

# **ENVIRONMENTAL ASSESSMENT**

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**EMBANKMENT REHABILITATION, MAINTENANCE  
AND ENVIRONMENTAL RESTORATION**

**LOCK AND DAM 4 EMBANKMENT  
UPPER MISSISSIPPI RIVER, RIVER MILE 753**

**WABASHA COUNTY, MINNESOTA**

**AUGUST 2006**



**US Army Corps  
of Engineers**®  
St Paul District

**CEMVP-PM-E**

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**INTRODUCTION**

The St. Paul District, Corps of Engineers (District), has prepared this environmental assessment (EA) to discuss environmental effects that may result from the rehabilitation and erosion protection measures under consideration for the embankment associated with lock and dam 4, river mile (RM) 753 of the Upper Mississippi River. This assessment is required by the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality Regulations (40 CFR 1500-1508), and the Corps of Engineers regulation ER 200-2-2.

**I. AUTHORITY AND PURPOSE**

The River and Harbor Act of 1930 authorized the construction and maintenance of the current 9-foot navigation channel, including the locks and dams. The purpose of this project is to implement rehabilitation and erosion protection measures associated with the lock and dam 4 embankment. These measures are proposed to protect the embankment from erosion in a manner that is more environmentally preferred than traditional rock placement.

**II. PROJECT LOCATION**

The proposed project area is along and adjacent to the lock and dam 4 embankment, Upper Mississippi River RM 753, in Wabasha County, Minnesota, across the river from Alma, Wisconsin (figures 1 through 3).

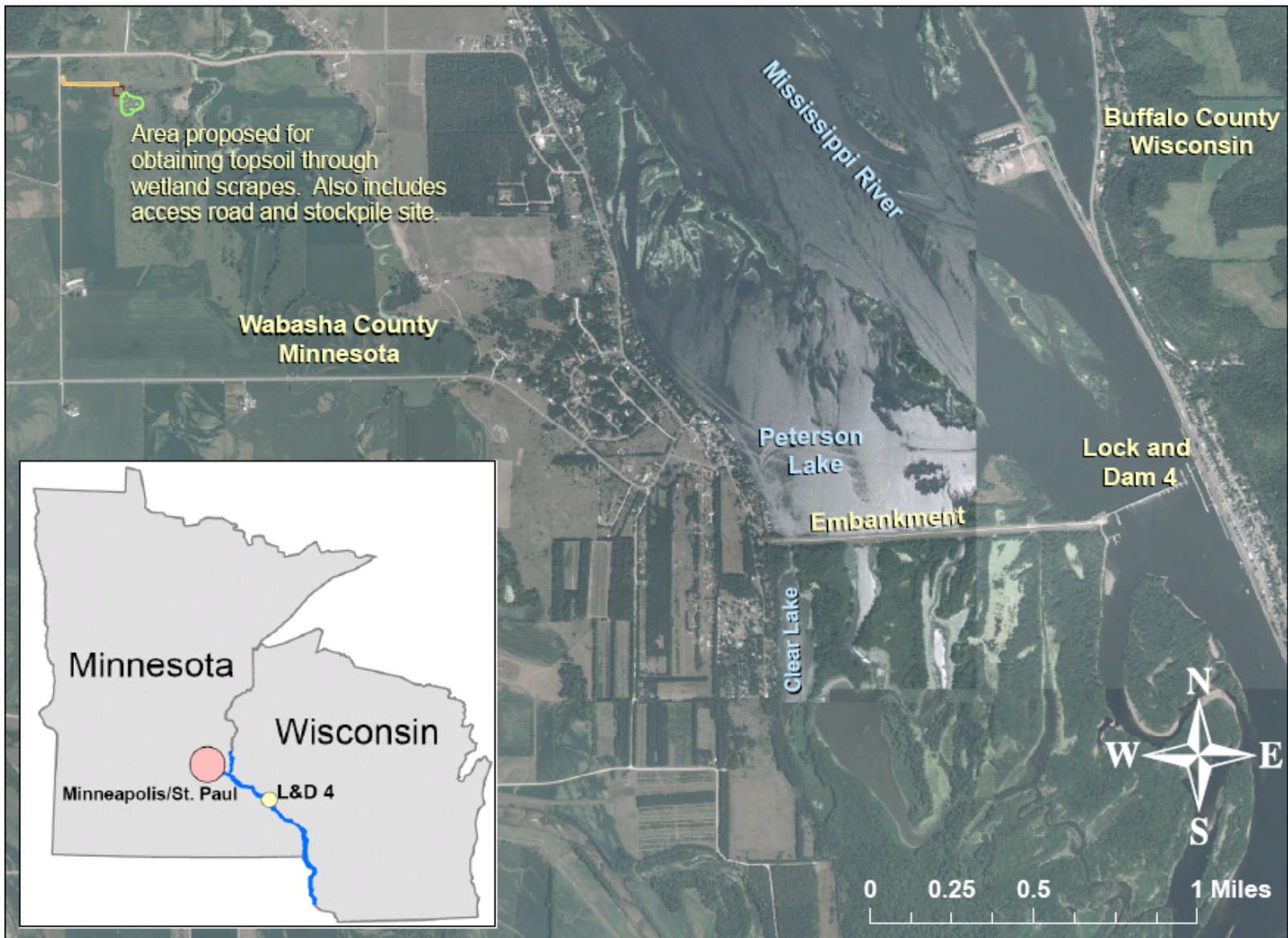
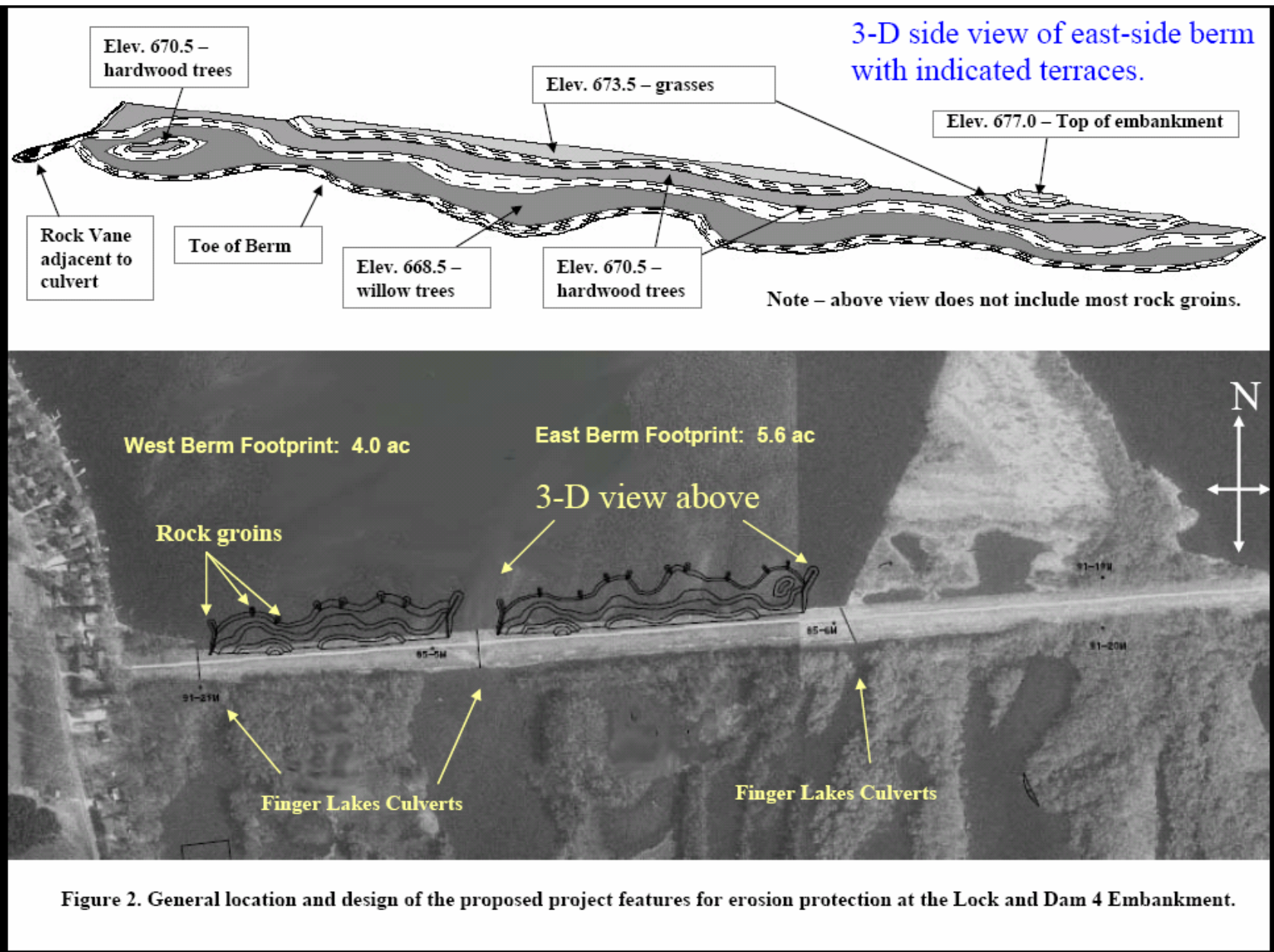
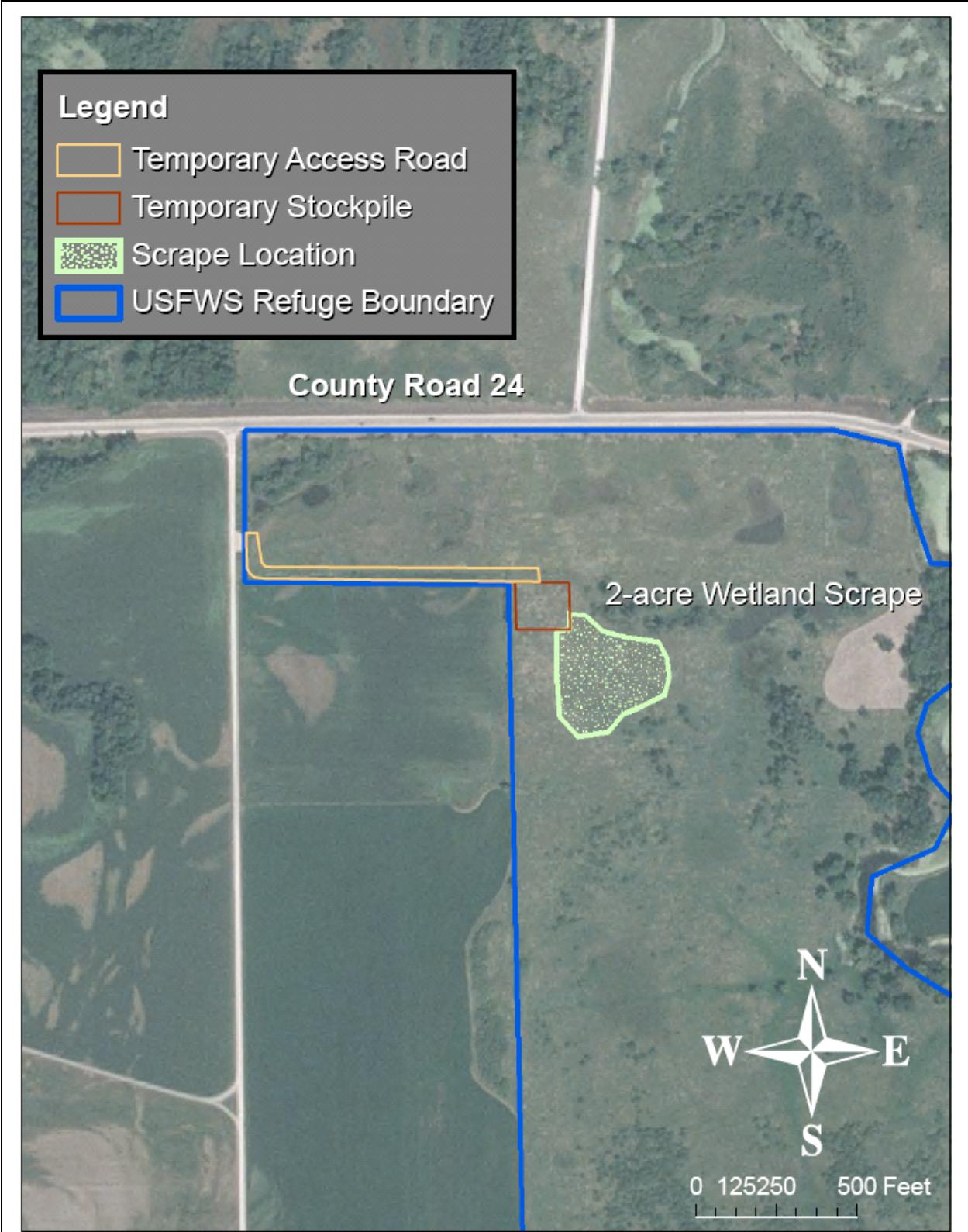


Figure 1. Project location for the Lock and Dam 4 Embankment Rehabilitation, Maintenance and Environmental Restoration Project







**Figure 3. Aerial photograph of the alternative 2-acre wetland scrape, and corresponding temporary access road and stockpile site.**



### **III. NEED FOR ACTION**

Lock and dam 4, including the embankment, was constructed and placed in operation in May 1935. The embankment was constructed of sand material and extends from lock and dam 4 westward about 1 mile on the Minnesota side of the Mississippi River. To protect the embankment from erosion caused by waves and current, the upstream side was covered with rock protection (riprap) from the toe of the embankment to within about 1 foot of the top. Over time, this rock protection has weathered and become degraded. Some areas of the embankment have recently received new rock work. However, the rock protection at lock and dam 4 is generally considered degraded and in need of repair.

One widely used technique for erosion protection is the placement of rock. This technique was used for construction of this embankment and continues to be widely applied for erosion protection throughout the Mississippi River basin. Although rock protection would again prove effective at this location, it is also appropriate to consider alternative measures for erosion protection.

The project proposed here will serve as a “demonstration project” for alternative measures of erosion protection along an existing embankment. These measures will be evaluated for their effectiveness and potential for use on future projects.

The objective of this project is to provide erosion protection for the lock and dam 4 embankment using environmentally-preferred alternatives to traditional use of riprap.

### **IV. DESCRIPTION OF PROPOSED ACTIONS**

The District proposes to construct two berms immediately in front of the existing embankment (see figure 2). Both berms would be constructed of sand and extend off the existing embankment into Peterson Lake. The berms would include multiple terraces that would be capped with fine material and vegetated to provide both positive habitat values and protection against erosion. Low control pool (LCP) elevation is 667.0 feet msl (above mean sea level). The terraces would have elevations of 668.5, 670.5, 673.5, and 677.0 feet msl (top of embankment). The lowest terrace would be vegetated with willow trees; the next terrace (670.5) would be vegetated with hard mast trees, and the top two terraces would be planted with grasses. Sloped areas also would be capped and vegetated. The estimated construction cost for the preferred alternative is likely around \$1.2 to \$1.3 million.

