

## **Beneficial Use of Dredged Material Pilot Program Proposal Information Requirements:**

### **1. Name and location of the proposed project.**

Mississippi River Upper Pool 4, Pierce County Islands and Head of Lake Pepin Backwater Complex - Beneficial Use of Dredged Material. The project is located in Upper Pool 4 of the Mississippi River between River Miles 784.0 and 789.0

### **2. Purpose of the proposed project (see paragraph 5 of the Implementation Guidance).**

The purpose of the proposed project is to protect, restore and create aquatic ecosystem habitat. The objectives of the project are to:

- a) Improve and protect aquatic habitat – Create depth and habitat diversity in backwaters. Increase acreage of aquatic vegetation through wind and wave reduction. Incorporate structural habitat features such as islands to protect and improve fisheries.
- b) Improve the quantity and quality of habitat for migratory bird species – Create suitable habitat for birds such as dabbling ducks and neotropical migrants through the enhancement and creation of a wide variety of plant communities.
- c) Increase the quantity and quality of floodplain forest habitat – Protect and enhance existing floodplain forest habitat and create new floodplain forest habitat in conjunction with island creation.

### **3. Description of the proposed project, including more detail on how material will be used beneficially to meet project purposes identified in 2 above.**

The river ecosystem in Upper Pool 4 has been significantly affected by sedimentation and degraded water quality associated with high suspended sediment concentrations, originating mainly from fine sediment inputs via the Minnesota River. Though relatively minor in comparison, shoreline erosion due to recreational boat traffic also affects habitat conditions. Sedimentation and sediment resuspension have caused a loss in water depth diversity of the backwater lakes and isolated wetlands above Lake Pepin as well as a loss in aquatic vegetation. The effects of wind wave action, large recreational boat wakes, and non-native fish activity are exacerbating sediment resuspension, continuing to limit light penetration and growth of aquatic vegetation.

Without action the existing aquatic habitat will continue to decline. Several project features would utilize material dredged by the Corps from the 9 foot Mississippi River navigation channel. Island restoration/creation could serve a variety of habitat purposes. Islands protect shallow areas from wind and wave action, which in turn protects existing aquatic vegetation beds and improves conditions for the growth of aquatic vegetation in other shallow areas. Islands provide terrestrial habitat such as floodplain forest, and their restoration increases habitat availability to wildlife. Islands can also be designed in a manner to direct flows to enhance or restore secondary channel habitat, maintain bathymetric diversity, and manage sediment deposition.

The sand needed to construct the islands would be sourced from material dredged for maintenance of the 9 foot navigation channel project on the Upper Mississippi River. Most

likely, sand would be obtained by mechanically offloading temporary placement sites in Lower Pool 4 (Read's Landing). Material would be transported by barge from the placement site to the project location, a distance of about 23 miles. Topsoil for the islands could come from the navigation channel at the head of Lake Pepin near the project area, or from backwaters adjacent to constructed features.

In a separate effort, the St. Paul District Corps of Engineers is developing a Dredge Material Management Plan for Pool 4; the purpose of the plan is to prepare a long-term plan for managing dredged material in Pool 4. Permanent dredged material placement sites in Pool 4 have reached their capacity and additional permanent sites are needed to accommodate the Corps' dredging needs in Pool 4 in the future. The proposed ecosystem restoration project would provide a permanent placement site for some of the dredged material in Pool 4.

**4. The name of all non-federal interests planning to act as the sponsor, including any non-federal interest that has contributed to or is expected to contribute toward the non-federal share of the proposed beneficial use project.**

Wisconsin Department of Natural Resources (project sponsor)  
Lake Pepin Legacy Alliance, Red Wing, MN  
Audubon Minnesota

Grant Proposals to the following are in progress to support the non-federal funding share:

- LCCMR - Legislative Citizen Commission on Minnesota Resources (through Minnesota's Environment and Natural Resources Trust Fund)
- Jones Family Foundation
- Arlin and Marilyn Albrecht
- 3M Gives

**5. List the authorized U.S Army Corps of Engineers (Corps) water resources development project(s) that the proposed beneficial use project is associated with.**

The Corps is responsible for maintaining a navigable channel on the Mississippi River and the proposed project is associated with the 9-Foot Channel Navigation Project. Authority for continued operation and maintenance of the Upper Mississippi River (UMR) 9-Foot Channel Navigation Project is provided in the River and Harbor Acts of 1930 and 1932. Original authority for the Corps to work on the Mississippi River was provided in the Rivers and Harbors Act of 1878. The granular material needed to construct habitat restoration features would be sourced from material dredged for maintenance of the 9-Foot Channel Navigation Project on the Upper Mississippi River.

The project is being developed under Section 204 of the WRDA of 1992, as amended. Section 204 provides authority for the Corps to restore, protect, and create aquatic, wetland habitats and floodplain forest in connection with construction or maintenance dredging of an authorized federal navigation project.

