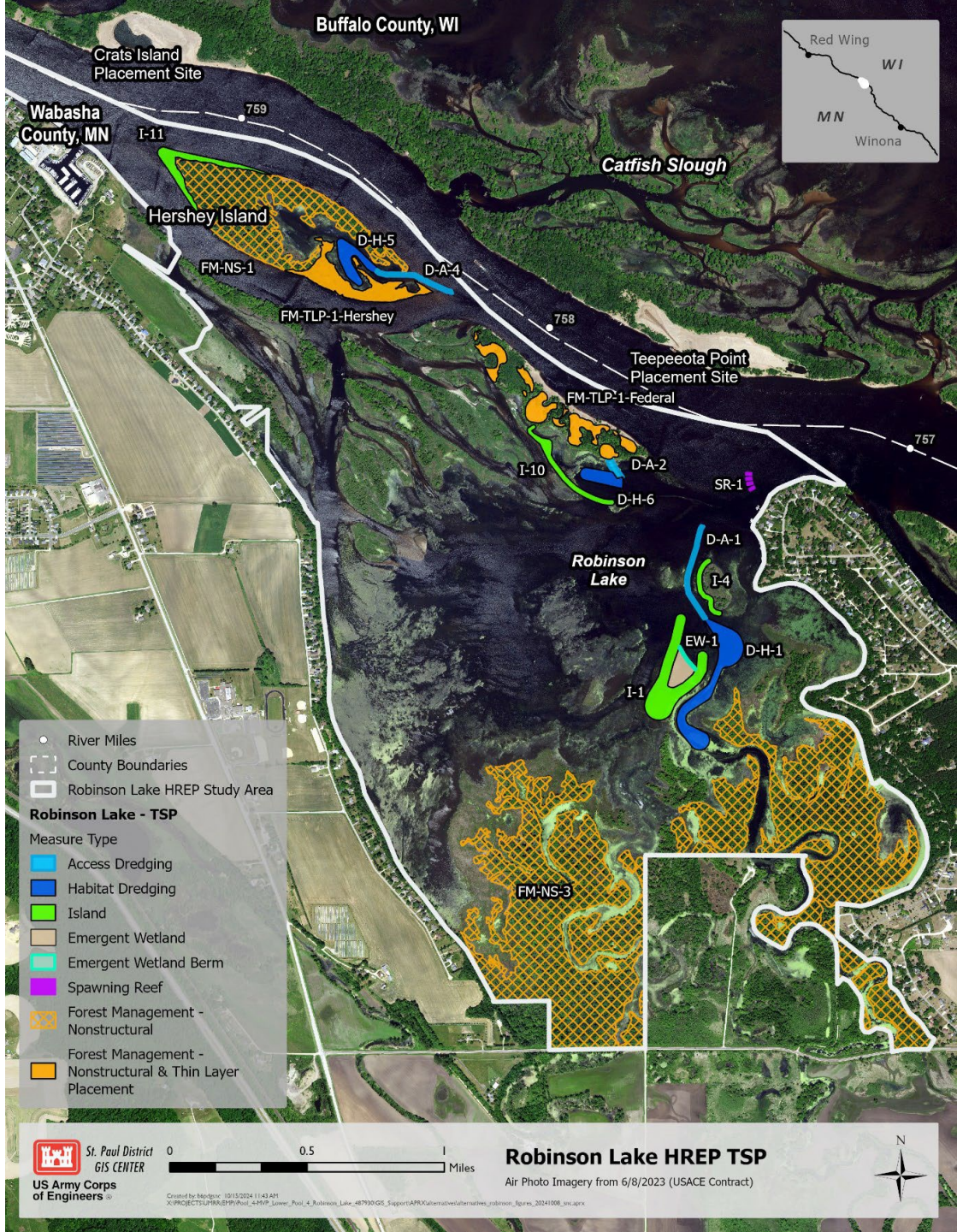
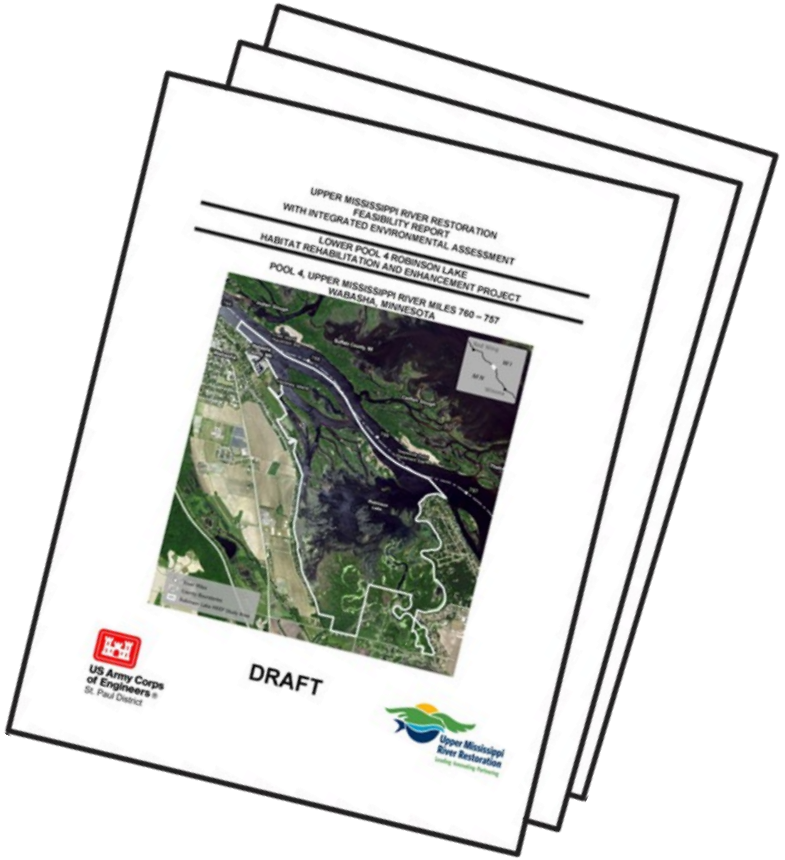


