

Pierce County Islands and the Head of Lake Pepin

CAP Section 204 - Beneficial Use of Dredged Material

Public Meeting and Open House

St. James Hotel

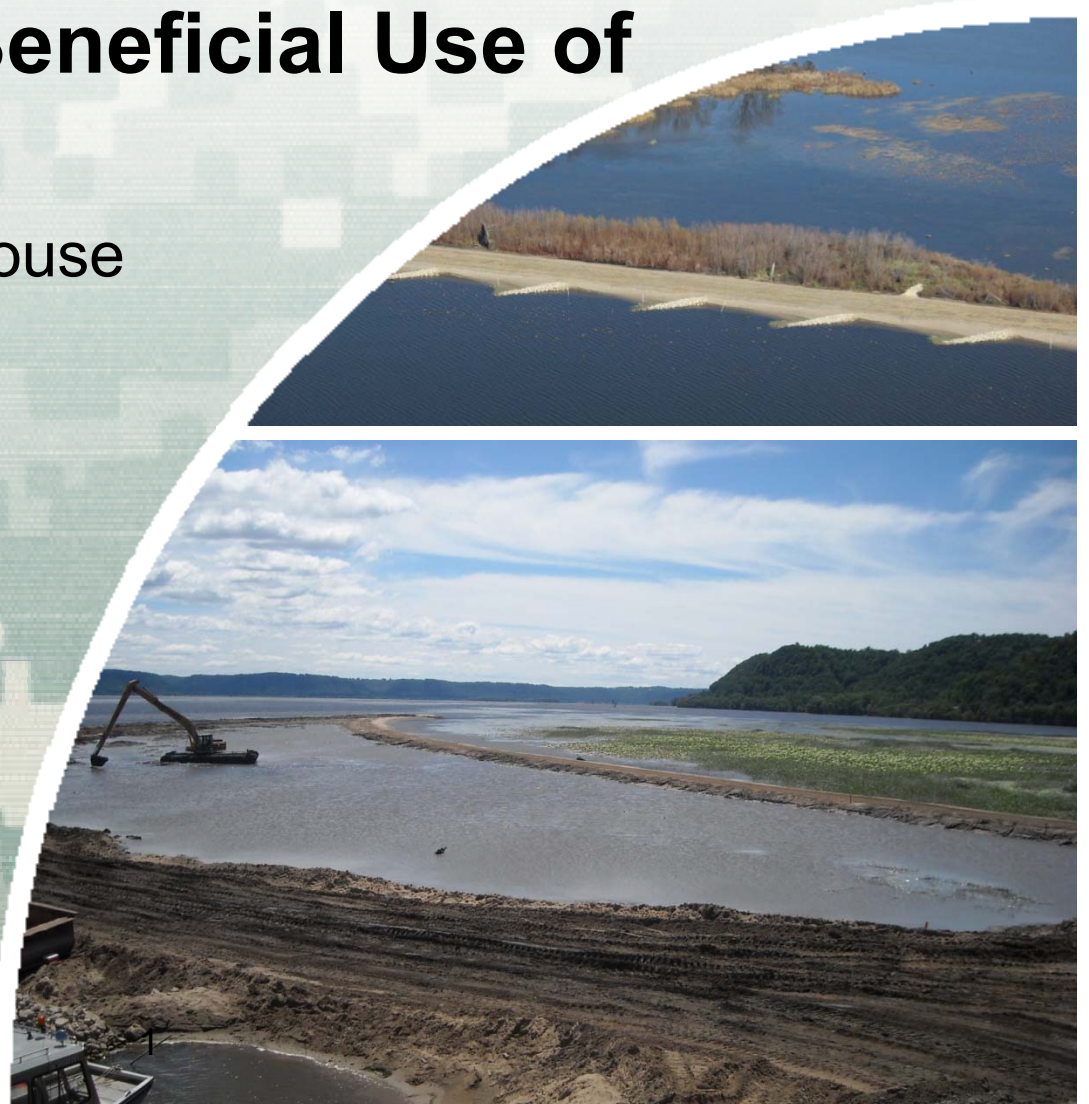
April 4, 2018



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US Army Corps of Engineers

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What this is and what it isn't

- Upper Pool 4 – Section 204
- Beneficial Use of Dredge material - sand
- Lower Pool 4 DMMP
- 40 year plan to place sand



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Meeting Purpose

- Present Section 204 Upper Pool 4 Study Alternatives
- Solicit public input
- Address questions & concerns



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Participating Entities

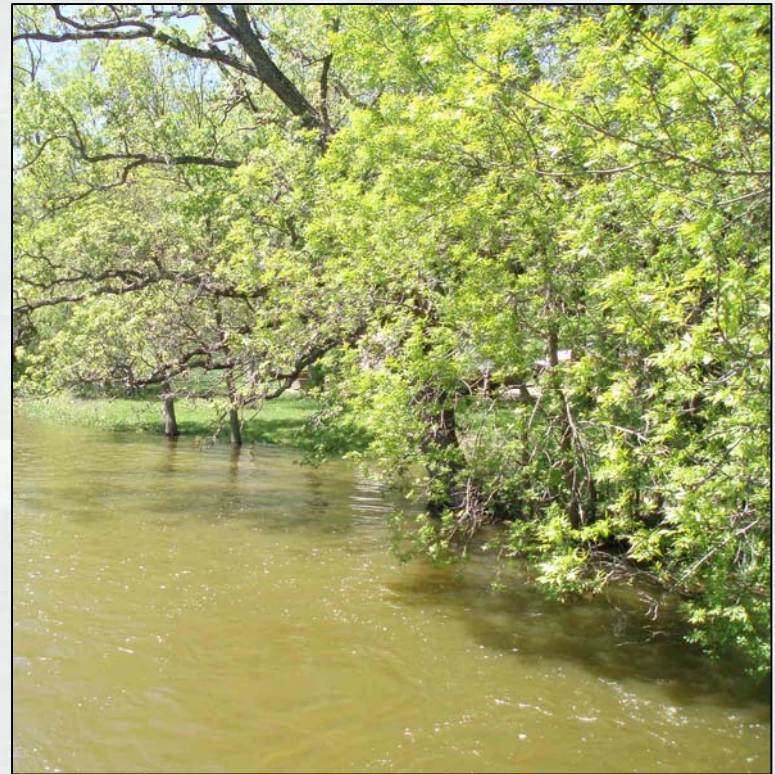
- Wisconsin
- Minnesota
- Lake Pepin Legacy Alliance
- Audubon
- Ducks Unlimited
- US Fish and Wildlife Service
- Public
- Industry
- NGO's
- City of Red Wing
- Stakeholders



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Study Authority

- Authorized under Section 204 of the Water Resources Development Act of 1992
- Restore, protect, and create aquatic and wetland habitats in connection with maintenance dredge of an authorized project



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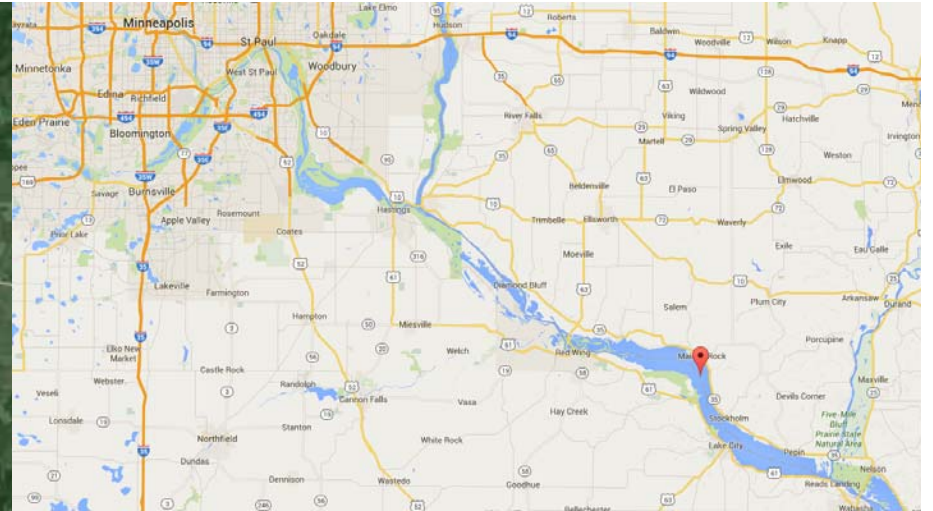
Section 204

Beneficial use of Dredged Material

- Benefits must exceed the project costs incurred
- Project must be environmentally acceptable and complete
- \$10M max Federal contribution per project.
- Cost share for feasibility is 100% Federal then 65% Fed/ 35% Sponsor for Design and Construction.