Sand for berm construction would come from the Teepeeota Point dredged material placement site. Sand would be brought by barge to the tip of the peninsula on the north side of the embankment, immediately east of the proposed berms. Trucks would then move the sand and place it along the upstream side for berm construction. About 31,400 cubic yards of sand would be needed for the western berm, and about 27,100 cubic yards of sand would be needed for the eastern berm (about 58,500 cubic yards of sand in total). The total footprint area of the western berm is about 4.0 acres, while the footprint area of the eastern berm is about 5.6 acres.

Fine material would be obtained from either a wetland area near the embankment; or Clear Lake via hydraulic dredging (figures 1 and 3). Coordination with the State and federal resource agencies identified Clear Lake as a potential location for obtaining fines. Coordination with the U.S. Fish and Wildlife Service (USFWS) also identified an area for potential wetland scrapes, on USFWS refuge land, as a source for fine material. Obtaining material from wetland scrapes was initially the preferred option by the District for obtaining fine material. However, discussions with State and federal resource agencies, including the River Resources Forum, identified that hydraulic dredging was their preferred method for obtaining fine material. For this reason, the District is searching for additional means that would facilitate obtaining material from Clear Lake. This EA will thus discuss issues and effects associated with obtaining fine material both from wetland scrapes, as well as hydraulic dredging.

For obtaining material from an adjacent wetland, material would be obtained by “scraping” the top layer of soil and transporting it to the embankment for placement. The scraped area would fill with water during wet periods and would serve as valuable habitat. This scraped area would be considered a habitat improvement over existing conditions. About 2,400 cubic yards of fine material would be needed for the western berm, and about 3,700 cubic yards of fines would be needed for the eastern berm (about 6,100 cubic yards of fine material in total). Wetland scrapes would be approximately 1 to 3 feet deep and cover about 2 acres.

For obtaining fines from Clear Lake, material would be obtained by hydraulic dredging and pumped to the embankment site for drying and capping. Dredge cut size and depth could vary depending on the sediment characteristics of Clear Lake. The dredged area would improve Clear Lake for summer and winter fish habitat, and would be considered a habitat improvement over existing conditions. The same 6,100 cubic yards of fine material would be needed for capping both embankments.

Rock would be brought in from a local quarry and would be directly placed by barge or would be delivered by barge to the adjacent peninsula or storage yard and transported by truck to areas along the north side of the embankment. About 3,075 cubic yards of rock would be needed for the western berm, and about 1,350 cubic yards of rock would be needed for the eastern berm (about 4,425 cubic yards of rock in total).

The berms would be constructed to avoid impacts on the existing culverts that pass through the embankment. Both berms would include a large terminal groin at the end of each berm to minimize movement of sand around the end of the structure. In addition, smaller groins would be placed along each berm for additional stability. Fine material would be placed on top of the sand and vegetated. Collectively, these groins, fine material capping and vegetation should stabilize the berms and minimize material migration back to the river or through existing culverts and into the Finger Lakes below the embankment.

Construction for this effort would take 1 to 2 or more years, depending on when construction is initiated and which method is chosen to obtain fine material. The terminal groins would be constructed first. Sand would then be brought in for placement. The construction approach will then be dictated by how fine materials are obtained. If the fine material comes from wetland scrapes, then sand would be brought to the embankment, and placed to create the

four berm terraces. Then, fine material would be transported from the scrape site and placed on top of the terraces. Once adequate fine material is placed, the embankment would be seeded with a cover crop for stability. The embankment would be planted with desired vegetation the following season.

If fine material originates from hydraulic dredging, then the construction sequence will differ. The exact form and sequence of this construction is still uncertain, but would likely follow this sequence. First, the sand brought to the embankment will be used to construct a large containment area. The containment area would generally cover the same footprint as that of the permanent berms. Sand berms would ring the outside edge of the containment facility and tie into the existing embankment. Then, fine material would be hydraulically dredged and pumped into the containment facility. The material would then sit for a period to decant and dry enough to continue construction. This would likely take several weeks, and may require that construction be suspended over the fall and winter, and resume the following spring/summer. Once the material has dried adequately, the fine material would be pushed off to one side of the containment area. Then, sand used to construct the containment area would be used to construct the terraces. Once the terraces are shaped, the fine material would be spread over the terraces. The embankment would then be seeded with a cover crop, and/or directly planted with desired vegetation.

## V. ALTERNATIVES

The following alternatives were considered for erosion protection at the lock and dam 4 embankment: no Federal action, use of a vegetated berm to control erosion, use of a vegetated island to control erosion, and placement of traditional rock.

- 1. No Federal action.** No new erosion protection would be implemented at the lock and dam 4 embankment.
- 2. Use of a vegetated berm for erosion protection.** Implementation of a vegetated berm at this location is the preferred alternative for erosion protection. This alternative would employ using two multiterraced berms that would extend from the existing embankment. Two smaller berms would be used to avoid impacts on existing culverts passing through the embankments. The two berms would include four different terrace levels, would be constructed of sand, and would be capped with fine material. The lowest tier would be planted with willows, the next tier planted with hard mast trees, and the final tiers planted with grasses.
- 3. Use of a vegetated island for erosion protection.** Implementation of a vegetated island would include a multiterraced island constructed out from the embankment in Peterson Lake. The island would include four different terrace levels, would be constructed of sand, and would be capped with fine material. The lowest tier would be planted with willows, the next tier planted with hard mast trees, and the final tiers planted with grasses.

**4. Placement of traditional rock for erosion protection.** This alternative would use new rock placed along the entire length of the embankment to protect against erosion. Rock would be placed from the toe of the embankment to within about 1 foot of the top elevation. This alternative would essentially be the same as erosion protection measures currently employed at all other embankments.

## **VI. AFFECTED ENVIRONMENT**

### **A. SOCIOECONOMIC RESOURCES**

The population of Wabasha County is around 22,000 people. A recent population estimate for nearby Wabasha, Minnesota, was approximately 2,600 people. The area adjacent to the embankment on the Minnesota side does include residences (mix of permanent homes and cabins) as well as a campground.

Lower pool 4 experiences heavy boating activity. Recreational fishing is a popular throughout the area, including above and below the embankment. The embankment itself is a popular spot for fishing.

### **B. BIOLOGICAL RESOURCES**

The area of lower pool 4 and upper pool 5 supports a diverse riverine community of aquatic and terrestrial resources. These resources within the Upper Mississippi River floodplain have been discussed in detail within the *Final Environmental Impact Statement, 9-Foot Navigation Channel Project, Channel Maintenance Management Plan, Upper Mississippi River, Head of Navigation to Guttenberg, Iowa* (June 6, 1997). The resources of the Upper Mississippi River also have been discussed within Theiling et al. (2000), USGS (1999), as well as numerous other documents. The bald eagle (*Haliaeetus leucocephalus*) is federally listed as threatened, with nests found in the general area. The Higgins' eye pearly mussel (*Lampsilis higginsii*), a federally classified endangered species, also is known to exist in the Upper Mississippi River. This area of bottomland is part of the Upper Mississippi River National Wildlife and Fish Refuge.

### **C. CULTURAL RESOURCES**

The lower Pool 4 and upper Pool 5 locality contains numerous cultural resources indicating continual human occupation over approximately the last 12,000 years. Cultural resources include precontact and historic archaeological sites, historic shipwrecks, navigation features and standing structures and situated across a variety of landforms. Several cultural resource sites within this locality have been listed on the National Register of Historic Places (NRHP) or are eligible to be listed on the Register. The proposed project has the potential to impact cultural resources.

Interest in the archaeological record of the Upper Mississippi River valley, including the lower Pool 4/upper Pool 5 locality (locality), has been ongoing since the end of the nineteenth century (e.g., Lapham 1855; Pleger 1997; Thomas 1894, Winchell 1911). Early research in the area centered on the contents of burial mounds and who built them, although little information exists from burial mound delving from the Pools 4 and 5 localities (e.g., Arzigian and Stevenson 2003). By the early twentieth century most practitioners rejected the popular notion that a race of non-American Indians constructed the mounds and non-scientific investigations gave way to systematic mapping and excavation (e.g., Theler and Boszhardt 2003). Despite an awareness of cultural resources in the pool, no comprehensive preimpoundment survey was completed prior to construction and subsequent operation of Lock and Dam 4 in 1935 (e.g., Dunn 1996). Modern archaeological research within the project area began during the 1970s with highway projects and a Corps sponsored survey of dredged material placement sites (Johnson and Hudak 1975; Nystuen 1971; Penman 1984; Petterson et. al 1988). Since the last quarter of the twentieth century, numerous cultural resource investigations have been completed within the Pools 4 and 5 localities. These include investigations focused on several prominent terraces, such as the areas around West Newton Chute in Minnesota (Florin 2003; O'Mack and Withrow 1989), literature based overviews (i.e., site inventories, geomorphic mapping, shipwreck locations, navigation structures), shoreline surveys, shoreline monitoring studies and project specific site identification and evaluations within the locality (Dobbs and Mooers 1991; Jalbert et. al. 1996; Jensen 1992; Johnson and Hudak 1975; Madigan and Shermer 2001; O'Mack 1991; Overstreet et. al. 1983; Pearson 2003).

Despite greater awareness of cultural resources situated within floodplain settings (e.g., deeply buried and submerged sites), few areas within the floodplain portions of the Upper Mississippi River have been subjected to deep site testing, especially along the upper reaches (cf. Kolb and Boszhardt 2004). Also, some cultural resources are experiencing profound affects from inundation, erosion and other forces associated with modern river navigation (e.g., creation of the pool, recreation activities, etc.) (Benn and Lee 2005; Perkl 2005). Cultural resource practitioners are beginning to understand these complex mechanisms and their influence on cultural resources and are formulating strategies to manage this situation (e.g., site protection and preservation schemes). In addition, few cultural resources within the Pools 4 and 5 localities have undergone evaluative testing to determine their eligibility for listing on the NRHP. Nevertheless, investigations from several archaeological sites within and proximal to the Pools 4 and 5 localities have contributed to our knowledge base concerning the cultural history of this region of the Upper Mississippi River (e.g., Benn 1979; Birmingham and Stoltman 1997; Perkl 2002; Theler and Boszhardt 2004).

A variety of cultural resources are located within one mile of the Lock and Dam 4 complex and the proposed Barton/Lofgren Tract borrow area. A total of four archaeological sites are situated in proximity to Lock and Dam 4: 21WBE (Historic foundation remnants), 47BF160 (Precontact lithic scatter), 47BF3 (Precontact burial mound) and 47BF2 (Historic cemetery). In addition, Lock and Dam 4 is listed on the NRHP, several historic wing dams south of the lock and dam are eligible for listing on the NRHP (Pearson 2003) and several historic structures within the City of Alma are listed or eligible for listing on the NRHP. Within one mile of the proposed Barton/Lofgren Tract borrow area are six archaeological sites: 21WB17 (Precontact burial mounds), 21WB18 (Precontact burial mounds), 21WB19 (Precontact burial

mounds), 21WB20 (Precontact burial mounds), 21WB37 (Precontact burial mounds) and 21WBC (Early historic settlement and precontact village) and a historic school, farmhouse and bridge.

## **VII. ENVIRONMENTAL IMPACTS OF THE PREFERRED ALTERNATIVES**

Effects of the preferred alternative are discussed below and are summarized in table EA-1.

### **A. NATURAL RESOURCES**

The berms would be constructed on top of the existing rock protection, and extend out from the embankment. The berms would include a footprint of about 9.6 acres. At least a portion of this footprint would occur over the existing embankment. However, areas of backwater habitat will be converted by this alternative to bottomland forest-type habitat. The aquatic areas affected would generally be sandy and shallow (e.g., less than 1.5 feet deep), and generally of limited habitat value. Conversely, the bottomland forest habitat created should be of greater overall quality for that type of habitat.

Immobile biota, such as mussels and aquatic plants, would be buried by this proposed alternative. Fish and other aquatic species may be temporarily disturbed during construction, and some temporary increases in turbidity may be noticeable. However, no substantial adverse, long-term effects would be anticipated on invertebrate, fish or aquatic plant communities of lower pool 4. The aquatic areas adjacent to the embankment also would likely see similar or slightly improved long-term use by fish, and possibly other aquatic resources, following construction.

Sand for this effort will be brought in by barge to the tip of the peninsula on the north side of the embankment, immediately east of the project site. No access dredging would be required. The tip of the peninsula is relatively disturbed and dominated by scrub/shrub habitat. The area would be temporarily disturbed during construction, but would be allowed to revegetate afterward. Sand would be trucked from the off-loading site to the embankment. These trucks would follow existing trails on the peninsula. To the extent possible, mature trees would be avoided, and minimal clearing would be required. Overall, there would be no substantial, long-term impacts to biota on the peninsula.

The Finger Lakes would not see substantial adverse impacts from the proposed action. The level of disturbance will depend on how fine material is obtained. If fine material is obtained from wetland scrapes, then the level of disturbance to Clear Lake would be minimal. If fine material is obtained from Clear Lake, then short-term effects would occur. These would include increases in turbidity, disturbance in river bottom, displacement of vegetation and invertebrates living within the footprint of the dredge cut. Temporary disturbance of fish, waterfowl and other biota could occur. Impacts associated with dredging would generally be limited to the period of construction. However, the long-term biological benefits of this action would be important.



Overall, hydraulic dredging would result in long-term benefits to area biota. In addition to these issues, project features of the berm should minimize any long-term movement of sand through the existing embankment culverts. Construction at the embankment also could lead to short-term increases in turbidity within the Finger Lakes, but any increases would be short-lived.

Berm construction would not have any substantial long-term adverse effects on wildlife or wildlife habitat. Wildlife may be temporarily disturbed during construction. However, following vegetation, the constructed berm would improve wildlife habitat over existing conditions. It would likely take several years for the planted vegetation to grow to maturity and to fully realize the resulting benefits.

The area identified for wetland scrapes (figures 1 and 3) would see a temporary disturbance during construction. Heavy equipment would be used to strip the top 1 to 3 feet of topsoil to cap the berm. The total scrape area would be about 2 acres. Material would be stripped off and pushed into a stockpile site to dry. Material would dry for a short period (e.g., days or weeks) before being transported to the berm for capping. The area needed for stockpiling would likely be 1 acre or less. Lastly, the area of the project scrapes is low in elevation. A temporary access road would be constructed to facilitate access to the scrapes and stockpile site. The temporary access road would occupy 1 acre or less. The road would remain in place until all fine material has been removed for capping, which could extend through the construction season (end of September). The road would then be removed, and general land contours would be restored.

The area of wetland scrapes would disturb about 4 acres of existing habitat. Vegetation growing in the area of the scrapes, stockpile site and access road would be killed. Currently, this area is dominated by reed canary grass. The impacts on vegetation would generally be short-lived, with regeneration following construction. Most impacts would be alleviated by the following growing season. Some clearing of brush and small trees would be needed to construct the access road. To the extent practicable, small trees could be planted to offset those that were cleared. Wildlife would likely be disturbed during construction, but this impact would also be short lived. Also, the scrapes should provide long-term improved conditions for wildlife within the project area. Overall, the long-term benefits resulting from the scrapes would outweigh the short-term impacts associated with construction.