A Feasibility Study Report with Integrated Environmental Assessment will be completed to investigate the feasibility of alternative measures to address aquatic ecosystem problems and opportunities associated with the project. Plan formulation for Upper Pool 4 204 is being

conducted in accordance with the six-step planning process described in Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (1983) and the Planning Guidance Notebook (ER 1105-2-100, dated April 2000).

The plan that will be selected is the plan that meets planning objectives and constraints and reasonably maximizes environmental benefits while passing tests of cost effectiveness and incremental cost analyses, significance of outputs, completeness, effectiveness, efficiency, and acceptability.

Of note, under this authority, if a beneficial use is selected for a project and the costs exceed those of the "Base Plan", the costs borne by the Section 204 project are those incremental costs above the "Base Plan" cost (Appendix E of ER 1105-2-100). The Federal Standard, or "Base Plan" for the disposal of dredged material associated with maintenance dredging of navigation projects is the least costly, environmentally acceptable plan. The Base Plan costs for this project assume normal excavation and transportation costs based on the current practices.

**6. Provide an estimate, to the extent practicable, of the total beneficial use project cost, and the federal and non-federal share of those costs.**

As part of the Feasibility Study Report with Integrated Environmental Assessment a preliminary draft cost estimate has been developed for all possible features.

This project is in the feasibility stage, and a selected plan has not yet been identified. The team is evaluating and comparing various design alternatives requiring different volumes of dredged material and varying efforts of working, seeding, and protection. The alternatives under consideration range from 300,000 to 1,200,000 cubic yards of granular material; all potential alternatives provide substantial environmental benefits for the pool. For the purpose of the project request, the Corps of Engineers' St. Paul District recommended 600,000 yds of material for the pilot program assessment.

The preliminary Base Plan costs are estimated based on excavation of dredged material from the Reads Landing Temporary Unloading site in the lower part of Lake Pepin. The granular material will be unloaded mechanically and transported by barge to the project site and unloaded at Upper Lake Pepin, a distance of 23 miles. The Base Plan costs associated with moving 600,000 yards of granular material is **\$6,372,000**.

The incremental cost above the Base Plan include transporting the additional distance thru Lake Pepin, unloading and placement of the granular material, stabilizing with rock, capping the islands with fine material and seeding, willows and floodplain forest tree plantings. The incremental portion (Section 204 Costs) are the costs that are used to compare the alternatives in the Cost Effectiveness and Incremental Cost Analyses. For funding purposes, these incremental cost are then split between the Section 204 funding (65 percent) and the non-federal sponsor (35 percent). The section 204 total cost for this alternative is **\$13,626,000 (\$8,857,000 federal and \$4,769,000 non-federal)**.

**Of the \$13,626,000** Section 204 costs, **\$5,076,000** will be needed to complete the excavation and transportation of the material from the Reads Landing Temporary Dredge Material site to the project site.

**7. Describe, to the extent practicable, an estimate of the anticipated monetary and non-monetary benefits of the proposed beneficial use project with regard to the environmental, economic, and social benefits of the project.**

The Upper Mississippi River (UMR) ecosystem consists of hundreds of thousands of acres of bottomland forest, islands, backwaters, side channels, and wetlands, all of which support more than 300 species of birds; 57 species of mammals; 45 species of amphibians and reptiles; 150 species of fish; and nearly 50 species of mussels. More than 40 percent of North America's migratory waterfowl and shorebirds depend on the food resources and other life requisites (shelter, nesting habitats, etc.) that the ecosystem provides. The project area in Upper Pool 4 has degraded habitat with the potential for improvement to support these species.

Habitat Evaluation Procedures (HEP) will be used to quantify the potential benefits of alternative habitat improvement features (island construction, aquatic habitat improvement, forest creation, etc.) for the study area. Two potential evaluation models to be used are the Migratory Habitat Model for Dabbling Ducks (Devendorf 2001) and the Veery Habitat Suitability Index Model (Sousa, 1982). In general, construction of the project would result in habitat benefits for about 1000 acres of habitat. Much of the benefit would result from improved vegetation, depth diversity, and protection from wind driven waves. Based on past efforts modeling similar habitat improvements on the UMR, it would be reasonable to expect an improvement of the habitat suitability index (HSI) in the project area to rise by at least 0.25. On the 1000-acre area, that would result in a net gain of 250 average annual habitat units (AAHU).

The project would also result in ancillary recreational benefits. Upper Pool 4 supports many recreational activities that benefit from improved habitat for wildlife and fisheries. In the past, similar projects on the UMR have received a high level of public use and support.