Location: River Mile 780 and 792
in the backwater complexes
adjacent to the main channel.



PROJECT LOCATION

Google



Project Area History

- The lake covers 26,000 acres.
- An average of 1.7 miles wide, it is the widest natural reach of the entire Mississippi River.
- Upper Lake Pepin consists of channel border islands and backwater lakes grading into an expansive, shallow open water area with little physical structure.
- Valuable cultural, aesthetic, recreational and economic asset to local communities.
- Designated as a globally significant bird area.



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Upper Pool 4 Goals

- Improve habitat for native/ desirable plant, animal & fish species
- Beneficial use of dredged material



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Problems

- Continued sedimentation and sediment re-suspension.
- The lack of emergent and submerged aquatic vegetation.
- Lack of protected wetlands and aquatic areas.
- Limited habitat for migrating waterfowl and other species.
- Limited aquatic plant coverage and bathymetric diversity.



Objectives

- Increase aquatic vegetation
- Improve bird habitat
- Improve shoreline habitat
- Increase and improve floodplain forest
- Improve fish habitat



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Constraints

- Institutional
 - ▶ Navigation, flood stages
- Engineering
 - ▶ Feasibility, construction materials
- Environmental
 - ▶ NEPA, avoid contaminated material

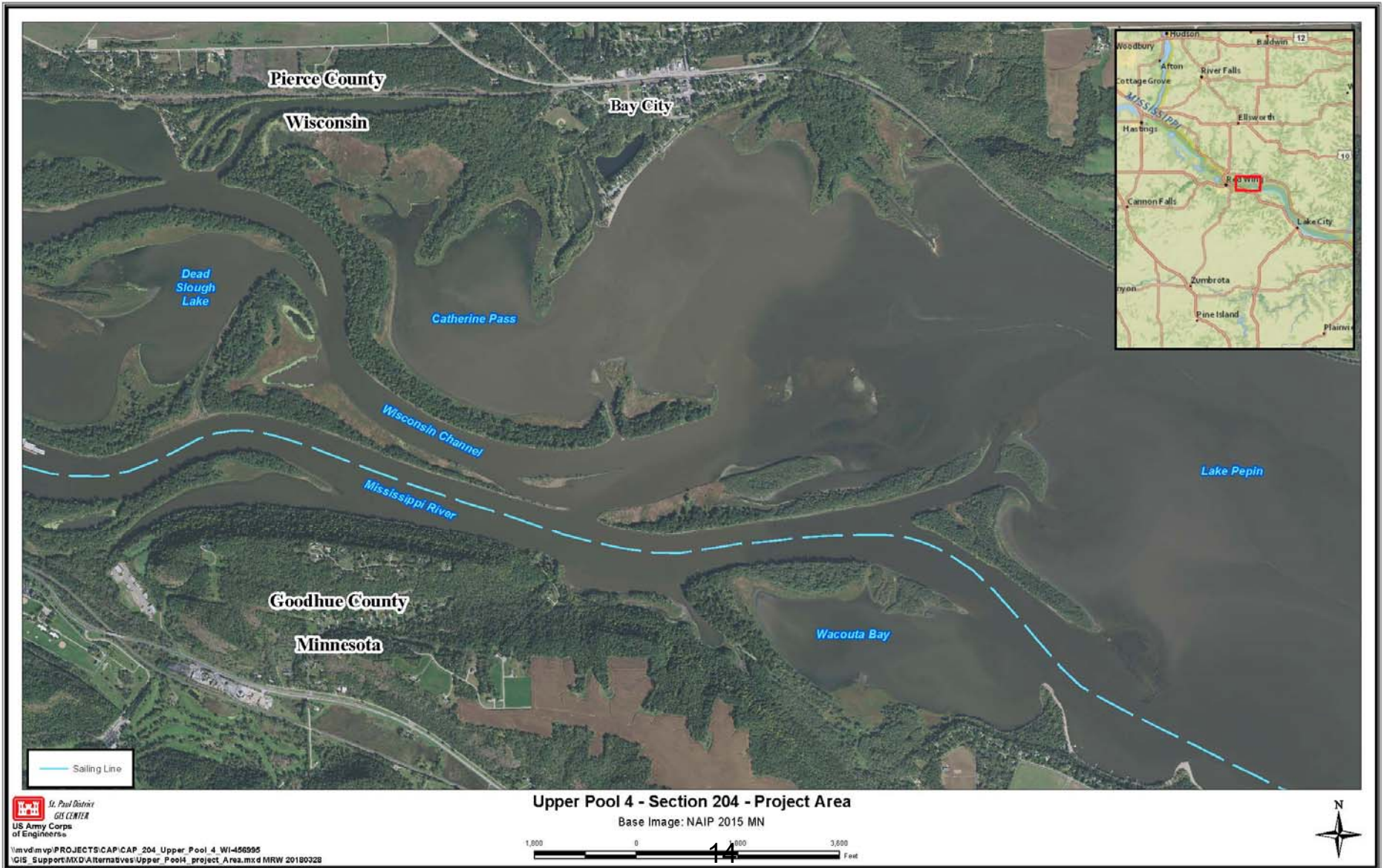


Restoration Measures

- Island restoration/creation
- Bank protection
- Floodplain forest
- Dredging
- Emergent wetlands