## **B. ENDANGERED SPECIES**

Two species federally listed as threatened or endangered can be found in Wabasha County along the Mississippi River: Higgins eye pearly mussel (*Lampsilis higginsii*) and the bald eagle (*Haliaeetus leucocephalus*). However, Higgins eyes have not been collected recently in lower pool 4. Recent mussel sampling along the upstream side of the embankment did not identify any Higgins eye. This specie also would not be expected to occur within Clear Lake immediately below the embankment. Thus no project-related effects on this species would be anticipated. For the bald eagle, construction activities would be limited to the embankment area and the floodplain area identified for wetland scrapes. Coordination with the USFWS refuge indicated the presence of a few bald eagle nests in lower pool 4. However, the closest nest is

over ½ mile from any proposed construction zone. Thus, no project-related effects would be anticipated on this species as well. It is the District's determination that this project would have no effects on the Higgins' eye pearly mussel or the bald eagle. Through coordination, the USFWS has concurred with this determination.

**C. USFWS REFUGE COMPATIBILITY**

The proposed action would include a 9.6-acre footprint at the existing embankment and 2 acres of land permanently affected by the wetland scrape. With the exception of a small amount of land at the embankment, the majority of this land is located within the USFWS Upper Mississippi River Wildlife and Fish Refuge. However, the USFWS has said this action would be acceptable and supports the project. The USFWS has indicated it would grant a Special Use Permit to the Corps for this project.

**TABLE 1. Effects of the Preferred Action on Natural Resources and Historic Properties**

<b>Types of Resources</b>	<b>Authorities</b>	<b>Measurement of Effects</b>
Air quality	Clean Air Act, as amended (42 U.S.C. 165h-7, et seq.)	No significant effect
Endangered and threatened species critical habitat	Endangered Species Act of 1973, as amended (16 U.S.C. 1531, et seq.)	No significant impacts anticipated
Fish and wildlife	Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.)	No significant effect
Floodplains	Executive Order 11988, Flood Plain Management	No significant effect
Historic and cultural properties	National Historic Preservation Act of 1966, as amended (16 U.S.C. 470, et seq.)	No significant effect
Water quality	Clean Water Act of 1977, as amended (33 U.S.C. 1251, et seq.)	No significant effect
Wetlands	Executive Order 11990, Protection of Wetlands, 24 May 1977	No significant effect

**D. HISTORIC PROPERTIES**

The proposed project has the potential to impact unrecorded cultural resources within the project area. The potential effects to cultural resources will be discussed separately for the

embankment rehabilitation and the proposed Clear Lake and Barton/Lufgren Tract fine material borrow areas.

#### *Lock and Dam 4 Berm Stabilization*

The berm stabilization project involves constructing an irregular shaped bankline with multiple terraces adjacent to and immediately upstream of the embankment. The berm will be created with dredged material (sand) obtained from the Teepeeota Point Dredged Material Placement Site, just upstream of Lock and Dam 4. The dredged material will then be capped with fine material, obtained from either Clear Lake or the Barton/Lufgren Tract (see below), and vegetated. Constructing the berm will take place from the existing embankment and barges.

Potential project impacts include the possible burial of unrecorded cultural resources that may exist on a series of now submerged islands upstream of the embankment. However, the likelihood that intact unidentified cultural resources exist adjacent to the upstream portion of the embankment is remote for the following reasons:

1. The Minnesota embankment transects a floodplain that once consisted of islands, side channels, isolated lakes, sloughs and wetlands- a landscape relatively preserved immediately downstream of the embankment. Embankment construction at Lock and Dam 4 during the early 1930s involved clearing vegetation, stripping the topsoil and stockpiling the spoil on the upstream and downstream aspects of the embankment corridor. The space between the spoil piles was then dredged. Dredging depths are uncertain, although deep enough to reach solid sand, here underlying a sequence of “silt and mud,” likely several feet (O’Mack 1991). Next, fill material obtained from islands in front of the roller gate portion of the dam was hydraulically placed to create the earthen embankment and the removed topsoil presumably placed over the sand fill. Finally, stone rip-rap was placed over the embankment. As a result, the cut and fill activities would have destroyed cultural resources that may have existed along the embankment and adjacent work areas.
2. Since the construction of the embankment in 1935, the water levels in this portion of the pool rose about 12 ft to 15 ft or from elevations of about 655 ft to 670 ft. During this process of submergence, it is likely that sediments, especially the topographic high spots, have been re-worked through wave action and variable flows. This action may have eroded cultural resources.
3. Since the construction of the embankment in 1935, the water levels in this portion of the pool rose about 12 ft to 15 ft or from elevations of about 655 ft to 670 ft. Recent bathymetry data indicate that the depth of the river bottom (Peterson Lake) in the project area range from about one foot to about nine feet below the pool water level of 667 ft. In effect, the embankment has worked to accumulate sediments on its upstream side, with silt deposits in most of the project area reaching depths of six feet and deeply burying the previous floodplain landforms. Water depths over previous side channels and other depressions are somewhat deeper, reflecting the pre 1935 topography, although these

areas have also experienced infilling. Here, cultural resources will be deeply buried by accumulated sediments.

Because of the above factors, it is likely that any cultural resources proximal to the upstream side of the embankment may have been destroyed or deeply buried through embankment construction, eroded by fluvial action and submerged or deeply buried from subsequent silt deposition. However, in order to determine the nature of the Peterson Lake sediments and their potential to harbor archaeological deposits, the Corps will complete a soil-coring program adjacent to the upstream portion of the embankment.

#### *Clear Lake Borrow Area*

Clear Lake lies immediately downstream of the Lock and Dam 4 embankment (in Pool 5) adjacent to the Minnesota shoreline. This portion of the floodplain retains its pre-lock and dam character, consisting of islands, side channels, isolated lakes, sloughs and wetlands. Clear Lake has been mapped as a backwater lake since approximately 1850 AD, although at some point during the Holocene the main channel or side channels of the Mississippi River would have occupied the area, while at other times it may have been an island or wetland.

Similar to the upstream portion of the embankments, it is likely that any cultural resources proximal to the downstream portion of the embankment may have been destroyed or deeply buried through embankment construction. Areas of Clear Lake more distant from the embankment may have been subjected to erosion by fluvial action and submerged or deeply buried from subsequent silt deposition. These actions would also likely destroy or obscure cultural signatures.

As with Peterson Lake, the Corps will complete a soil-coring program adjacent to the upstream portion of the embankment. The program is designed to determine the nature of the Clear Lake sediments and their potential to harbor archaeological deposits

#### *Barton/Lofgren Tract Borrow Area*

The proposed Barton/Lofgren Tract borrow area is situated on a floodplain between two glacial terraces. This floodplain landform represents an abandoned channel of the Glacial Mississippi River and has subsequently experienced aggradation through alluvial fan formation from the Zumbro River. The area also encountered some loess deposition, although escaping dunal formation witnessed along the easterly terrace and points to the south. For most of the Holocene, this area hosted tall-grass and wet prairies. Mapped soils in the borrow area include the moderately well drained Minneiska Series, developed under tall-grass prairie, and the poorly drained Colo Series that developed under swamp grasses and sedges (wet prairie)(Harms 1965). Neither of these soils harbor buried horizons. Before the tract was incorporated into the Upper Mississippi River Wildlife and Fish Refuge it was cultivated.

Both of the terraces to the west and east of the floodplain contain a variety of cultural resources. The eastern terrace once contained an extensive precontact burial mound group, demarcated by several sites southwest of the borrow area. At least 62 mounds were mapped in

this area during the late 19<sup>th</sup> century. Along this same landform to the northwest of the borrow area is another mound group that once contained at least 92 mounds. Northeast of the borrow area, along the eastern terrace, lies an artifact scatter that represents, at minimum, an historic Native American village as well as an early European settlement (Teepeeota).

No cultural resources have been recorded within the borrow area. The nearest site is approximately three-quarters of a mile to the southwest, 21WB20, consisting of six mounds and located on the western terrace edge. A visual inspection of the area completed by Corps Cultural Resources staff on April 28, 2006, concluded that the area has low potential to contain significant archaeological materials. The area is topographically low, with relatively poorly drained soils-during the site visit, standing water was observed in portions of the area, consistent with a wet-prairie. Although at different periods throughout the Holocene this area may have been dry, more suitable habitation sites or other areas where significant cultural materials may exist are located on the adjacent terraces. The Corps believes that no cultural resources will be affected by use of the proposed borrow area. The USFWS Historic Preservation Officer concurred with this determination. Therefore, no further cultural resources work is recommended for the Barton/Lofgren Tract.

Other effects to cultural resources that the project may produce include possible improvements to access and haul roads, as well as staging areas through ground disturbing activities. Of particular concern would be any modifications or impacts to the area immediately adjacent to the western aspect of the embankment. Here, the embankment joins with a pronounced terrace along the Minnesota side of the river floodplain. Again, while no cultural resources are identified within this area, the terrace has a high probability for containing archaeological sites. If road improvements or repairs as a result of heavy equipment use/destruction are needed, a Phase I survey will need to be completed.

## **E. AIR QUALITY**

The proposed construction activities might create minor, temporary increases in dust and airborne particulates. Heavy equipment traveling along the embankment could increase dust levels during construction. However, actions would be taken to reduce dust levels, which could include the use of a watering truck. Therefore, this potential adverse effect is not considered to be substantial. Disturbances to nearby residents and businesses would be minimal, and no air quality standards should be violated.

## **F. WATER QUALITY**

Any impacts to water quality would generally be limited to short-term, temporary changes associated with construction activities (e.g., temporary increase in turbidity). However, no substantial adverse short-term or long-term impacts are anticipated. For a thorough discussion of water quality issues, please refer to the Clean Water Act Section 404(b)(1) Evaluation that was prepared to address the discharge of fill material into the Mississippi River. This has been attached as appendix A.

## **G. MISCELLANEOUS RESOURCES**

The proposed action would use about 58,500 cubic yards of sand from the Teepeeota Point dredged material placement site. This placement site has reached its maximum capacity of 1.6 million cubic yards of material. The removal and permanent placement of this material is becoming critically important for dredged material management activities in lower pool 4. The proposed action here would use only a small volume of the total material from this location (3 to 4 percent). However, the removal and permanent placement of a large volume of material from Teepeeota would be extremely challenging. Thus, the beneficial use of material associated with this action is meaningful.

No known hazardous or toxic waste sites are in the vicinity of the project nor would any be affected if the proposed project were constructed. No mineral resources would be affected if the proposed project were constructed.

## **VIII. CUMULATIVE IMPACTS**

Large-scale cumulative changes and effects to the Upper Mississippi River were discussed in the *Upper Mississippi River and Illinois Waterway Cumulative Effects Study* (WEST 2000), as well as USGS (1999), Theiling et al. (2000) and other sources. Cumulative impacts from this project would generally be limited to floodplain habitat within lower pool 4, and possibly upper Pool 5. The preferred alternative would affect habitat adjacent to the existing embankment. It would also affect habitat within either the proposed scrape site; or the proposed site for hydraulic dredging. Habitat at and adjacent to the embankment includes riprap and sand associated with the embankment, as well as backwater aquatic, wet floodplain forest, and other wetland habitat. The primary impact would be the conversion of backwater habitat to floodplain forest. This tradeoff is considered acceptable at this site and would be a considerable improvement over the traditional use of riprap for erosion protection. Also, the proposed scrape would be considered an improvement in wetland habitat at this site over the existing conditions. Likewise, hydraulic dredging of fine material from Clear Lake would be considered an improvement in aquatic habitat over existing conditions. Thus, the project is generally considered an improvement in the cumulative environmental conditions at the embankment and lower pool 4/upper pool 5 floodplain areas.

## **IX. SOCIOECONOMIC IMPACTS OF THE PREFERRED ALTERNATIVE**

### **A. COMMUNITY AND REGIONAL GROWTH**

The proposed alternative would have no direct impact on community and regional growth.

**B. COMMUNITY COHESION**

No major impacts on overall community cohesion would be expected from the construction of the proposed alternative.

**C. DISPLACEMENT OF PEOPLE**

No residential relocations would be required.

**D. PROPERTY VALUES AND TAX REVENUES**

The proposed alternative would have little direct effect on property values or resulting tax revenues. The aesthetic value of the area would improve, but it is not expected to substantially change adjacent property values.

**E. ENVIRONMENTAL JUSTICE**

Environmental justice is a national goal and is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The proposed project would be constructed on public lands; no private lands would be acquired. Public involvement, via distribution of information concerning the proposed project, has and will continue to be an integral part of planning for this project to ensure that concerns of all people will be fully considered in the decision making process.

**F. PUBLIC FACILITIES AND SERVICES**

Potential dredging of Clear Lake could disrupt use of the Finger Lakes Pioneer Access boat ramp (owned by Minnesota Department of Natural Resources (MnDNR)). The district would coordinate with the MnDNR to minimize impacts to the extent possible. Another potential impact would be on existing road surfaces as a result of heavy equipment travel. The Corps will coordinate with appropriate Federal, State or local agencies, as appropriate, to identify the potential for impacts and whether any efforts are needed to further avoid, minimize or mitigate adverse effects.

**G. LIFE, HEALTH, AND SAFETY**

The preferred alternative would not result in substantial long-term changes in safety at the project site relative to existing conditions. However, during construction, heavy equipment would be traveling the roads adjacent to the embankment on the Minnesota side. In the event

that fine material is obtained from the wetland scrape, then transport of fine material from the scrape would require an estimated 600 dump truck loads or more traveling to and from the embankment. Depending on the scheduling, this hauling could be accomplished in 2 to 4 weeks. This period could be extended to reduce the frequency of trucks accessing the site. However, for the construction period, heavy equipment traffic would increase considerably in the project area. This increase would affect residences along the travel routes leading into the Minnesota side of the embankment. It also would affect residences and a campground along the length of Pioneer Drive adjacent to the embankment. This roadway has only one exit, which leads past the entrance to the embankment. The Corps will coordinate with the local public to notify them of these activities and provide awareness. The District will work to adjust the trucking schedules to minimize impacts to the extent practicable.

Conversely, obtaining fine material from Clear Lake would eliminate the issues associated with trucking fine material from the wetland scrape.

In addition, the embankment area would be closed to pedestrian access during construction. This area is popular with recreational use, particularly sport fishing. These activities would not be available from the embankment during construction. To the extent practicable, signs will be placed at access points indicating the area is dangerous and closed to unauthorized personnel during construction. Following construction, the area will once again be available to the public for the full range of activities that are currently available.

#### **H. BUSINESS AND INDUSTRIAL GROWTH**

No long-term impacts are anticipated in the project vicinity.

#### **I. EMPLOYMENT AND LABOR FORCE**

The proposed project would have no long-term impacts on employment or the labor force in Wabasha County.

#### **J. FARM DISPLACEMENT**

No farmsteads would be affected by the proposed alternative.

#### **K. NOISE LEVELS**

As noted above, the preferred alternative would result in a considerable increase in heavy truck traffic during construction. Transport of fine material from wetland scrapes would require more than 600 dump truck loads traveling to and from the embankment. The period of heavy trucking could be adjusted by scheduling and could take 2 to 4 weeks or longer depending on the desired scheduling. Conversely, hydraulic dredging of material from Clear Lake would



eliminate the noise impacts for areas along Peterson Lake. However, noise from dredging activities would be noticeable and may be a nuisance in the immediate vicinity. The Corps will coordinate with the local public to notify them of these activities and provide awareness. The District will work to adjust the trucking schedules to minimize impacts to the extent practicable.