**8. Describe if local support exists for the proposal.  
Statement of the non-federal interest's financial ability to provide a share of the project costs.**

During the development of the feasibility study the Corps and the Wisconsin DNR have coordinated with many agencies and groups and obtained wide agency support for the project. Representatives from the following entities contributed in one way or another to the discussion and decisions that went into the development of the recommended plan:

- Federal Aviation Administration
- Red Wing Airport
- Minnesota Pollution Control Agency
- Minnesota Department of Natural Resources
- U.S. Fish and Wildlife Service
- Upper Mississippi River Basin Association
- Pepin County Board of Supervisors
- Ducks Unlimited

The following municipalities, organizations, and elected officials have signed letters of support for the project.

Municipalities:

- Bay City, WI
- Maiden Rock, WI
- Stockholm, WI
- Pepin, WI
- Pierce County, WI
- Pepin County, WI
- Red Wing, MN
- Lake City, MN
- Wabasha, MN

Organizations:

- Minnesota Conservation Federation
- Lake City Sportsmen's Club
- Upper Mississippi Waterways Association
- Friends of Pool 2

Elected Officials:

- U.S. Representative Jason Lewis
- U.S. Representative Ron Kind
- WI State Senator Kathleen Vinehout

As the project Sponsor, Wisconsin DNR understands the cost share requirements and is able to sign the PPA.

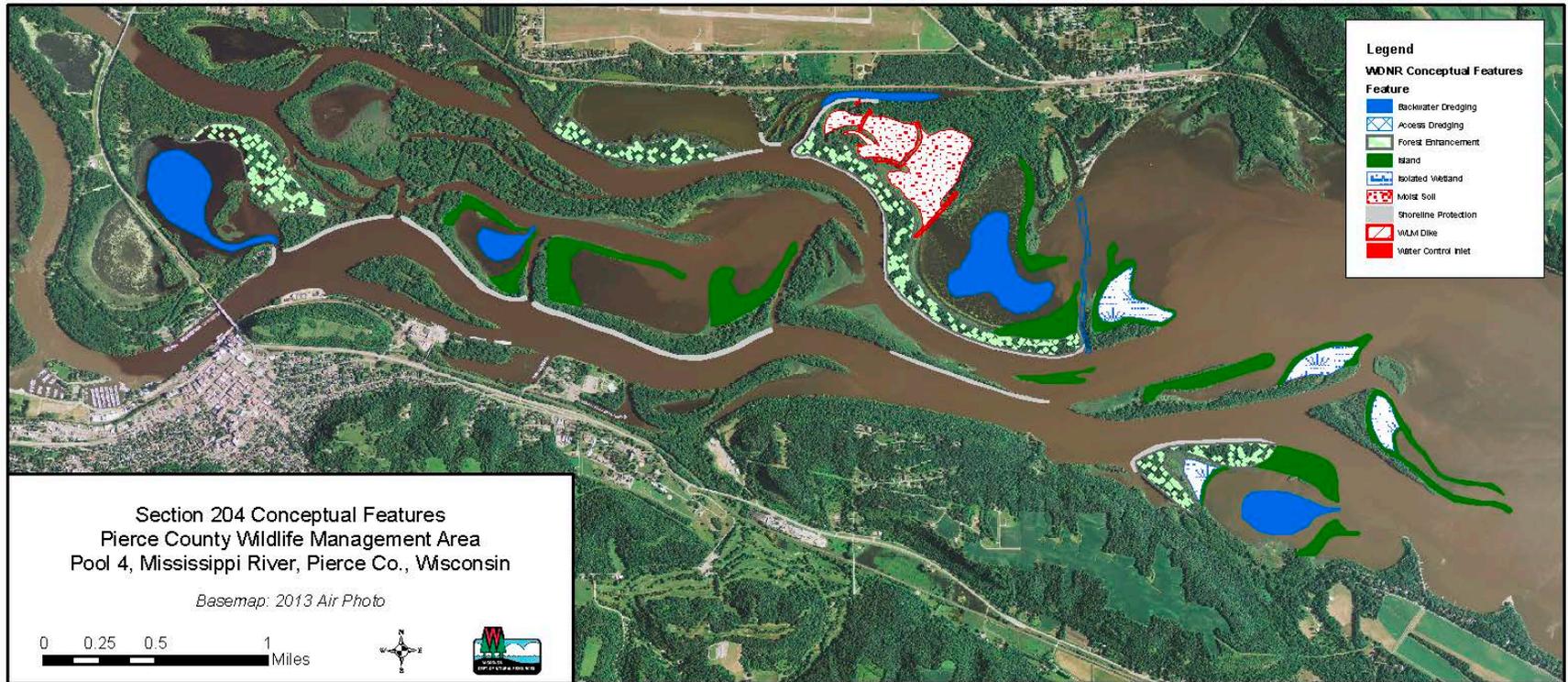


Figure 1: Pierce County Islands Head of Lake Pepin – Pool 4 Proposed Plan