Project Area

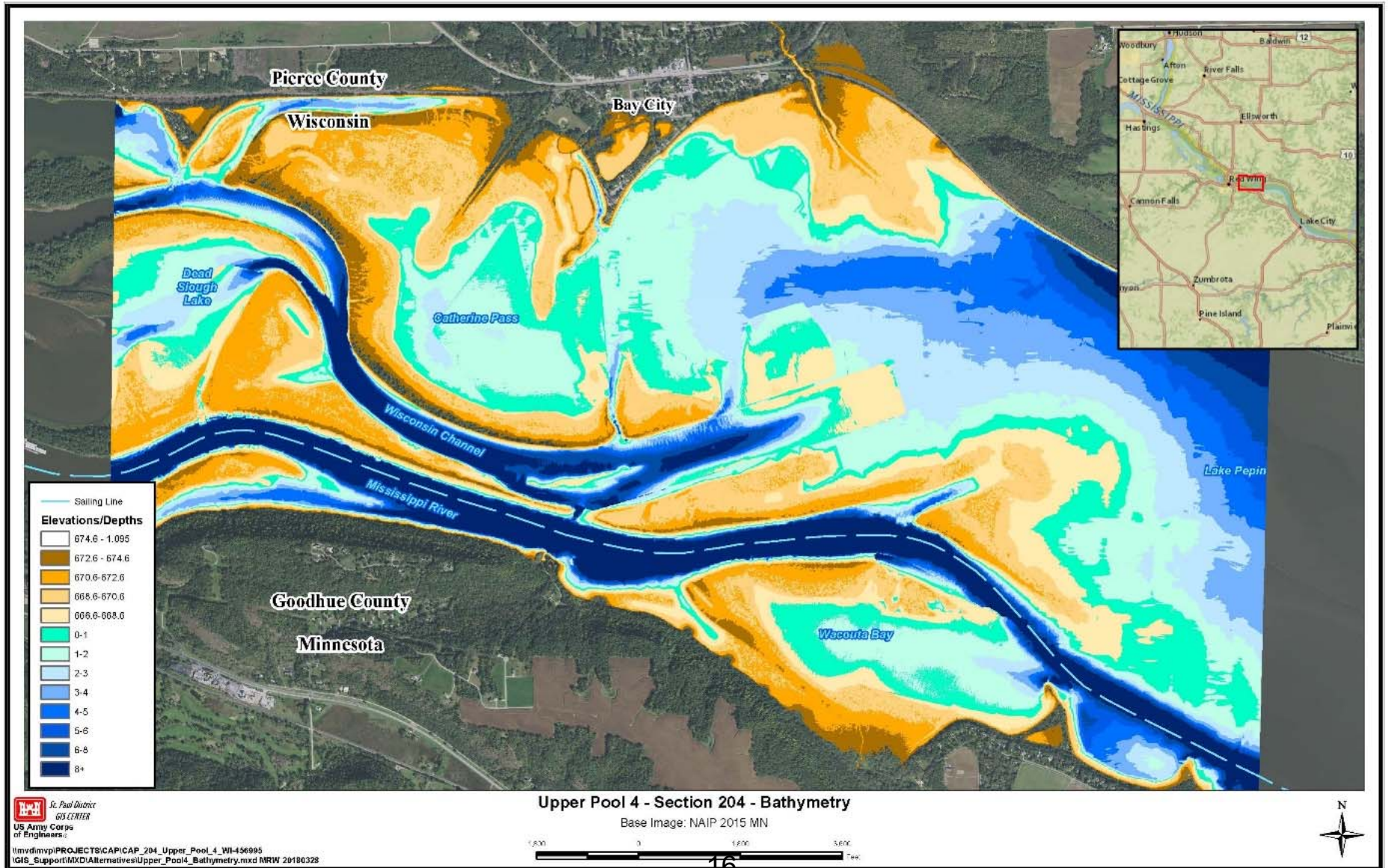


1938 Image of Project Area

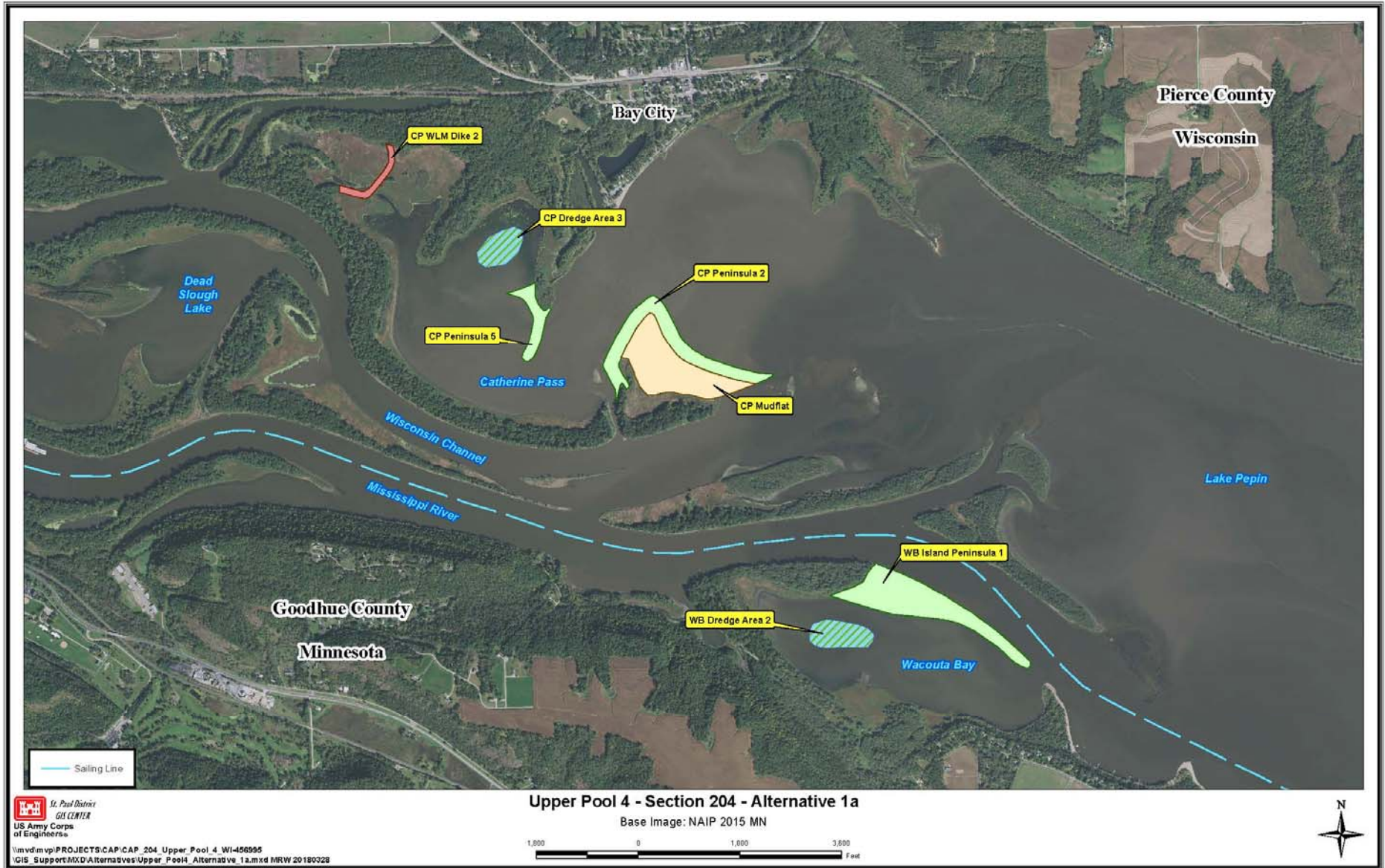


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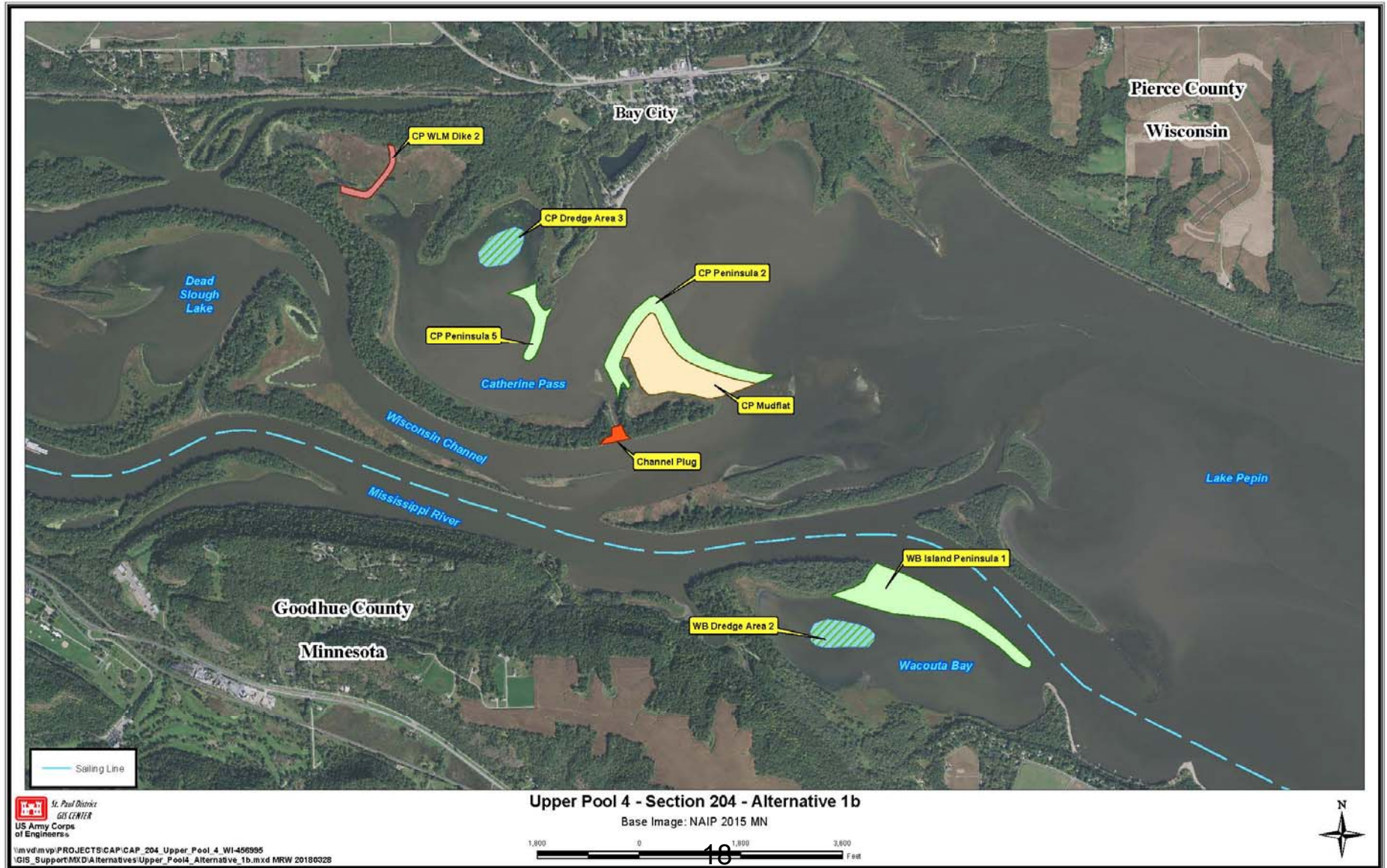
Bathymetry