In addition to the impacts noted above, the embankment would see heavy truck activity to move all the materials to build and shape the berms. Thus, noise at the embankment itself would be elevated during heavy construction, which would likely occur intermittently over the next couple field season (June through September).

Following construction, noise levels should return to normal.

#### **L. AESTHETICS**

Construction activities would have temporary impacts on aesthetics. However, when completed, this project should improve aesthetics. As vegetation begins to grow along the embankment, the new features would hide the existing riprap.

### **X. ENVIRONMENTAL IMPACTS OF THE NONPREFERRED ALTERNATIVES**

#### **A. NO FEDERAL ACTION**

The no Federal action alternative would require continued use of existing riprap protection. Given the age of this material, such an action would be unacceptable. In reality, the no-federal action would likely include periodic repairs of the existing rip rap to maintain some form of erosion protection. However, such an approach is inefficient, and may expose the structure to greater risk of failure, particularly during floods. Either approach is not preferred compared to the recommended plan.

The No Action alternative also would mean that no material would be removed and used from the Teepeeota dredged material placement site. Given the great need to empty dredged material from this site, such an action is not desirable.

#### **B. USE OF A VEGETATED ISLAND FOR EROSION CONTROL**

In addition to the berms discussed for the preferred action, the project team also considered the use of multiterraced islands to achieve erosion protection. These islands would be placed in front of the embankment and would break up wind and wave action much the same way that the proposed berms would. Construction materials would likely be the same. Construction methods would be similar, although island construction would likely require access dredging given the shallow backwater depths. This alternative would potentially increase project costs as well as result in the need to dispose of additional dredged material.

This option of island building was discussed with the resource agencies. Opinions among the resource agencies were mixed as to the appropriateness of building islands for this effort. Through lengthy coordination, it was determined that island construction would not be the recommended alternative for this action. The reason for dropping this alternative is that there might be a greater adverse effect to backwater habitat as a result of island construction. Conversely, the berm alternative affected less aquatic habitat, and a lower quality aquatic habitat. However, island construction may be appropriate and, in fact, preferred for erosion protection at other sites in the future.

### **C. PLACEMENT OF TRADITIONAL ROCK FOR EROSION PROTECTION**

This alternative would involve the placement of new riprap along the embankment. Although it would provide erosion protection, it would not provide the positive environmental benefits of the proposed action. On a regional scale, rock and riprap have been used extensively for erosion protection, channel maintenance actions (e.g., wing dams and closing dams), and other activities. Although submerged rock can provide aquatic habitat, the extensive, wide-spread use of rock throughout the river has probably had some undesirable effects on certain habitat types. Also, exposed rock has minimal value as terrestrial habitat. Lastly, this alternative would not provide for the beneficial use of dredged material. Although the use of rock will remain an effective tool for erosion protection, it is not the preferred alternative in this instance.

### **XI. PROBABLE ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED**

The conversion of backwater habitat to bottomland forest-type habitat at the foot of the existing embankment would be an unavoidable effect of the project. During construction, aquatic flora and benthic fauna that would be buried would be lost. However, the project effects would not be detrimental to the environmental community.

### **XII. RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY**

The preferred alternative would create an improved environmental condition over the existing embankment. It also would serve as beneficial use of material from the Teepeeota dredged material placement site. Overall, these changes would result in an overall improved condition in lower pool 4.

### **XIII. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF PROJECT IMPLEMENTATION**

Changes to the project site resulting from the preferred alternative would be reversible, but would require extensive labor and budget. The time, labor, materials, and money expended on the project construction should be considered irretrievable.

**XIV. RELATIONSHIP TO LAND-USE PLANS**

The proposed project should have no effect on land use in the area.

**XV. COMPLIANCE WITH ENVIRONMENTAL QUALITY STATUTES**

Tabular summation of compliance can be found in table EA-2.

**TABLE 2**

**Relationship of Plans to Environmental Protection Statutes and Other Environmental Requirements**

<b>Federal Policies</b>	<b>Compliance</b>
Archaeological and Historic Preservation Act, 16 U.S.C. 469, <i>et seq.</i>	Full compliance
Clean Air Act, as amended, 42 U.S.C. 1857h-7, <i>et seq.</i>	Full compliance
Clean Water Act, 33 U.S.C. 1251, <i>et seq.</i>	Full compliance
Endangered Species Act, 16 U.S.C. 1531, <i>et seq.</i>	Full compliance
Environmental Effects Abroad of Major Federal Actions (Executive Order 12114)	Not applicable
Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), <i>et seq.</i>	Full compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 601, <i>et seq.</i>	Full compliance
Flood Plain Management (Executive Order 11988)	Full compliance
Land and Water Conservation Fund Act, 16 U.S.C. 460/-460/-11, <i>et seq.</i>	Not applicable
National Economic Development (NED) Plan	Full compliance
National Environmental Policy Act, 42 U.S.C. 4321, <i>et seq.</i>	Full compliance
National Historic Preservation Act, 16 U.S.C. 470a, <i>et seq.</i>	Full compliance
Protection of Wetlands (Executive Order 11990)	Full compliance
Rivers and Harbors Act, 33 U.S.C. 403, <i>et seq.</i>	Full compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, <i>et seq.</i>	Not applicable
Wild and Scenic Rivers Act, 16 U.S.C. 1271, <i>et seq.</i>	Not applicable

**NOTES:**

- a. Full compliance. Having met all requirements of the statute for the current stage of planning (either preauthorization or postauthorization).
- b. Not applicable. No requirements for the statute required; compliance for the current stage of planning.

**A. ENDANGERED SPECIES ACT OF 1973, AS AMENDED**

The project is not expected to affect any endangered species.

**B. NATIONAL HISTORIC PRESERVATION ACT OF 1966, AS AMENDED**

At this time, the proposed project is not expected to affect known archeological or historical resources. This conclusion could be revisited pending the outcome of the cultural resource investigations outlined above.

**C. FEDERAL WATER PROJECT RECREATION ACT**

The proposed project generally would not affect area boat ramps or other recreation projects. The exception might be potential disturbance of the Finger Lakes Pioneer Access boat ramp (owned by MnDNR), if hydraulic dredging is performed. The district would coordinate with the MnDNR to minimize impacts to the extent possible.

**D. FISH AND WILDLIFE COORDINATION ACT**

Project plans have been coordinated with the USFWS, the Minnesota and Wisconsin DNRs, and the Minnesota Pollution Control Agency. Coordination has occurred through phone conversations, e-mail communication, meetings, and this EA.

**E. WILD AND SCENIC RIVERS ACT OF 1968, AS AMENDED**

This portion of the Mississippi River is not listed as wild or scenic.

**F. EXECUTIVE ORDER 11988 (FLOOD PLAIN MANAGEMENT)**

The project would not directly or indirectly induce growth in the floodplain. Therefore, the project, as proposed, is judged to be in full compliance.

**G. EXECUTIVE ORDER 11990 (PROTECTION OF WETLANDS)**

The preferred alternative for this project is judged to be in compliance, since it would improve conditions within an existing wetland, relative to existing conditions. This alternative is deemed to be the least environmentally damaging and most practicable alternative.

**H. CLEAN WATER ACT (SECTIONS 401 AND 404), AS AMENDED**

A 404(b)(1) Evaluation is included in this document and can be found in appendix A. Section 401 Water Quality Certification will be obtained prior to project implementation.

**I. CLEAN AIR ACT, AS AMENDED**

No aspect of the proposed project has been identified that would result in violations to air quality standards.

**J. NATIONAL ENVIRONMENTAL POLICY ACT OF 1970, AS AMENDED**

The completion and public coordination of this EA fulfills NEPA compliance.

**XVI. PUBLIC INVOLVEMENT AND COORDINATION**

Coordination for the project has been and will be maintained with the following State and Federal agencies:

U.S. Fish and Wildlife Service  
Minnesota Pollution Control Agency  
Minnesota Department of Natural Resources  
Wisconsin Department of Natural Resources

Coordination was performed with individuals from the above agencies. Appropriate coordination with state, Tribal and Federal agencies will be conducted as necessary for cultural resource issues. All comments, both formal and informal, from the various agencies have been incorporated into this recommended plan. All letters and formal comments received by the Saint Paul District are contained in appendix B. Additional comments may be forthcoming through review of this EA. The distribution list for this EA is contained in appendix C. In general, this project has the support of all parties coordinated. Appropriate coordination with State and Federal agencies will be conducted as necessary for cultural resource concerns.

## XVII. LITERATURE CITED

Arzigian, C. and K. Stevenson. 2003. *Minnesota's Indian Mounds and Burial Sites: A Synthesis of Prehistoric and Early Historic Archaeological Data*. Publication No. 1. The Minnesota Office of the State Archaeologist, St. Paul.

Benn, David. 1979. Some Trends and Traditions in Woodland Cultures of the Quad-State Region in the Upper Mississippi River Basin. *The Wisconsin Archaeologist*. 3:215-283.

Benn, David W., and Derek V. Lee. 2005. *Erosion Monitoring Program on Archaeological Shoreline Sites Along the Upper Mississippi River on U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers, St. Paul District Lands Pools 3 and 7-10*. Reports of Investigations 1279, Bear Creek Archaeology, Inc., Cresco.

Birmingham, R., C. Mason and J. Stoltman. 1997. Wisconsin Archaeology. *The Wisconsin Archeologist*, 78 (1/2).

Dobbs, Clark A. and Howard Mooers. 1991. *A Phase I Archaeological and Geomorphological Study of Lake Pepin and the Upper Reaches of Navigation Pool 4, Upper Mississippi River, Pierce and Pepin Counties, Wisconsin, Goodhue and Wabasha Counties, Minnesota*. Reports of Investigations Number 44, Institute for Minnesota Archaeology, Minneapolis.

Dunn, R. 1996. *Impacts to Historic Properties in Drawdown Zones at Corps of Engineers Reservoirs*. Technical Report EL-96-7, U.S. Army Corps of Engineers Waterways Experimental Station, Vicksburg.

Florin, F. 2003. Phase I Cultural Resources Investigation and Phase II Testing at Five Prehistoric Sites for the West Newton Chute Dredge Disposal Placement Site, Wabasha County, Minnesota. Reports of Investigations No. 031. Florin Cultural Resource Services, Boyceville.

Harms, G. 1965. *Soil Survey of Wabasha County, Minnesota*. U.S. Department of Agriculture, Soil Conservation Service, Washington D.C.

Jalbert, Andrew, D. Overstreet and J. Richards. 1996. *Cultural Resources Inventory of the Upper Mississippi River, St. Anthony Falls to Pool 10, Wisconsin, Iowa and Minnesota*. Reports of Investigations No. 384, Great Lakes Archaeological Research Center, Inc., Milwaukee.

Jensen, John O. 1992. *Gently Down the Stream: An Inquiry Into the History of Transportation on the Northern Mississippi River and the Potential for Submerged Cultural Resources*. State Underwater Archeology Program, Division of Historic Preservation, State Historical Society of Wisconsin, Madison.

Johnson, Elden and G.J. Hudak. 1975. *Archaeological Survey of 1975 Season Dredge Spoil Deposit Sites in Mississippi River Pools USAF, 1, 2, 3, 4, and 5*. The Science Museum of Minnesota, St. Paul.

Kolb, Michael F. and Robert F. Boszhardt. 2004. A Geoarchaeological Investigation and Overview of Navigation Pool 10, Upper Mississippi River. Reports of Investigations No. 456. Mississippi Valley Archaeology Center at the University of Wisconsin, La Crosse.

Lapham, I. A. 1855. *The Antiquities of Wisconsin, as Surveyed and Described*. Smithsonian Contributions to Knowledge 7. Washington, D.C.

Madigan, Thomas and R. Shermer. 2001. *Geomorphological Mapping and Archaeological Sites of the Upper Mississippi River Valley, Navigation Pools 1-10, Minneapolis, Minnesota to Guttenberg, Iowa*. Reports of Investigations No. 522, Hemisphere Field Services, Inc., Minneapolis.

Nystuen, D.W. 1971. *The Minnesota Trunk Highway Archaeological Reconnaissance Survey: Annual Report 1970*. Minnesota Department of Highways and the Minnesota Historical Society, St. Paul.

O'Mack, Scott. 1991. A Preliminary Cultural Resources Evaluation of a Proposed Channel Cut Near Lock and Dam No. 4, Finger Lakes, Wabasha County, Minnesota. Reports of Investigations Number CENCS-PD-ER-51, U.S. Army Corps of Engineers, St. Paul District, St. Paul.

O'Mack, S. and R. Withrow. 1989. *Phase II Archaeological Testing of the Petersen (21WB51) and Rose (21WB52) Sites, Wabasha County, Minnesota*. Reports of Investigations Number CENCS-PD-ER-35, U.S. Army Corps of Engineers, St. Paul District, St. Paul.

Overstreet, David, R. Fay, C. Mason and R. Boszhardt. 1983. Literature Search and Records Review of the Upper Mississippi Basin: St. Anthony Falls to Lock and Dam 10. Reports of Investigations No. 116, Great Lakes Archaeological Research Center, Inc., Milwaukee.

Penman, J.T. 1984. *Archaeology of the Great River Road: Summary Report*. Wisconsin Department of Transportation, Archaeology Report 10, Madison.

Pearson, Marjorie. 2003. National Register Evaluation of the Channel Structures of the Upper Mississippi River, Pools 1-10 (From Saint Paul, Minnesota to Guttenberg, Iowa). Hess, Roise and Company, Minneapolis.

Perkl, Bradley E. 2002. King Coulee (21WB56): A Multicomponent Habitation Site on Lake Pepin, Wabasha County, Minnesota. *The Minnesota Archaeologist* 61:62-116.

2005. *St. Paul District Bank Erosion Sites*. Presentation at the Island and Shoreline Erosion Workshop, Upper Mississippi-Illinois Waterway Navigation and Ecosystem Restoration Program. Rock Island, Illinois.

Petterson, Less, William Yourd and LeRoy Gonsior. 1988. *Minnesota Trunk Highway Archaeological Reconnaissance Survey Annual Report-1987*. Minnesota Historical Society, St. Paul.

Pleger, T. 1997. A Phase I Archaeological Survey of the Floodplain of Pool Nos. 5, 5A, and 6 of the Upper Mississippi River Valley. Reports of Investigations No. 248. Mississippi Valley Archaeology Center at the University of Wisconsin, La Crosse.

Theiling, C.H., C. Korschgen, H. De Haan, T. Fox, J. Rohweder, and L. Robinson. 2000. Habitat Needs Assessment for the Upper Mississippi River System: Technical Report. U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, Wisconsin. Contract report prepared for U.S. Army Corps of Engineers, St. Louis District, St. Louis, Missouri. 248 pp. + Appendixes A to AA.

Theler, James L., and Robert F. Boszhardt. 2003. *Twelve Millennia: Archaeology of the Upper Mississippi River Valley*. University of Iowa Press, Iowa City.

Thomas, C. 1894. *Report on the Mound Explorations of the Bureau of American Ethnology*. Twelfth Annual Report of the Bureau of American Ethnology 1890-1891. Smithsonian Institution, Washington, D.C.

U.S. Geological Survey. 1999. Ecological Status and Trends of the Upper Mississippi River System 1998: A Report of the Long Term Resource Monitoring Program. U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, Wisconsin. April 1999. LTRMP 99-T001. 236 pp.