Figure 14. Tentatively Selected Plan – Alternative 6B (page 62)

ROBINSON LAKE DRAFT REPORT

- Draft Feasibility Report (FR) & Environmental Assessment (EA)
  - USACE Planning process – FR
  - National Environmental Policy Act (NEPA) document - EA
- Public Comment Period: **20 February – 21 March** 2025
- The main report summarizes the following:
  - ❑ Authority & Study Area (Section 1)
  - ❑ Project goals and objectives (Section 2)
  - ❑ Existing Conditions (Section 3)
  - ❑ Development of alternatives (Section 4)
  - ❑ Comparison of the alternatives (Section 5)
  - ❑ Tentatively Selected Plan for implementation (Section 6)
  - ❑ Analyses of the plan/environmental consequences (Section 7)
  - ❑ Public involvement and coordination (Section 8)
  - ❑ Recommendation (Section 9)



REPORT APPENDICES

There are 3 files on the website for appendices: A; B-D; and E-K based on file size limits

Appendix A – Correspondence and Coordination
Appendix B – Clean Water Act Compliance
Appendix C – Habitat Analysis
Appendix D – Geotechnical & Sediment Quality Analysis
Appendix E – Hydrology and Hydraulics
Appendix F – Cost Engineering
Appendix G – Real Estate Plan
Appendix H – Civil Engineering
Appendix I – RECONS Analysis
Appendix J – Monitoring and Adaptive Management
Appendix K – Draft Memorandum of Agreement with the US Fish and Wildlife Service

NATIONAL ENVIRONMENTAL POLICY ACT

- NEPA requires agencies to assess the environmental effects of a proposed action and develop a document before making a decision
- The purposes of NEPA documents, such as this EA, are:
  - for agencies to make better informed decisions
  - to inform the public and provide for review and comment

Public Comments

- Comments should be clear, concise, and relevant - Comments are not for voting
- The most effective comments are solution-oriented and provide specific examples

NEXT STEPS

Provide comments on the Draft EA via comment cards, email, or mail

Email list for updates:
umrr-mvp-hrep@usace.army.mil

Website:
https://www.mvr.usace.army.mil/Missions/Environmental-Stewardship/Upper-Mississippi-River-Restoration/Habitat-Restoration/St-Paul-District/Lower-Pool-4-Robinson-Lake/

Written comments no later than ***March 21, 2025,*** *submitted to:*

U.S. Army Corps of Engineers
Attention: RPEDN, Amanda Goldstein
332 Minnesota Street
Suite E1500
St. Paul MN 55101
Email: umrr-mvp-hrep@usace.army.mil

Sign-in Sheet & Comment Cards
Before including your address, phone number, email address, or other personal information in your comment, you should be aware that your entire comment may be made publicly available