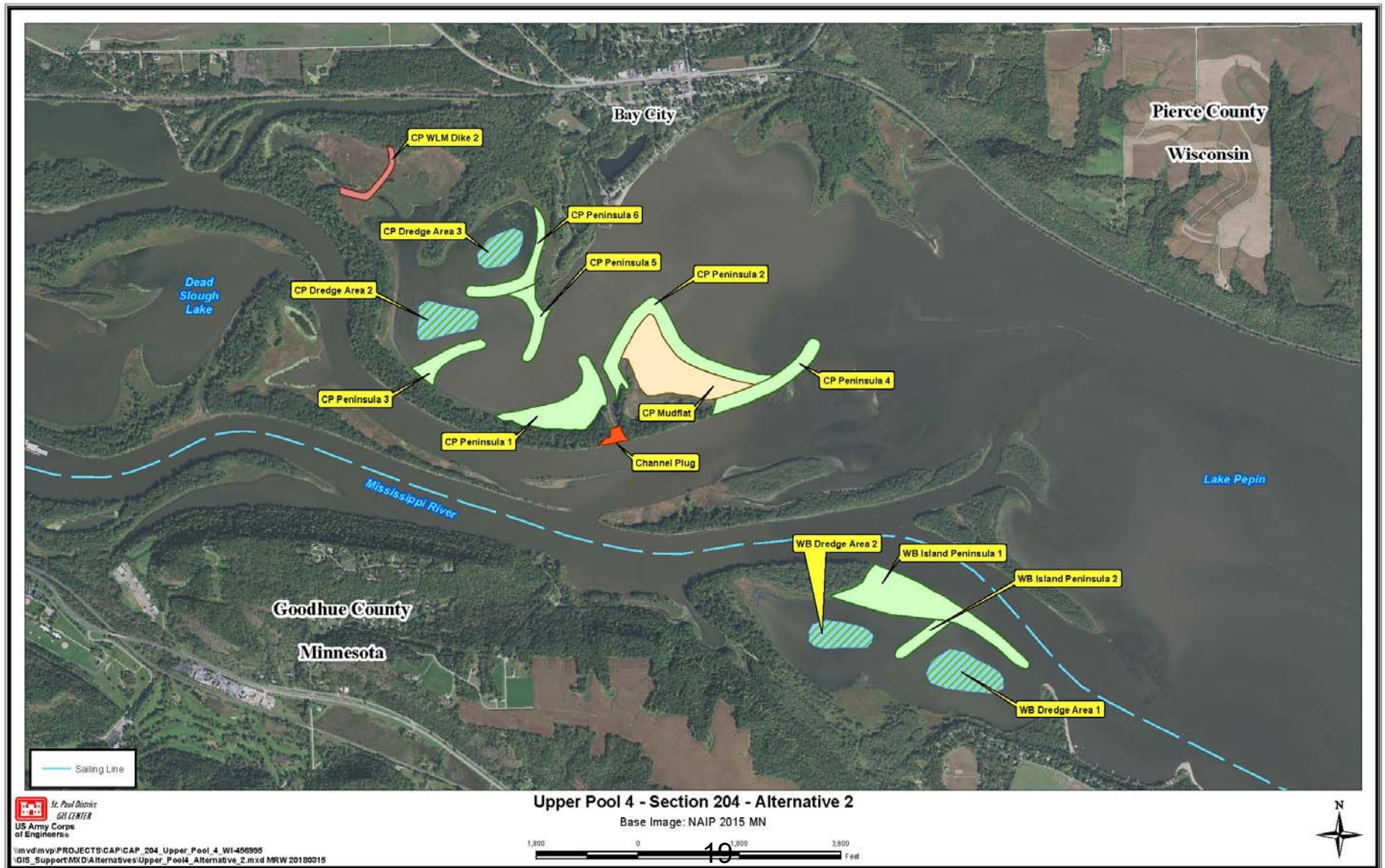
Alternative 1a



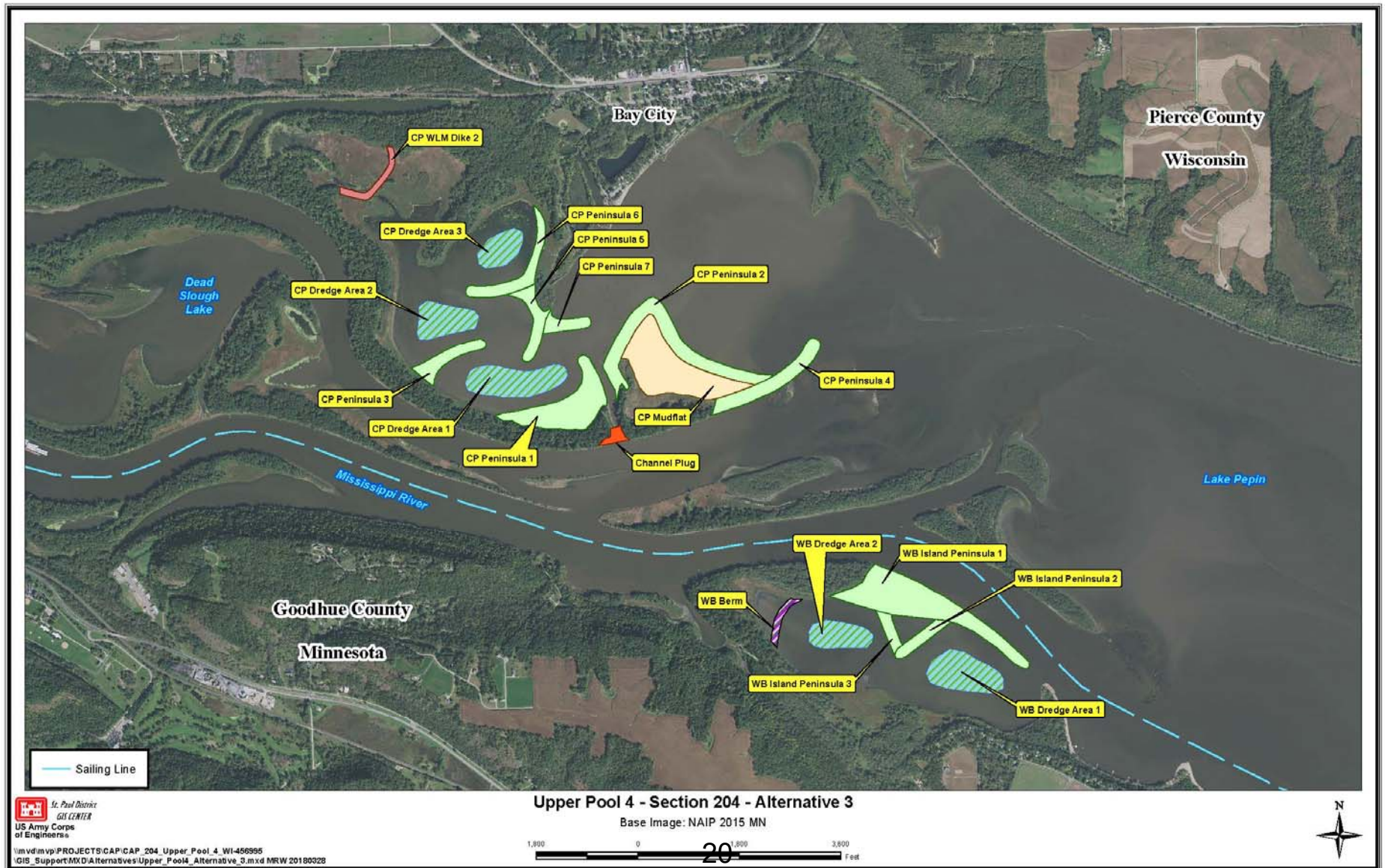
Alternative 1b



Alternative 2