WEST. 2000. Upper Mississippi River and Illinois Waterway Cumulative Effects Study. Volumes I and II. Submitted to the U.S. Army Corps of Engineers, Rock Island District. June 2000.

Winchell, N.H.  
1911 *The Aborigines of Minnesota*. The Minnesota Historical Society, St. Paul.





ST. PAUL DISTRICT, CORPS OF ENGINEERS

REPLY TO  
ATTENTION OF

## DEPARTMENT OF THE ARMY

190 FIFTH STREET EAST  
ST. PAUL, MN 55101-1638

Environmental and Economic Analysis Branch  
Planning, Programs, & Project Management Division

### FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, the St. Paul District, Corps of Engineers has assessed the impacts of the following project:

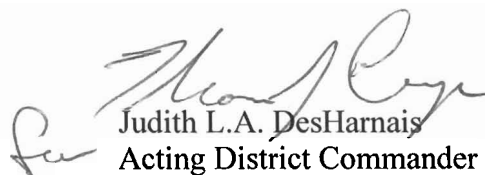
EMBANKMENT REHABILITATION, MAINTENANCE  
AND ENVIRONMENTAL RESTORATION  
LOCK AND DAM 4 EMBANKMENT  
UPPER MISSISSIPPI RIVER, RIVER MILE 753, WABASHA COUNTY, MINNESOTA

The project is proposed for the embankment at Lock and Dam 4 near Wabasha, Minnesota. The intent of the project is to provide an environmentally preferred form of erosion protection to the embankment; while also providing for beneficial use dredged material. The proposed project involves the construction of a multi-terraced berm which would extend from the existing berm out 100 to 150 feet into Peterson Lake. The berm would be constructed of sand (i.e., dredged material), capped with fine material, and planted with desirable vegetation. The proposed features would improve habitat conditions over existing conditions at the embankment, and provide for beneficial use of dredged material.

This Finding of No Significant Impact is based on the following factors: the proposed project would have long-term beneficial impacts on wildlife and fishery resources; the project would have no long-term impacts on the aesthetic/recreation environment; and the project would have no impacts on the cultural environment. Moreover, actions will be taken to ensure any short-term social or safety issues that could arise during project construction would stay below significant levels.

The environmental review process indicates that the proposed action does not constitute a major Federal action significantly affecting the quality of the environment. Therefore, an environmental impact statement will not be prepared.

25 Aug 06  
25 August 2006

  
Judith L.A. DesHarnais  
Acting District Commander



**A**

**P**

**P**

**E**

**N**

**CLEAN WATER ACT  
SECTION 404(b)(1) EVALUATION**

**D**

**I**

**X**

**A**

**EMBANKMENT REHABILITATION, MAINTENANCE  
AND ENVIRONMENTAL RESTORATION**

**LOCK AND DAM 4 EMBANKMENT  
UPPER MISSISSIPPI RIVER, RIVER MILE 753**

**WABASHA COUNTY, MINNESOTA**

**CLEAN WATER ACT  
SECTION 404(B)(1) EVALUATION**

**JUNE 2006**

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**EMBANKMENT REHABILITATION, MAINTENANCE  
AND ENVIRONMENTAL RESTORATION**

**LOCK AND DAM 4 EMBANKMENT  
UPPER MISSISSIPPI RIVER, RIVER MILE 753**

**WABASHA COUNTY, MINNESOTA**

**CLEAN WATER ACT  
SECTION 404(B)(1) EVALUATION**

**I. PROJECT DESCRIPTION**

**A. LOCATION**

The proposed project area is along and adjacent to the lock and dam 4 embankment, Upper Mississippi River river mile (RM) 753 in Wabasha County, Minnesota, across the river from Alma, Wisconsin (figures 1 through 3 in the environmental assessment (EA)).

**B. GENERAL DESCRIPTION**

The St. Paul District Corps of Engineers proposes to construct two berms immediately in front of the existing embankment at lock and dam 4 (see figure 2). Both berms would extend off the existing embankment out into Peterson Lake. They would include multiple sand terraces that would be capped with fine material and vegetated to provide both positive habitat values and protection against erosion. Low control pool (LCP) elevation is 667.0 feet msl (above mean sea level). The terraces would have elevations of 668.5, 670.5, 673.5, and 677.0 feet msl (top of the existing embankment). The lowest terrace would be vegetated with willow trees; the next terrace (670.5) would be vegetated with hard mast trees, and the top two terraces would be planted with grasses. Sloped areas also would be capped and vegetated.

**C. AUTHORITY AND PURPOSE**

The River and Harbor Act of 1930 authorized the construction and maintenance of the current 9-foot navigation channel, including the locks and dams. The purpose of this project is to implement embankment protection measures associated with the lock and dam 4 embankment. These measures are proposed to protect the embankment from erosion in a manner that is more environmentally preferred than traditional rock placement.

The purpose of this document is to comply with Section 404 of the Clean Water Act pertaining to guidelines for placement of dredged or fill material into the waters of the United States. This evaluation, in conjunction with the EA, will assist in analysis of the alternatives for this project, resulting in the Base Plan (Federal Standard). Further, this evaluation will provide information and data to the State water quality certifying agency demonstrating compliance with

State water quality standards and aid in the decision-making process concerning State 401 water quality certification.

#### **D. DESCRIPTION OF DREDGED AND FILL MATERIAL**

##### 1. General Characteristics and Source of Material

Sand for berm construction would come from the Teepeeota Point dredged material placement site, which is used for storing material removed during channel maintenance dredging. Fine material would be obtained from one of two locations: either from a wetland area near the embankment; or from Clear Lake immediately below the embankment (EA figures 1 and 3). The reasons why multiple methods/locations for obtaining fine materials are under consideration is discussed in the EA. For the reasons given, this 404(b)(1) evaluation will discuss issues and effects associated with obtaining fine material both from the wetland area, as well as Clear Lake. Fine material would be obtained from a wetland by “scraping” the top layer of soil and transporting it to the embankment for placement. Alternatively, fine material would be obtained from Clear Lake by hydraulic dredging, and pumping to the embankment. Limestone rock would be obtained from a local quarry.

##### 2. Chemical Characteristics of Source of Material

Sand for berm construction originates from main channel dredging in lower pool 4. This material typically is considered clean and uncontaminated (St. Paul District Environmental Impact Statement (EIS) for Channel Management Plan; 1997). Fine material would originate from a wetland scrape within the floodplain. Because this area is adjacent to existing farmland, it may contain trace amounts of pesticides. Alternatively, fine material would be obtained from Clear Lake. Material from Clear Lake could potentially contain contaminants, though the risk for this appears low. The District would perform an analysis of sediment samples from Clear Lake for contaminants before any dredging would occur. These results would be coordinated with the appropriate resource agencies to ensure compliance with applicable standards and regulations. Rock would be brought from a local quarry. It would generally be considered inert and would not contribute to contaminants.

##### 3. Quantity of Fill Material

The total quantities of various fill materials that would be used for berm construction are estimated as follows: about 31,400 cubic yards of sand for the western berm and 27,100 cubic yards of sand for the eastern berm (about 58,500 cubic yards of sand in total), about 2,400 cubic yards of fine material for the western berm and 3,700 cubic yards of fines for the eastern berm (about 6,100 cubic yards of fine material in total), and about 3,075 cubic yards of rock for the western berm and 1,350 cubic yards of rock for the eastern berm (about 4,425 cubic yards of rock in total).



## **E. DESCRIPTION OF THE PROPOSED DISCHARGE SITES**

### **1. Location and Size**

The area proposed for placement of the berms would start at the top of the existing embankment and extend into Peterson Lake. Total footprint area of the western berm would be about 4.0 acres, while the eastern berm would be about 5.6 acres.

### **2. Types of Habitat**

This area would be considered disturbed habitat (riprap and sand from the existing embankment) and backwater lake habitat. Two berms would be created – each between the existing culverts already within the embankment.

### **3. Timing and Duration**

Construction for this effort would take 1 to 2 or more years, depending on when construction is initiated and which method is utilized for obtaining fine material. Large terminal groins would be constructed first at the end of each berm. Then, if the fine material comes from wetland scrapes, sand would be brought to the embankment, and placed to create the four berm terraces. Fine material would then be transported from the scrape site and placed on top of the terraces. Once adequate fine material is placed, the embankment would be seeded with a cover crop for stability. The embankment would be planted with desired vegetation the following season.

If fine material originates from hydraulic dredging, the construction sequence will differ. The exact form and sequence of this construction is still uncertain, but would likely follow this approach. First, the sand brought to the embankment will be used to construct a large containment area. The containment area would generally cover the same footprint as that of the permanent berms. Sand berms would ring the outside edge of the containment facility and tie into the existing embankment. Then, fine material would be hydraulically dredged and pumped into the containment facility. The material would then sit for a period to decant and dry enough to continue construction. This would likely take several weeks, and may require that construction be suspended over the fall and winter, and resume the following spring/summer. Once the fine material has dried adequately, the fine material would be pushed off to one side of the containment area. Then, sand used to construct the containment area would be used to construct the terraces. Once the terraces are shaped, the fine material would be spread over the terraces, and a cover crop would be planted for stability. The embankment would be planted with desired vegetation the following season.

## **F. DESCRIPTION OF THE PROPOSED SCRAPE SITE**

### **1. Location and Size**

The area proposed for wetland scrapes is about 2 ½ miles northwest of the lock and dam 4 embankment. The area is on the U.S. Fish and Wildlife Service (USFWS) Upper Mississippi River Wildlife and Fish Refuge. Total footprint area of the proposed scrape is 2 acres. The temporary stockpile site for fine material would likely be about 1 acre. The temporary access road would likely occupy about 1 acre.

2. Types of Habitat

This area would be considered wetland habitat (wet meadow or seasonally flooded area). Most of the area is dominated by reed canary grass, with the exception of some shrubs and a few small trees.

3. Timing and Duration

Construction for the scrapes is scheduled to be completed during the same season as the berm. This construction would include removing fine material, as well as removing the temporary access road and any other support structure.

**G. DESCRIPTION OF THE PROPOSED HYDRAULIC DREDGING SITE**

1. Location and Size

The area proposed for hydraulic dredging is in Clear Lake immediately below the lock and dam 4 embankment. The area is on the U.S. Fish and Wildlife Service (USFWS) Upper Mississippi River Wildlife and Fish Refuge. Total footprint area of the proposed dredging activities has yet to be determined, and would depend on the desired depth of dredging. However, the area for dredging would probably be less than 5 acres.

2. Types of Habitat

This area would be considered backwater lake habitat. Most of the area is extremely shallow, and of limited value for fish use during all seasons. Some aquatic vegetation likely grows within Clear Lake.

3. Timing and Duration

Dredging of Clear Lake would be completed after sand is brought in to complete the containment facility. Once material is placed within the enclosed containment area it will need several weeks to decant and dry enough to facilitate spreading. As a result, the fine material may remain in the containment area through the winter till the following field season.

**H. DESCRIPTION OF FILL AND DREDGED MATERIAL PLACEMENT METHODS**

Sand for berm construction would come from the Teepeeota Point dredged material placement site. Sand would be brought by barge to the storage yard area adjacent to the west end of lock and dam 4. Trucks would then move the sand and place it along the upstream side for berm construction. Heavy equipment would push sand outward, shaping the berms to the desired contours.

Fine material would be obtained either from a wetland area near the embankment, or from Clear Lake (figures 1 and 3). Material would be obtained from the wetland by “scraping” the top layer of soil with heavy equipment. This would require constructing a temporary access road. Material removed from the wetland scrape would be placed in a temporary stockpile site. Fine material would be stockpiled for a period of a few weeks to dry. Material would then be moved by truck to the embankment site. Heavy equipment would push the fine material into a 6-inch layer across the top surface of the entire berm.

Alternatively, material would be obtained from Clear Lake by hydraulically dredging lake sediments. Material would be pumped to the containment area at the embankment. Fine material would be left for a period of several weeks to dry. Heavy equipment would then push the fine material off to one side of the proposed berm site. Sand used to construct the containment area would be shaped into the proposed terraces. Then, the fine material would be spread into a 6-inch layer across the top surface of the entire berm.

Rock would be brought directly in for placement by barge or would be delivered by barge to the storage yard and transported by truck to areas along the north side of the embankment. Heavy equipment would place the rock to form the groin structures along the front and sides of the proposed berms.

## **II. FACTUAL DETERMINATIONS**

### **A. PHYSICAL SUBSTRATE DETERMINATIONS**

#### **1. Substrate Elevation and Slope**

Flat LCP elevation at the embankment is 667.0 feet msl. The terraces would have elevations of 668.5, 670.5, 673.5, and 677.0 feet msl (top of embankment). The terrace slopes would range between 5:1 and 10:1 from one elevation to the next.

#### **2. Sediment Type**

Sand material for embankment construction would qualitatively be described as medium to fine sand, with silts and clays comprising less than 2 percent of the sediment. Material from the scrape and Clear Lake would likely be considered silts and clays. Rock would be limestone from a local quarry.

#### **3. Dredged/Fill Material Movement**

The berms would be constructed to avoid impacts on the existing culverts that pass through the embankment. Both berms would include a large terminal groin at the end to minimize movement of sand around the end of the structure. In addition, smaller groins would be placed along each berm for additional stability. Fine material also would be placed on top of the sand and vegetated. Collectively, these groins, fine material capping and vegetation should stabilize the berms and minimize material migration back to the river or through existing culverts and into the Finger Lakes below the embankment.

#### 4. Actions Taken to Minimize Impacts

Berm stability should minimize impacts that would result from migration of sand and fine materials. Thus, impacts should be minimal.

### **B. WATER CIRCULATION AND FLUCTUATION**

#### 1. General Water Chemistry

The proposed action would not have any substantial long-term effects on water quality in the Mississippi River relative to existing conditions. The proposed action would not result in long-term changes in water chemistry, water temperature, pH, clarity, color, odor, taste, dissolved gas levels, nutrient levels or organic matter influxes relative to existing conditions. Temporary increases in turbidity may be the only noticeable change in water quality and would only be expected to occur during construction. These increases would be more pronounced if hydraulic dredging is pursued to obtain fine materials. However, the changes would still be temporary, and not of substantial concern. Impacts on the human population concerning the suitability of this water body for human consumption, recreation, and aesthetics would be negligible or nonexistent.

#### 2. Current Patterns and Water Circulation

The proposed action would not have any substantial effects on current patterns and circulation relative to existing conditions. The berms would not substantially affect water movements within Peterson Lake above the embankment. The berms also would have minimal, if any, effect on water passing through the existing culverts in the embankment.

The wetland scrapes would trap water and create shallow, ephemeral pools, which are considered desirable. This action should not have any appreciable effect on adjacent wetland areas.

Hydraulic dredging would result in return water exiting the containment area during periods of hydraulic dredging. The amount of water would not be significant enough to substantially change current patterns within Peterson Lake.

#### 3. Sedimentation Patterns

The proposed action would not have any substantial effects on sedimentation patterns within Peterson Lake above the embankment or on the Finger Lakes below the embankment. Hydraulic dredging would increase water depths in Clear Lake, and reverse some of the effects from long term sedimentation. Return water exiting the containment area above the embankment would not result in significant transport of sediment to Peterson Lake.