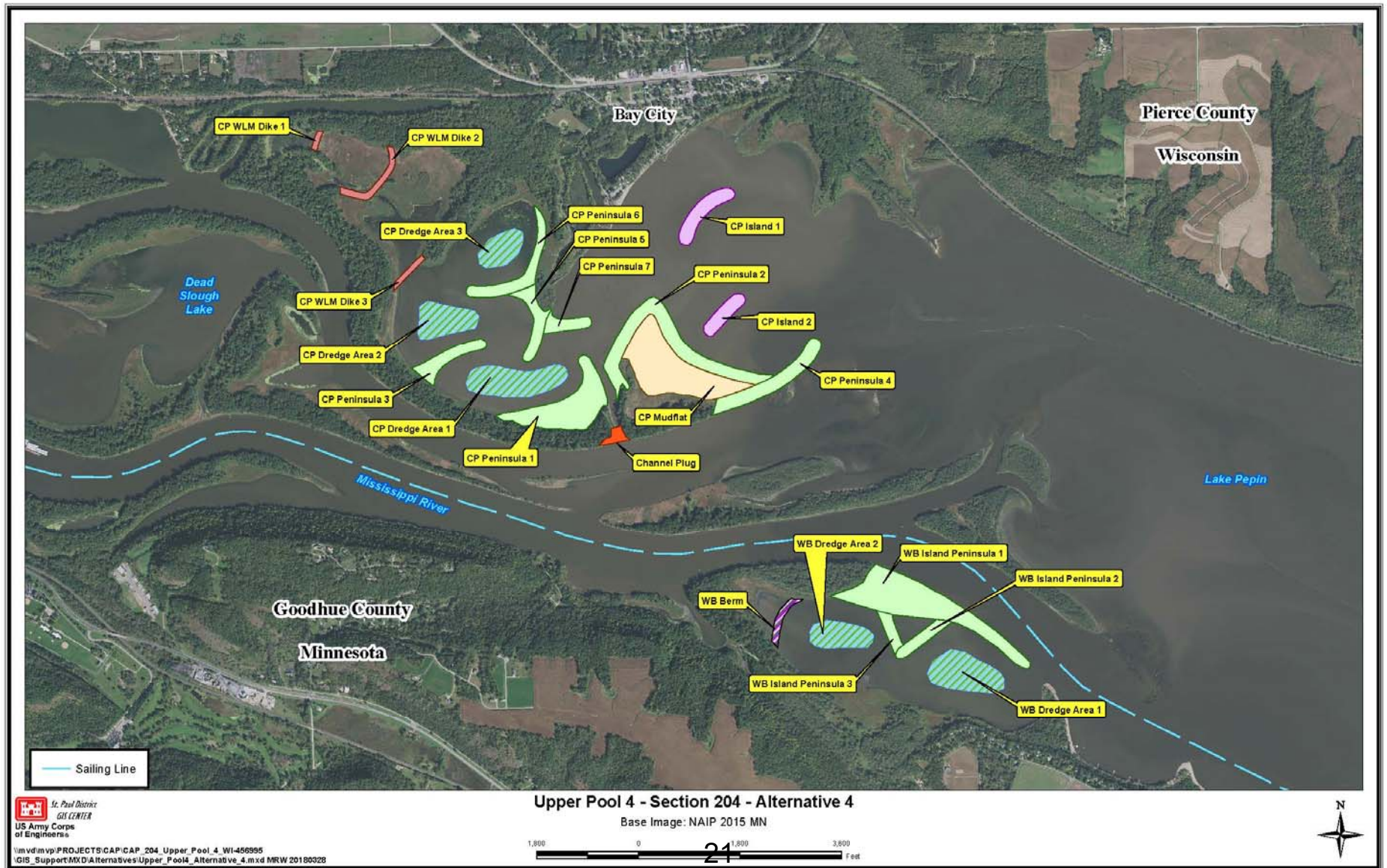


Alternative 3

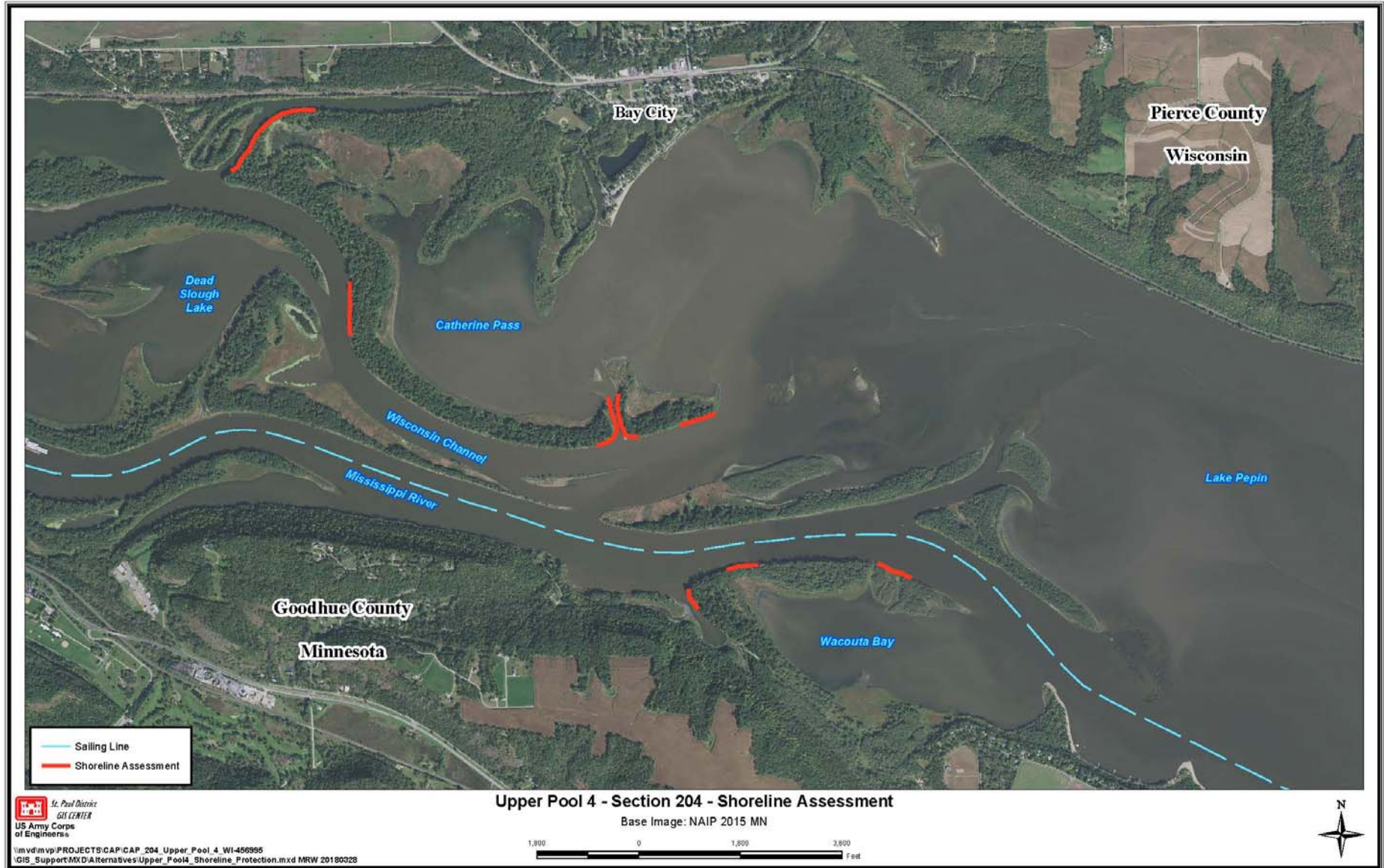


St. Paul District
GIS CENTER
US Army Corps
of Engineers
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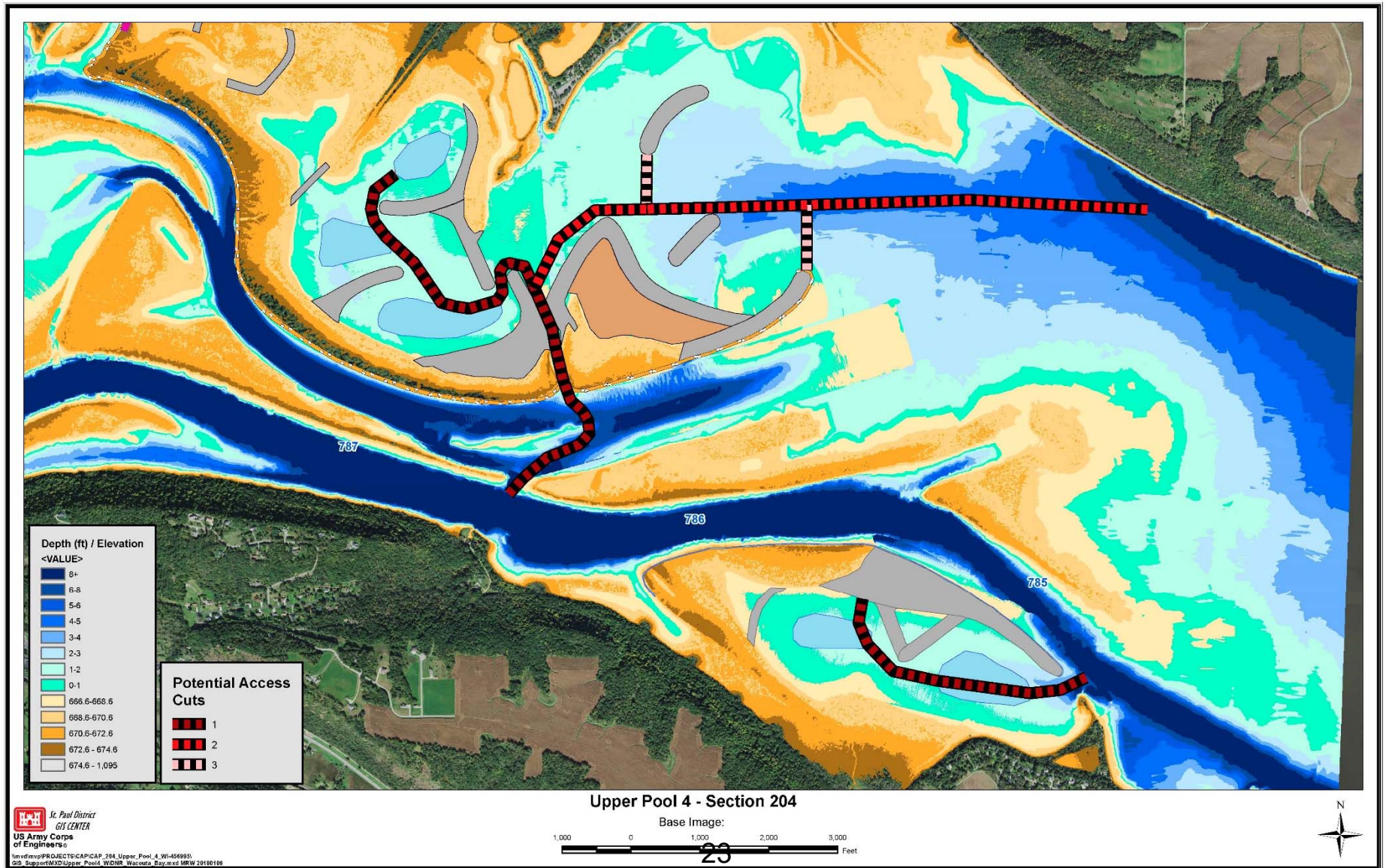
Alternative 4