4. Flood Profiles

The proposed action would have no appreciable effect on the 100-year flood profile within this river reach.

5. Actions Taken to Minimize Impacts

Impacts would be minimized through the use of best management practices during construction. The locations of the berms were carefully chosen to work around the existing culverts. The design of the berms should minimize any movement of material from the berms, through the culverts, and into the Finger Lakes downstream of the embankment. Movement of material was one of the primary concerns associated with these structures.

**C. SUSPENDED PARTICULATE/TURBIDITY DETERMINATIONS**

1. Effects on Suspended Particulates and Turbidity

A temporary increase in turbidity may be noticeable during construction. Turbidity increases would be even more noticeable should hydraulic dredging be utilized for obtaining fine material. However, turbidity would subside following construction. The proposed actions would not have long-term effects on turbidity levels, suspended particulate levels, light penetration, dissolved oxygen, toxic metals, organic influxes, pathogens, and aesthetics relative to existing conditions.

2. Effects on Physical and Chemical Properties of the Water Column

*Light Penetration* – Increased turbidity during construction might cause a slight reduction in light penetration. However, it should not be an appreciable long-term effect.

*Dissolved Oxygen* – The project would cause no appreciable change in dissolved oxygen levels.

*Toxic Metals and Organics* – No appreciable change in contaminant levels would be anticipated from this project.

*Aesthetics* – Short-term impacts would occur during construction. However, following construction, the project area would probably have greater aesthetic value over existing embankment conditions.

### 3. Actions Taken to Minimize Impacts

Impacts will be minimized through the use of best management practices during construction.

## **D. CONTAMINANT DETERMINATIONS**

The project would not be expected to introduce hazardous or toxic substances into the waters of the United States or result in appreciable increases in existing levels of toxic materials. Any construction would look to use inert and corrosion-resistant materials. Material hydraulically dredged from Clear Lake could potentially contain contaminants, though the risk for this appears low. The District would perform an analysis of sediment samples from Clear Lake for contaminants before any dredging would occur. These results would be coordinated with the appropriate resource agencies to ensure compliance with applicable standards and regulations.

## **E. AQUATIC ECOSYSTEM AND ORGANISMIC DETERMINATIONS**

### 1. Effects on Plankton and Necton

No significant impacts are anticipated. The minor changes to aquatic habitat proposed would not be expected to substantially affect plankton and nekton communities within the planktonic drift of the Upper Mississippi River.

### 2. Effects on Benthos

The placement of the berms would bury the benthic biota within the project footprint. The stability of the berms should limit any long-term impacts to adjacent biota through material migration. Dredging activities in Clear Lake would kill any benthic invertebrates located within the dredge cut.

### 3. Effects on Fish

No long-term adverse effects would be expected from this project. The placement of the berms would displace fish from current aquatic habitat within the proposed project footprint. However, the habitat created along the new berms may be better for fishery resource use than existing conditions along the embankment. Dredging activities in Clear Lake could displace some fish, though effects would be temporary. However, hydraulic dredging would result in increased depths in Clear Lake, and greater long-term fish use.

### 4. Effects on Wildlife

Wildlife normally present might temporarily avoid the project area during construction. However, no long-term adverse impacts on wildlife would be expected. In fact, the proposed berms would be an improvement for wildlife over the existing riprap. The wetland scrapes also are preferred to improve wildlife habitat.

5. Effects of Wetland Scrapes

The flora and fauna living within the top few feet of topsoil would be displaced and likely killed. However, this area is dominated by reed canary grass, and the scrape action is considered a habitat improvement. Some clearing of shrubs and small trees might be associated with the temporary access road needed for the scrapes. Overall, the wetland scrapes are considered a habitat improvement over the existing condition. The scraped area would fill with water during periods of high river stage and would provide improved wetland habitat.

6. Effects on Aquatic Food Web

Although benthos within the footprint area would be eliminated, no significant impacts are anticipated to upper trophic levels within the aquatic food web. The proposed action should not cause or establish the proliferation of any new undesirable aquatic species that may replace or affect resident species. If any such proliferation should occur, it would not be caused solely by the proposed action.

7. Effects on Special Aquatic Sites

Sanctuaries and Refuges: Both the proposed berm creation, wetland scrapes and hydraulic dredging would occur within the USFWS Upper Mississippi River Wildlife and Fish Refuge. This action has been coordinated closely with the USFWS. USFWS prefers berm creation over traditional riprap. The area proposed for placement of the berms would start at the top of the existing embankment and extend into Peterson Lake. Total footprint area of the western berm would be about 4.0 acres, while the eastern berm would be about 5.6 acres; most of this acreage would occur within the refuge. The USFWS desires both hydraulic dredging and the wetland scrapes, though hydraulic dredging is their preferred option. The scrapes would provide topsoil for the berm and would also serve as a management action and habitat improvement measure for the refuge. Hydraulic dredging would provide capping material, and improve habitat conditions for fish in Clear Lake. The USFWS has indicated a special use permit would be granted for this project.

Wetlands, Mud Flats, and Vegetated Shallows: The berms would be constructed on top of the existing embankment, and extend out into Peterson Lake. Thus, the berms would convert shallow aquatic habitat to floodplain forest habitat, and would likely cover shallow aquatic vegetation. However, the aquatic areas affected would generally be sandy and shallow (e.g., less than 1.5 feet deep), and generally of limited habitat value. Conversely, the bottomland forest habitat created should be of greater overall quality for that type of habitat. Thus, this trade off is considered acceptable for accomplishing this project alternative, which is environmentally preferred over traditional rip rap.

The wetland scrapes, including the access road and temporary stockpile site, would be accomplished within an area of existing wetland. The area would be considered wet meadow or seasonally flooded area. However, this method is considered acceptable for the following reasons. First, the USFWS refuge has suggested the scrapes as a way to create topographic diversity. The scrapes would hold water and provide habitat for various wildlife. The area would still be a wetland and would provide better habitat than existing conditions. The area is currently dominated by reed canary grass. Also, the access road and stockpile site would be temporary. They would be removed following construction, and the area of these features would generally be returned to similar contours as preproject. These tradeoffs are considered acceptable to accomplish the scrapes. This action is considered a long-term benefit.

8. Threatened and Endangered Species

As discussed above and within the EA, no significant impacts on the endangered Higgins' eye pearly mussel (*Lampsilis higginsii*) or the bald eagle (*Haliaeetus leucocephalus*) would be expected. The USFWS concurred with this conclusion through the coordination process (appendix C).

9. Actions Taken to Minimize Impacts

Impacts will be minimized through the use of best management practices during construction. As already discussed above, site locations for both berms and the wetland scrape were selected to minimize any potential impacts on valuable habitat. The impacts noted above are considered acceptable trade-offs to achieve the benefits from the proposed project.

**F. PROPOSED PLACEMENT SITE DETERMINATIONS**

1. Mixing Zone Determinations

A mixing zone is that volume of water at a placement site or discharge site required to dilute contaminant concentrations associated with a discharge of dredged material to an acceptable level. Given the nature of the construction materials, the proposed actions would not substantially contribute to contaminant levels within the river relative to base conditions.

2. Compliance with Applicable Water Quality Standards

The proposed activities would not violate State water quality standards. Section 401 water quality certification would be obtained from the State of Minnesota prior to implementation.

3. Potential Effects on Human-Use Characteristics



Implementation of the preferred alternative for this project would have no significant long-term effect on municipal or private water supplies, recreational or commercial fisheries, parks, national monuments, or other similar preserves. Water-related recreation and commercial fisheries in the immediate area of the project might be temporarily disrupted during construction.

**G. DETERMINATION OF CUMULATIVE EFFECTS ON THE AQUATIC ECOSYSTEM**

The preferred alternative would not cause any substantial impacts on the aquatic ecosystem relative to existing conditions. In fact, this action is preferred by the environmental community over other alternatives. Further discussion on cumulative effects can be found above within the EA.

**H. DETERMINATION OF SECONDARY EFFECTS ON THE AQUATIC ECOSYSTEM**

No secondary effects on the aquatic ecosystem are anticipated. This determination is subject to reevaluation if warranted by Federal, State, or local agency comment as well as comments from the interested public.


**FINDINGS OF COMPLIANCE OR NONCOMPLIANCE  
WITH THE RESTRICTIONS ON PLACEMENT**

**ALTERNATIVE EMBANKMENT PROTECTION  
MEASURES AT THE  
LOCK AND DAM 4 EMBANKMENT  
UPPER MISSISSIPPI RIVER, RIVER MILE 753**

**CLEAN WATER ACT  
SECTION 404(B)(1) EVALUATION**

1. No significant adaptations of the 404(b)(1) Guidelines were made relative to this evaluation.
2. Alternatives that were considered in addition to the proposed action were as follows:
  - No Action
  - Traditional Riprap
  - Island Creation
3. Certification under Section 401 of the Clean Water Act would be obtained from Minnesota prior to implementation.
4. The project would not introduce hazardous or toxic substances into the waters of the United States or result in appreciable increases in existing levels of toxic materials.
5. No significant impact on State or federally listed threatened or endangered species is anticipated from this project.
6. No municipal or private water supplies would be affected. The project would have no significant adverse impacts on recreational or commercial fishing. No significant adverse changes to the ecology of the river system would result from this action.
7. No contamination of the river is anticipated. The proposed actions would cause only minimal adverse environmental effects when performed and would have only minimal cumulative adverse effects on the environment.
8. The proposed action is less expensive and environmentally preferred over other alternatives. Thus, no other practicable alternatives have been identified. The proposed actions are in compliance with Section 404(b)(1) of the Clean Water Act, as amended. The proposed actions would not have significant impacts on water quality and would improve the integrity of an authorized navigation system.

25 Aug 06  
25 August 2006

  
Judith L.A. DesHarnais  
for Acting District Commander

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**ENDANGERED SPECIES ACT CORRESPONDENCE**

**D**

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**B**

Stefanik, Elliott L MVP

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Subject: ESA Coordination for L&D 4 Embankment Demo Project

Dear Elliott:

This responds to your e-mail below requesting information on federally threatened and endangered species for the Lock and Dam 4 Embankment Demonstration Project on the Upper Mississippi River near Alma, Wisconsin.

We concur with your determination that the above referenced project will not affect any federally listed or proposed threatened or endangered species or adversely modify their critical habitat. This precludes the need for further action on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. However, if the project is modified or new information becomes available which indicates that listed species may occur in the affected area, consultation with this office should be reinitiated.

We appreciate the opportunity to comment and look forward to working with you in the future. If you have questions regarding our comments, please call me at (612) 725-3548, extension 207.

Gary J. Wege  
Fish & Wildlife Biologist

FWS ID # 12574

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Subject  
ESA Coordination for L&D 4  
Embankment Demo Project

To  
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.mil>, "Devendorf, Randall D MVP"  
<randall.d.devendorf@mvp02.usace.ar  
my.mil>

Gary,

This is a request for ESA coordination with the proposed Embankment Protection Demo Project at L&D 4. I believe we can coordinate ESA issues through e-mail. If you need a formal letter, please let me know.

As you know, the St. Paul District is looking at constructing a demonstration project for embankment protection at L&D 4. This protection will include a "berm" structure running along the upstream side of the embankment, and would protect the embankment from wind and wave action. Construction activities would be limited to the immediate embankment area, and possibly Clear Lake of the Finger Lakes (this area could potentially serve as a source for fine material capping). I've attached a proposed plan for your review.

The District is preparing an Environmental Assessment and a 404 Evaluation for these proposed actions. In accordance with the Endangered Species Act (ESA), the District is contacting you for specific comments on the potential impacts of the proposed actions on federally listed species.

There are two federally protected species that may be found in the general project area: the bald eagle (*Haliaeetus leucocephalus*) and the Higgins' eye pearl mussel (*Lampsilis higginsii*). However, Higgins' Eye have not been collected recently in lower Pool 4, thus no project-related effects would be anticipated to this species. For bald eagle, construction activities would be limited to the embankment area, and possibly Clear Lake of the Finger Lakes. Coordination with the USFWS refuge indicated the presence of one bald eagle's nest in the vicinity of the embankment (map included in the e-mail attached below). Review of this map identifies this nest as being well over a half-mile from the proposed construction zone. Thus, no project-related effects would be anticipated to this species as well. It is the District's determination that there would be no project-related effects to the Higgins' eye pearl mussel or the bald eagle as a result of this project.

If you would, please provide feedback on our determination. Also, let us know what else we need to provide to fulfill our requirements for this project under the federal ESA. Thanks.

Stefanik, Elliott L MVP

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**From:** Gary\_Wege@fws.gov  
**Sent:** Tuesday, May 02, 2006 11:40 AM  
**To:** Stefanik, Elliott L MVP  
**Subject:** Re: L/D 4 Embankment Project

**Attachments:** Mussel Surveys.pdf



Mussel Surveys.pdf  
(2 MB)

Elliott:

This responds to your e-mail below dated May 2, 2006, requesting information on federally threatened and endangered species for the proposed Lock and Dam 4 Embankment Project on the Upper Mississippi River.

We concur that there are no federally threatened or endangered species in the affected area based your the mussel survey, previous mussel surveys in Lower Pool 4, and absence of nesting eagles. This precludes the need for further action on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. However, if the project is modified or new information becomes available which indicates that listed species may occur in the affected area, consultation with this office should be reinitiated.

We appreciate the opportunity to comment and look forward to working with you in the future. If you have questions regarding our comments, please call me at (612) 725-3548, extension 207.

Gary J. Wege  
Fish & Wildlife Biologist

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To  
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cc  
Subject  
L/D 4 Embankment Project

Gary:

Given that we've delayed in getting our EA out, and field conditions are favorable, we did a mussel survey at the L/D 4 Embankment Project area. I've attached a summary of our results below. I will send out another e-mail to the larger group, but wanted to coordinate with you for specific T&E issues.

Our sampling was done last Friday (4/28) by pulling our usual mussel sled. Transects were about 100-130 yards in length. Consider the map a general indication of transect location - we had trouble with our GPS so the transect locations aren't exact. But given how close we were to the embankments, the existing Culverts, and other reference points, I think the map is pretty close.

The results (both species composition and density distribution) of this survey is similar to what we found during the pollywogging/relocation effort that was done for the Finger Lakes project in 1992. It does not appear that habitat conditions or species composition has changed much since then. Few mussels were collected from Transects 1-3. Although mussels were collected at Transect 4, we did not collect any Higgins Eye. Thus, we believe there would be no effect on endangered mussel species.

Let me know if you concur with this conclusion.

I'll send out an e-mail to the larger group later today letting them know what we did, and our observations. I'll specifically discuss the results with MnDNR (Mike D. and Scot J.) to see what their opinions are. We're scratching our heads a little bit with Transect 4. We've got some initial thoughts, but will certainly take other input.