Shoreline Assessment

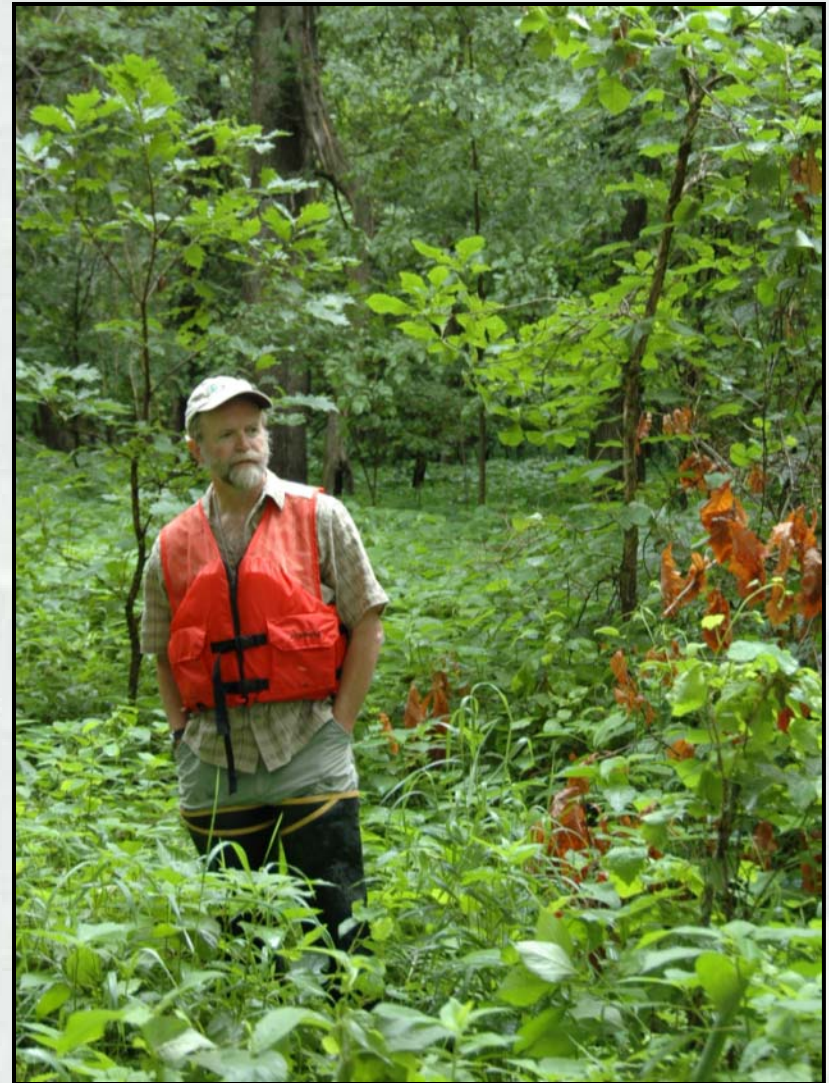


Potential Access Dredging



What's Next During the Study?

- 1) Screening/Refining Alternatives
- 2) Habitat Benefits Analysis
- 3) Cost Effectiveness/
Incremental Cost Analysis
- 4) Tentatively Select a Plan
- 5) Develop Draft Report
- 6) Public Review (Fall 2018)





Pierce County Islands WA

Ryan Haffele

Wildlife Biologist

WDNR





Pierce County Islands WA

- Master Plan Update
 - Determines how the property is managed into the future for wildlife, fisheries, and recreation
 - Key Points
 - Improve wetland habitat
 - Improve floodplain forest habitat
 - Identifies restoration needs to compliment 204 Project
 - Maintain and enhance opportunities for hunting, fishing, trapping, and other nature-based outdoor recreation



Pierce County Islands WA

- Public Input Opportunity
 - Provide comments regarding the master plan by Friday April 6th to Laurie Ross
Laurie.Ross@Wisconsin.gov
 - Item 2-B-3 on April NRB Agenda



Pierce County Islands

Kurt A. Rasmussen

Mississippi River Planner

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Environmental Management Division

Wisconsin Department of Natural Resources

3550 Mormon Coulee Road

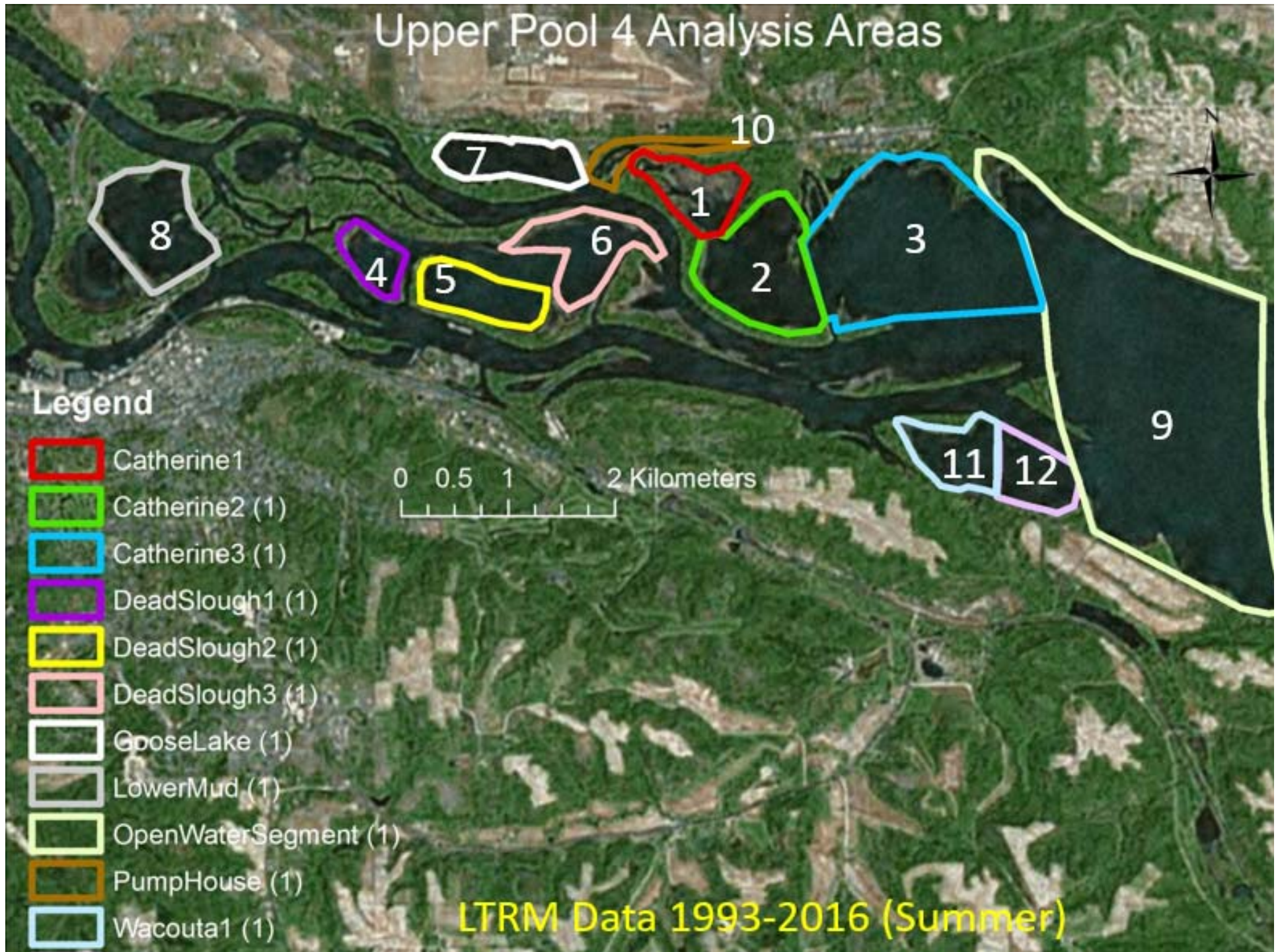
La Crosse, WI 54601

Phone: (608) 785-9003

Fax: (608) 785-9990

Kurt.Rasmussen@Wisconsin.gov

Upper Pool 4 Analysis Areas



Upper Pepin Lake Water Quality Assessment

- Water Depth
- Secchi Depth (water transparency)
- Water Velocity
- Total Nitrogen
- Total Phosphorus
- Dissolved Oxygen
- Water Temperature
- Chlorophyll a
- Total Suspended Solids



Catherine Cut Water Quality Aerial



0 0.125 0.25 0.5 Miles



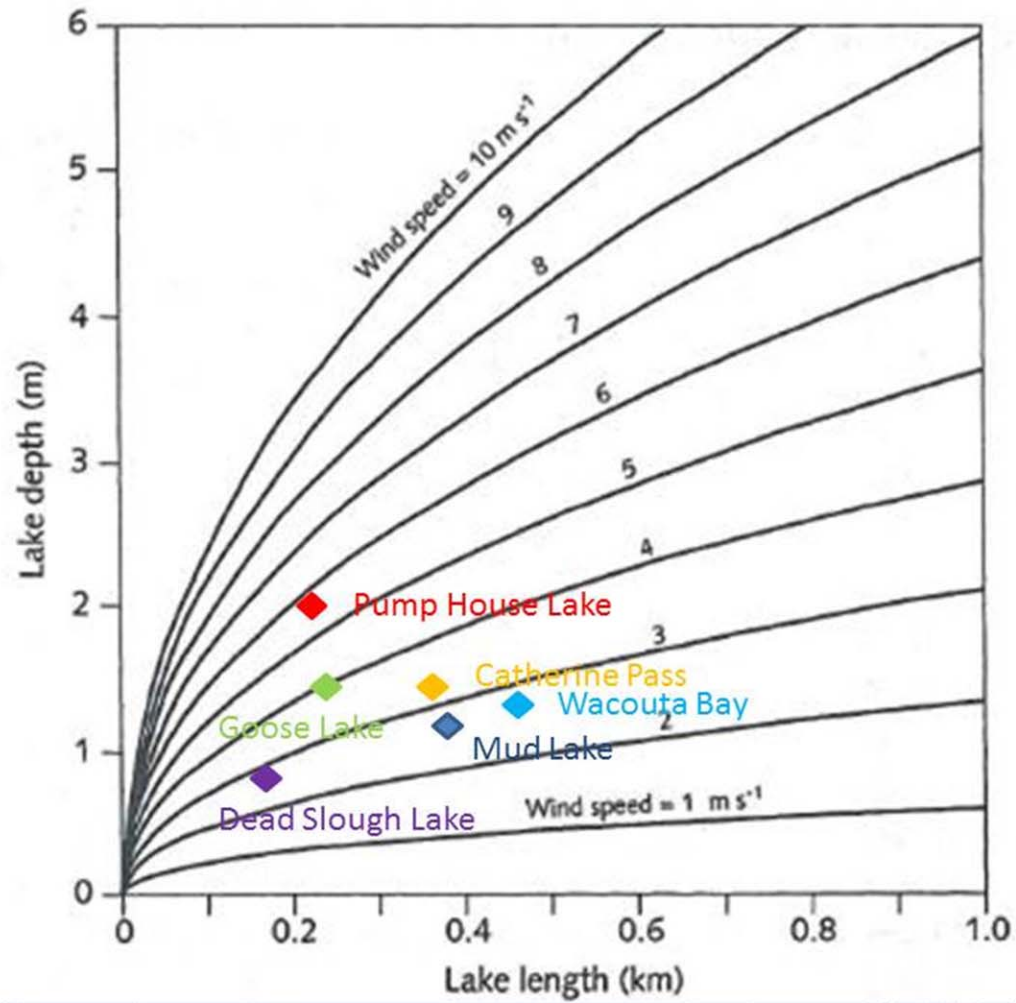
Upper Pepin Lake Water Quality Assessment

Water quality factors Introducing the most variance to the system:

- Water Depth (possibly explained wind resuspension of fine sediment)
- Water Velocity (possibly explained by turbid inflows and higher connectivity to the main channel)

Wind speed where half of the bottom of the lake is subject to wave resuspension

1 m/sec = 2.24 mph



Lake	Site	Wind speed to resuspend half of lake (mph)
Mud Lake	Upper4-1	6.272
Goose Lake	Upper4-5	8.96
Pump House Lake	Upper4-6	12.992
Catherine Pass	Upper4-7	7.168
Dead Slough Lake	Upper4-10	6.384
Wacouta Bay	Upper4-11	6.384

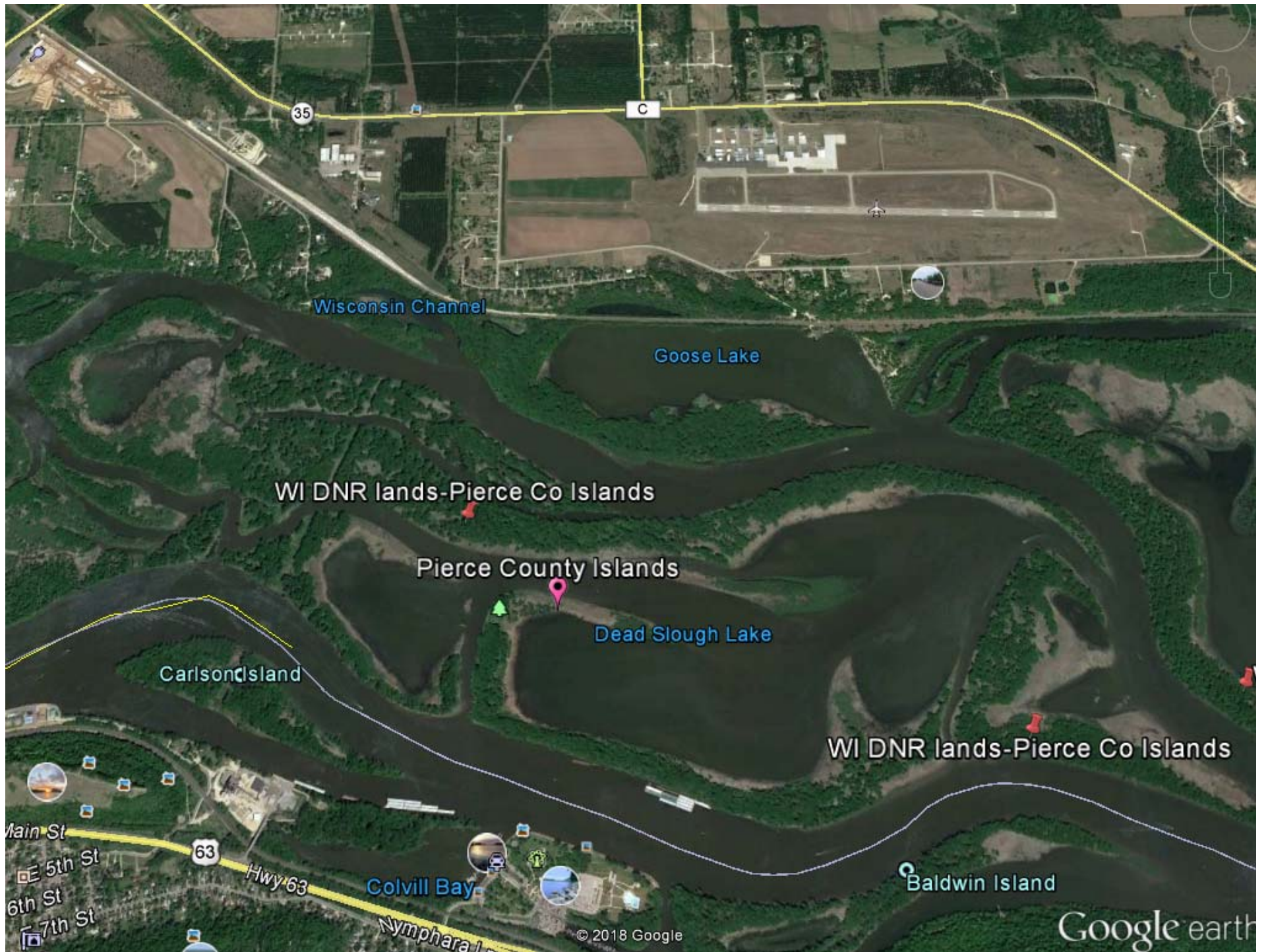
Catherine Cut Water Quality Aerial



0 0.125 0.25 0.5 Miles







Wisconsin Channel

Goose Lake

WI DNR lands-Pierce Co Islands

Pierce County Islands

Dead Slough Lake

Carlson Island

WI DNR lands-Pierce Co Islands

Main St

E 5th St

6th St

7th St

63

Hwy 63

Colvill Bay

Nymphara L

Baldwin Island

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Google earth

Questions?



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