**A**

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**N**

**DISTRIBUTION LIST**

**D**

**I**

**X**

**C**

## **DISTRIBUTION LIST FOR ENVIRONMENTAL ASSESSMENT**

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<u>First Name</u>	<u>Last Name</u>	<u>Agency or Optional Address</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip Code</u>
Randy	Anderson		S1772 CTH N	Alma	WI	54610
Wayne	Anderson		805 S 2nd Street	Alma	WI	54610
Max	Bachhuber		903 Riverview Drive	Alma	WI	54610
Larry & Lois	Balk		801 North Main Street	Alma	WI	54610
David	Bautch		807 South Main Street	Alma	WI	54610
Alyssa	Brakke		307 South 2nd Street	Alma	WI	54610
Brian	Brecka	Wisconsin DNR	Courthouse, PO Box 88	Alma	WI	54610
Charlene	Brovold		P.O. Box 402	Alma	WI	54610
Sherri L.	Collins		200 S 2nd St, PO Box 192	Alma	WI	54610
Shane	Crawford	Buffalo Cty	407 South 2nd Street	Alma	WI	54610
Sandra	Ebert	Buffalo Cty	407 South 2nd Street	Alma	WI	54610
Leo	Eisenhutt		315 Vista Drive	Alma	WI	54610
Carl	Erwin		904 South 2nd Street	Alma	WI	54610
		Great River Harbor Marina				
Hale	Evans		S2221 State Rd.35	Alma	WI	54610
Don R.	Finley, Jr.		130 Vista Drive	Alma	WI	54610
Aries	Fluekiger		S1610 Co. Road I	Alma	WI	54610
Donald	Ganz		W1936 Badland RD	Alma	WI	54610
Alan	Gleither		S1841 Risch Valley RD	Alma	WI	54610
Hal & Diane	Goeldner		280 N State Road 35	Alma	WI	54610
Matt	Goeldner		280 N State Road 35	Alma	WI	54610
Ronald	Goeldner		P.O. Box 281	Alma	WI	54610
Gregory S.	Green		S1452 CTHI	Alma	WI	54610
Dean L.	Haign		314 Vista DR	Alma	WI	54610
Gale O.	Hoch		S2028 Hickory	Alma	WI	54610
Orvin	Kaste		Box 364	Alma	WI	54610
Frank & Martha	Kuhlman		1111 S. Second Street	Alma	WI	54610
Dave	Linderud	WI DNR	County Courthouse	Alma	WI	54610
Tim	Lodermeier		405 Vista DR	Alma	WI	54610
Jim	Lyons		1301 Riverview Drive	Alma	WI	54610
Andy	Maday		W2012 Windsong	Alma	WI	54610
Michelle	Marron	Wisconsin DNR	Courthouse, PO Box 88	Alma	WI	54610
Lon	Meixner	USACE	Lock and Dam 4	Alma	WI	54610
Mark	Noll		S1917 Buena Vista RD	Alma	WI	54610
Robert	Oium		314 North Main	Alma	WI	54610
Bergie	Ritscher		51630 State Road 35	Alma	WI	54610
Janet	Runions		S1610 Cty RD N	Alma	WI	54610
Joan	Runions		P.O. Box 194	Alma	WI	54610
Kenny	Salwey		S1433 Pleasant View	Alma	WI	54610
Blanche	Schneider		1001 South 2nd Street	Alma	WI	54610
Phyllis	Schneider		1009 South Main Street	Alma	WI	54610
Mary Beth	Scrow		P.O. Box 382	Alma	WI	54610

Captain Art	Wilson		52221 State Hwy 35	Alma	WI	54610
Jon	Wisneski	Buffalo Cty Alma Public Library	W1835 Cty Trunk Hwy S. 312 Main Street	Alma	WI	54610
		Alma Rod & Gun Club	PO Box 444	Alma	WI	54610
		Buffalo County Extension	Courthouse, PO Box 276	Alma	WI	54610
		West Central Chapter NWTF	51567 County Road I	Alma	WI	54610- 8226
Marvin	Her	Whitewater Sportsmen's Club	Box 52	Altura	MN	55910
Dan	Stinnett	U.S. Fish & Wildlife Service	4101 East 80th Street	Bloomington	MN	55425- 1665
Gary Edward	Wege Annuik	U.S. Fish & Wildlife Service	4101 East 80th Street 450 W 24th Street	Bloomington Buffalo City	MN WI	55425- 1665 54622
Barry Deb	Auer Barth	Buffalo City Clerk	1133 S River Road City Hall	Buffalo City Buffalo City	WI WI	54622- 7309 54622
Dave Brian Bruce Clifford	Becker Bjorke Burmeister Burmeister		1025 N Front Street, Box 233 1368 S River Road 281 W 12th Street	Buffalo City Buffalo City Buffalo City Buffalo City	WI WI WI WI	54622 54622 54622 54622
Roger Steven	Burmeister Burmeister		111 W 14th Street 165 W 9th Street	Buffalo City Buffalo City	WI WI	54622- 7113 54622
Larry	Comero		57 W 8th Street	Buffalo City	WI	54622- 7102
Jack Steven John Matt Gene Wes Milford Jack Carl	Deneff Engler Fandrey Foust Glomski Herbst Herreid Hilt Hinz		1113 River Road S 725 N Humboldt Street 1372 S River Road 127 W 6th Street 81 - 3rd Street 1402 S River Road 1351 S River Road 1400 S. River Road 1151 S River Road	Buffalo City Buffalo City Buffalo City Buffalo City Buffalo City Buffalo City Buffalo City Buffalo City Buffalo City	WI WI WI WI WI WI WI WI WI	54622- 7309 54622 54622 54622 54622 54622 54622 54622 54622
Dan Joel Neil & Susan	Jacquart Johnston Keller		33 West 22nd Street 1776 N Hillview Drive 1325 S. River Road	Buffalo City Buffalo City Buffalo City	WI WI WI	54622- 7167 54622 54622
Allen William Brett Richard Duane	Kochenderfer Krause Laduke Lietha Loewenhagen		1404 S River Road 19 W 16th Street 340 W 18th 1313 S River Road 18 W 16th Street	Buffalo City Buffalo City Buffalo City Buffalo City Buffalo City	WI WI WI WI WI	54622- 7222 54622 54622 54622 54622

Alfred	Lorenz		1412 S River Road	Buffalo City	WI	54622-7222
Bob	Lovas		127 E County Road OO	Buffalo City	WI	54622
Joel	Malanaphy		1384 S River Road	Buffalo City	WI	54622
John & Donna	Matson		1149 S River Road	Buffalo City	WI	54622-7309
Bruce	McFarlin		164 W 24th	Buffalo City	WI	54622
Scott & Audrey	Mehus		118 W 5th Street	Buffalo City	WI	54622-7138
Bill	Meyer		825 North Humboldt Street	Buffalo City	WI	54622-7010
Brian & Sandy	Michaels		88 W 12th Street	Buffalo City	WI	54622
Robert	Miller		1251 S River Road	Buffalo City	WI	54622
Burt & Jan	Moe		1353 S River Road	Buffalo City	WI	54622
Curtis	Moren		1408 South River Road	Buffalo City	WI	54622-7222
John	Moss		1325 S River Road	Buffalo City	WI	54622
Jim	Pearson		1335 S River Road	Buffalo City	WI	54622
Sandra	Piechowski		1153 S River Road	Buffalo City	WI	54622
Mark	Prevost		S2401 N Herman	Buffalo City	WI	54622
Luann	Rinn		181 W 7th	Buffalo City	WI	54622
Warren	Rivette		S2394 County Highway 60	Buffalo City	WI	54622
Gary	Robinson		96 E 1st Street	Buffalo City	WI	54622
Nancy	Sagan		1305 S River Road	Buffalo City	WI	54622
Nick	Sagan		1304 South River Road	Buffalo City	WI	54622
Dennis	Schmidtknecht		226 S Herman Street	Buffalo City	WI	54622-7240
Bill	Scivers		1394 S River Road	Buffalo City	WI	54622
Nick	Sersoging		473 W 26th	Buffalo City	WI	54622
Gus & Barb	Smit		1355 S River Road	Buffalo City	WI	54622
Kevin	Solem		1331 S River Road	Buffalo City	WI	54622-7205
Ray	Spreeman		64 W 3rd Street	Buffalo City	WI	54622
Edward	Squires		225 S Humboldt Street	Buffalo City	WI	54622
Henry	Stankiewicz		1378 S River Road	Buffalo City	WI	54622
Patti	Stinson		1394 S River Road	Buffalo City	WI	54622
Stanley	Swenson		123 E County Road OO	Buffalo City	WI	54622-7249
Jack	Walz		1386 S River Road	Buffalo City	WI	54622
Joan & Eugene	Weaver		1382 S River Road	Buffalo City	WI	54622
John	Weber		1103 S River Road	Buffalo City	WI	54622
Dan & Nicki	Wicker			Buffalo City	WI	54622
Al	Fenedick	US EPA-Env Assess Sec	77 W Jackson, ME-19J	Chicago	IL	60604
Bill	Franz	USEPA-Administrator - Reg V	77 W Jackson Blvd	Chicago	IL	60604-3590
Harlan	Hirt	US EPA - Region V WQ-16J	77 W Jackson Blvd	Chicago	IL	60604-3590

Warren	Barth		348 W 22nd Street	Cochrane	WI	54622-7172
Willard	Blanke		PO Box 261	Cochrane	WI	54622-0261
Randy	Dienger		222 S Main Street	Cochrane	WI	54622-7228
Gerald	Earney		W998 Schoepps Valley Road	Cochrane	WI	54622
David	Fettig		W1679 Heineman Lane	Cochrane	WI	54622-8102
Dick	Graettinger			Cochrane	WI	54622
Gordon	Jensen		22710 Schlawin Road	Cochrane	WI	54622-7903
George	Kletzke		PO Box 83	Cochrane	WI	54622
Tom	Krumholz			Cochrane	WI	54622
Gayle	Lewis		S2322 County Road OO	Cochrane	WI	54622
Dan	Lietha			Cochrane	WI	54622
Robert	Meyer		104 W 6th, Box 133	Cochrane	WI	54622
Jack	Scherer			Cochrane	WI	54622
Myron	Schwanke		210 Wisconsin Avenue	Cochrane	WI	54622
Harlan	Thewis	Waumandee Rod & Gun Club	W364 Thewis Road	Cochrane	WI	54622
Trish	Bantle	Buffalo County Journal	104 5th Street	Cochrane	WI	54622
Lynda	Boudreau		N5373 County Road F	Durand	WI	54736
Pat	Pariseau		16450 Ames Way	Faribault	MN	55021
			25660 Biscayne Avenue W	Farmington	MN	55024
John	Dobrovolny	U.S. Fish & Wildlife Service	1 Federal Dr, BHW Federal Bldg	Fort Snelling	MN	55111-4056
Scott	Flaherty	U.S. Fish & Wildlife Service	1 Federal Dr, BHW Federal Bldg	Fort Snelling	MN	55111-4056
Rick	Frietsche	U.S. Fish & Wildlife Service	1 Federal Dr, BHW Federal Bldg	Fort Snelling	MN	55111
Jon	Kauffeld	U.S. Fish & Wildlife Service	1 Federal Dr, BHW Federal Bldg	Fort Snelling	MN	55111
Robyn	Thorson	U.S. Fish & Wildlife Service	1 Federal Dr, BHW Federal Bldg	Fort Snelling	MN	55111-4056
Gary	Wertish	Sen. Dayton's Office	Federal Bldg, Suite 298	Fort Snelling	MN	55111
Charlie	Wooley	U.S. Fish & Wildlife Service	1 Federal Dr, BHW Federal Bldg	Fort Snelling	MN	55111-4056
Tim	Yager	U.S. Fish & Wildlife Service	1 Federal Dr, BHW Federal Bldg	Fort Snelling	MN	55111
Dan	Krumholz	Corps of Engineers	431 North Shore Drive	Fountain City	WI	54629-0397
Paul	Machajewski	Corps of Engineers	431 North Shore Drive	Fountain City	WI	54629
Dean	Peterson	Corps of Engineers	431 North Shore Drive	Fountain City	WI	54629
Steve	Tapp	Corps of Engineers	431 North Shore Drive	Fountain City	WI	54926

Patrick	Costello		1023 Island Road	Hagar City	WI	54014
Victor	Langer		W9755 - 290th Avenue	Hagar City	WI	54014
Bob	Mayer		N1705 - 860th Street	Hagar City	WI	54014
Becky	Welt			Hagar City	WI	54014
Brad	Giese		N2681 - 830th Street	Hager City	WI	54014
Gary	Palesh		760 E Hwy 12	Hudson	WI	54016
Bernice	Agin		49 Zumbro Drive	Kellogg	MN	55945
Jeff & Mary	Agin		35 Zumbro Drive	Kellogg	MN	55945
Kelly	Agin		41 Zumbro Drive	Kellogg	MN	55945
Marrice	Anderson		PO Box 2	Kellogg	MN	55945
Paul	Bambeuck		Route 1, Box 325	Kellogg	MN	55945
Jack	Beranek		927 Pritchard Rd.	Kellogg	MN	55945
John	Braun		PO Box 135	Kellogg	MN	55945
Ralph	Censer, Jr.		Route 1, Box 42B	Kellogg	MN	55945
Larry	Davis	Greenfield	118 West Newton Road	Kellogg	MN	55945
Dave	Deming		Route 1, Box 21G	Kellogg	MN	55945
Leon	Ehrenberg		Route 1, Box 16D	Kellogg	MN	55945
Larry	Gates	BLG	Route 1, Box 42	Kellogg	MN	55945
Carol	Giem		Route 2, Box 46	Kellogg	MN	55945
Bruce	Ginkel		Route 1, Box 218	Kellogg	MN	55945
Wayne	Hammer		Route 1, Box 32-D	Kellogg	MN	55945
Ralph	Henser, JR		RR1Box 42B	Kellogg	MN	55945
Lyle	Hinrichs		132 W. Newton Rd.	Kellogg	MN	55945
Dave	Huntley		Route 1, Box 16B	Kellogg	MN	55945
Ralph	Kelly		Route 1 Box 33G	Kellogg	MN	55945
William	Kerensky	Minidisk Township	Route 1, Box 21-C	Kellogg	MN	55945
Laura	Kreofsky		Rt #1 Box 79A	Kellogg	MN	55945
Shortly	Larson		PO Box 145	Kellogg	MN	55945
Bennie	Lynaugh		128 West Newton Road	Kellogg	MN	55945
Eugene	McNallan	Wasbasha County	RR1 Box 96	Kellogg	MN	55945
Gary	Meyer		Route 1, Box 21D	Kellogg	MN	55945
Jerry	Myers		9041 Prichard Road	Kellogg	MN	55945
Andrew	Nor grant		Route 1	Kellogg	MN	55945
Ken	Nor grant		Route 1, Box 44A	Kellogg	MN	55945
Michael	Nor grant		Route 1	Kellogg	MN	55945
Jeff	Packer		P.O. Box 161	Kellogg	MN	55945
Mark	Passe		233 W. Winona Avenue	Kellogg	MN	55945
Donna	Richard		RR1 Box 195	Kellogg	MN	55945
Ken	Schmoozer		Route 1, Box 16A	Kellogg	MN	55945
Matt	Schreyer		PO Box 41	Kellogg	MN	55945
Lester	Schuler		Route 1, Box 37	Kellogg	MN	55945
Bob	Scott		912 Pritchard Road	Kellogg	MN	55945
Walt	Steinberg		33 Zumbrota Drive	Kellogg	MN	55945
Peggy	Thomas		Route 1, Box 42	Kellogg	MN	55945
Anna	Travailing		80 County Road 84	Kellogg	MN	55945
Bob	Wallace		162 Hwy 42	Kellogg	MN	55945
David	Wayne		Route 1, Box 14	Kellogg	MN	55945
Brian	Ford	U.S. Coast Guard	221 Mississippi Drive	Keokuk	IA	52632-4219

Dick	Otto	Corps of Engineers	1114 South Oak Street	La Crescent	MN	55947
Randy	Uric	Corps of Engineers	1114 South Oak Street	La Crescent	MN	55947
Mark	Andersen	Wisconsin DNR	3550 Mormon Coulee Road	La Crosse	WI	54601
Gretchen	Benjamin	Wisconsin DNR	3550 Mormon Coulee Road	La Crosse	WI	54601
Ron	Benjamin	Wisconsin DNR	3550 Mormon Coulee Road	La Crosse	WI	54601
Kim	Cates	Sen. Kohl's Office	425 State Street, Mr. 202	La Crosse	WI	54601
Steve	Dewed	Wisconsin DNR	3550 Mormon Coulee Road	La Crosse	WI	54601
	Director	USGS-UMESC	2630 Fantail Reed Road	La Crosse	WI	54603
						54601-
Russ	Feingold	U.S. Senate - WI	425 State Street, Mr. 225	La Crosse	WI	3341
Barbara	Frank	Sierra Club	N1965 Valley Road	La Crosse	WI	54601
Bob	Gauges	USGS-UMESC	2630 Fantail Reed Road	La Crosse	WI	54603
Karrie	Jacquelyn	Rep. Kind's Office	205 - 5th Avenue S, #226	La Crosse	WI	54601
Jeff	Javari	Wisconsin DNR	3550 Mormon Coulee Road	La Crosse	WI	54601
Barry	Johnson	USGS-UMESC	2630 Fantail Reed Road	La Crosse	WI	54603
		Conservation				
Bob	Jumbuck	Warden	3550 Mormon Coulee Road	La Crosse	WI	54601
		U.S. House of				
Ron	Kind	Rep. - WI	205 - 5th Avenue S, Ste 226	La Crosse	WI	54601
Herbert	Kohl	U.S. Senate - WI	425 State Street, Mr. 202	La Crosse	WI	54601
		Sen. Feingold's				54601-
Matt	Nicolay	Office	425 State Street, Mr. 225	La Crosse	WI	3341
Joe	Olson	Wisconsin DOT	3550 Mormon Coulee Road	La Crosse	WI	54601
Arleen	Porsche	Wisconsin DOT	3555 Mormon Coulee Road	La Crosse	WI	54601
		WI Dept of				
		Transportation	3550 Mormon Coulee Road	La Crosse	WI	54601
Jeff	Brand		201 S Franklin Street	Lake City	MN	55041
						55041-
Clifford	Brats		1009 W Elm Street	Lake City	MN	2026
Willard	Bremer			Lake City	MN	55041
		Lake City				
Russell	Breuer	Sportsman's Club	621 N Lakeshore Drive	Lake City	MN	55041
		Frontenac				
Wayne	Carlson	Sportsman's Club	36428 Golfview Ridge	Lake City	MN	55041
Bill	Chambertlain		Lake City Marina	Lake City	MN	55041
Merv	Crowson		Route 1	Lake City	MN	55041
Mike	Davis	Minnesota DNR	1801 South Oak Street	Lake City	MN	55041
Dan	Dieterman	Minnesota DNR	1801 South Oak Street	Lake City	MN	55041
Susan	Fernholz		217 N 6th Street	Lake City	MN	55041
						55041-
Bob	Gielow		1008 Hidden Meadow Lane	Lake City	MN	1149
Allen	Hansen		35699 Hwy 61 Blvd	Lake City	MN	55041
Peter	Hansen		35853 Hwy 61 Boulevard	Lake City	MN	55041
Scot	Johnson	Minnesota DNR	1801 South Oak Street	Lake City	MN	55041
Ken	Kobs		Route 1	Lake City	MN	55041
Dick	Koch		R4CL1, Camp Lacupolis	Lake City	MN	55041
Mark	Lutjen	Lake City Marine	32897 Lakeview Drive	Lake City	MN	55041
John	McCann		311 North Oak Street	Lake City	MN	55041

Jeff	McHugh		21 Hillwood Circle	Lake City	MN	55041-2202
Clint	Moe		105 Pepin Street	Lake City	MN	55041
James	Russell		419 W Lyon Avenue	Lake City	MN	55041
Kevin	Stauffer	Minnesota DNR	1801 South Oak Street	Lake City	MN	55041
Paula	Sullivan		1008 Hidden Meadow Lane	Lake City	MN	55041-1149
Syl	Thiel		612 S High	Lake City	MN	55041
		Lake City Graphic	107 S Lakeshore Drive	Lake City	MN	55041
Brent	Haglund	Sand County Foundation	PO Box 3037	Madison	WI	53704
Peter	McKeever	The Nature Conservancy	633 W Main Street	Madison	WI	53703-2633
Bill	Redding	Sierra Club Midwest Office	214 N Henry St, Suite 203	Madison	WI	53703
		Natural Resource Cons Service	6515 Watts Road, Rm 200	Madison	WI	53719
		WI Dept of Transportation	4802 Sheboygan Ave, Box 7914	Madison	WI	53707-7914
Dick	Lambert	Minnesota DOT	1110 Centre Pointe Curve, MS 420	Mendota Heights	MN	55120-4152
Sara	Aplikowski	MPRB-SSSC	3800 Bryant Avenue S	Minneapolis	MN	55409
Deb	Boyd	MPRB	2117 West River Road	Minneapolis	MN	55411
Jenny	Brown	Nature Conservancy	1101 West River Pkwy, Suite 200	Minneapolis	MN	55415-3009
Tim	Brown	MPRB	2117 West River Road	Minneapolis	MN	55411
Eileen	Kilpatrick	MPRB	2117 West River Road	Minneapolis	MN	55411
Mike	Kimble	MPRB	2117 West River Road	Minneapolis	MN	55411
Andy	Lesch	MPRB	2117 West River Road	Minneapolis	MN	55411
Rachel	Ramadyani	MPRB	2117 West River Road	Minneapolis	MN	55411
Dean	Rebuffoni	Sierra Club	5421 Queen Avenue S	Minneapolis	MN	55410
Jon	Steadland	MWMO	250 S 4th Street, Room 414	Minneapolis	MN	55415
Robert	Brunkow	Nelson Rod & Gun Club	S1087 Mill Road	Nelson	WI	54756
Jerome & Carol	Knabe		W 2372 County Road D	Nelson	WI	54756-8300
Debby	Rodock		PO Box 67	Nelson	WI	54756
Wes	Stensland		51376 - 35th Street	Nelson	WI	54756
		Eighth Coast Guard Dist (M)	501 Magazine Street	New Orleans	LA	70130-3396
Pam	Thiel	U.S. Fish & Wildlife Service Dan's Pepin Marina	555 Lester Avenue	Onalaska	WI	54650
Dan	Fedie		303 First Street	Pepin	WI	54759
Dave	Smith		W9557 State Road 35	Pepin	WI	54759
Howard	Bennett		425 E Broadway	Plainview	MN	55964
Chris L.	McCaleb		Route 1, Box 1168	Plainview	MN	55964
Kent & Lillian	Lofton		9997 - 65th Ave	Pleasant Prairie	WI	53158-3364
Rob	Drieslein	Outdoor News	9850 - 51st Avenue N, Suite 130	Plymouth	MN	55442-3271

Sheila	Craig	U of MN Ext, Fillmore County	902 Houston Street NW #3	Preston	MN	55965-1080
Greg	Dauids		PO Box 32	Preston	MN	55965
Delbert	Mandelko	Minnesota Milk Producers	Route 2, Box 18	Preston	MN	55965
Robert	Maust		800 Oak Drive NW	Preston	MN	55965
Mary	Remington	Izaak Walton League, Wabasha Chapter	950 3rd Street	Reads Landing	MN	55968
Harold	Adamson		1412 S Park	Red Wing	MN	55066
Ann	Barsness	Red Wing Republican Eagle	2760 N Service Dr, PO Box 82	Red Wing	MN	55066-0082
Suzanne	Blue		1400 West Sixth Street	Red Wing	MN	55066
Jim	Brian	MN Beef Improvement	5820 Cannondale Road	Red Wing	MN	55066
Jerry	Dempsey		2025 Creekview Court	Red Wing	MN	55066
Glenn	Earney		2005 Perlick Avenue	Red Wing	MN	55066
Pam	Gorman		2545 Hallquist Avenue	Red Wing	MN	55066
Linda	Hamilton	The Conservation Fund	919 Central Avenue	Red Wing	MN	55066
Ken	Johnson		1020 Burton Street	Red Wing	MN	55066
Walt	Korec		2525 Hay Creek Trail	Red Wing	MN	55066
Ken	Mueller		1810 S Park Street	Red Wing	MN	55066
Harry	Munson		PO Box 391	Red Wing	MN	55066
Steve	Murphy		PO Box 40	Red Wing	MN	55066
Don	Prinz		1748 Twin Bluff Road	Red Wing	MN	55066
Walt	Smith		603 Hawthorne	Red Wing	MN	55066
Myron	White	Red Wing Port Authority	419 Bush	Red Wing	MN	55066
		KCUE Radio	Box 102	Red Wing	MN	55066
		Red Wing Republican Eagle	PO Box 15	Red Wing	MN	55066-0015
		River Falls Journal	112 E Walnut	River Falls	WI	54022
Doris J.	Bautch	Maritime Administration	1701 E Woodfield Rd, Ste 203	Schaumburg	IL	60173-5127
Angela	Anderson	Mississippi River Basin Alliance	1915 Alfred Avenue	St. Louis	MO	63110
		USCG - Marine Safety Office	1222 Spruce Street, Rm 1.215	St. Louis	MO	63103-2835
John	Anfinson	National Park Service	111 East Kellogg Blvd	St. Paul	MN	55101-1288
Thomas	Balcom	Minnesota DNR - Ecol Services	500 Lafayette Road - Box 25	St. Paul	MN	55155-4025
Wayne	Barstad	Minnesota DNR, Div Ecol Serv	1200 Warner Road	St. Paul	MN	55106
Jim	Birkholz	MN Water & Soil Resource Bd	90 West Plato Blvd	St. Paul	MN	55107
Norm	Coleman	U.S. Senate - MN	2550 University Av W, Ste. 100N	St. Paul	MN	55114



Sheryl	Corrigan	MN Pollution Control Agency	520 Lafayette Road	St. Paul	MN	55155
Ray	Cox	MN State Rep, Dist 25B	413 State Office Bldg	St. Paul	MN	55155
Julie	Ekman	Minnesota DNR, Div of Waters	1200 Warner Road	St. Paul	MN	55106
Jack	Enblom	Minnesota DNR-Ecol Serv	500 Lafayette Road	St. Paul	MN	55155
John	Halverson	Sen. Coleman's Office	2550 University Av W, Ste. 100N	St. Paul	MN	55114
Kristin	Harner	Minnesota Farm Bureau Fed.	3080 Eagandale Pl, PO Box 64370	St. Paul	MN	55164
Steve	Johnson	National Park Service	111 East Kellogg Blvd	St. Paul	MN	55101-1288
Carl	Kuhl	Sen. Coleman's Office	2550 University Av W, Ste. 100N	St. Paul	MN	55114
Joann	Kyral	NPS-Miss Natl Riv & Rec Area	111 Kellogg Blvd E, Suite 105	St. Paul	MN	55101-1256
Dan	Larson	River Resources Alliance	5077 - 144th Street W	St. Paul	MN	55124
Judy	Mader	Minnesota PCA	520 Lafayette Road	St. Paul	MN	55155
Gene	Merriam	Commissioner, Minnesota DNR	500 Lafayette Road	St. Paul	MN	55155-4040
Gary	Nordstrom	Soil Conservation Service	600 Farm Credit, 375 Jackson	St. Paul	MN	55101
Tim	Pawlenty	Governor of Minnesota	130 State Cap., 75 Dr. M.L. King Blvd	St. Paul	MN	55155
Cordelia	Pierson	Trust for Public Land	2610 University Avenue	St. Paul	MN	55114
Tom	Polasik	Minnesota DNR, Div Prks&Rec	1200 Warner Road	St. Paul	MN	55106
Michael	Prichard	Parks & Trails Council	9 Montcalm Court	St. Paul	MN	55116
Susan	St. John	Parks & Trails Council	275 - 4th Street E, Ste 642	St. Paul	MN	55101-1651
Holly	Stoerker	Upper Miss River Basin Assoc	415 Hamm Bldg, 408 St Peter St	St. Paul	MN	55102
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		St. Paul Pioneer Press	345 Cedar Street	St. Paul	MN	55101
Catherine	McCalvin	The Nature Conservancy	PO Box 305, W25417 Spaulding Rd	Trempealeau	WI	54661-0305
Claire	Abbott		506 - 12th Street E	Wabasha	MN	55981-1715
Gary	Adams		16 Riverview Drive	Wabasha	MN	55981
Rod	Adams		RR1 Box 228C	Wabasha	MN	55981
Tim	Adams		1024 4th Street SW	Wabasha	MN	55981

Tim	Adams		34 Robinson Drive	Wabasha	MN	55981
Bill & Sandra	Allaire		50 Teepeota	Wabasha	MN	55981
Bill	Allen	Reg. Director, Ducks Unlimited	Route 2, Box 148	Wabasha	MN	55981
Bill	Allen	DU-Regional	RR2 Box 148	Wabasha	MN	55981
Vern	Anderson		49 Haroldson Avenue	Wabasha	MN	55981
Jennifer	Backer		14 Mark Twain Road	Wabasha	MN	55981
Peggy	Backup		RR1 Box 101B Co. RD 1	Wabasha	MN	55981
Peggy	Backup	Izaak Walton League	101 B County Road 81	Wabasha	MN	55981
Henry G.	Barton		29 Wrangler Drive	Wabasha	MN	55981
Tim	Barton		RR1 Box 158	Wabasha	MN	55981
Jerry	Baum		53 Pioneer Drive	Wabasha	MN	55981
John	Beckman		1006 Jefferson Avenue	Wabasha	MN	55981
John	Behrendt		RR2 Box RE6	Wabasha	MN	55981
Douglas	Beisell		81 Co. Road 24	Wabasha	MN	55981
Leta	Benz-Bright		605 Milligan Avenue	Wabasha	MN	55981
John	Berse		22 Robinson Drive	Wabasha	MN	55981
Art	Bianchi		28 Riverview Drive	Wabasha	MN	55981
Clifford	Braatz		RR2 Box 85	Wabasha	MN	55981
Sheryl	Braun		145 County 21	Wabasha	MN	55981
Char	Brooker		206 Alpine Ridge #2	Wabasha	MN	55981
Steve	Buol		36 D. Sqauw Valley Road	Wabasha	MN	55981
Jeff	Burns		635 West Grant Blvd	Wabasha	MN	55981
Toni	Burns		37 Teepoeota Circle	Wabasha	MN	55981
Bob	Cain		21 Pine Tree	Wabasha	MN	55981
Ray	Carrels		Route 2, Box 82	Wabasha	MN	55981
Robert	Carrels		PO Box 93	Wabasha	MN	55981
Tom	Cavalco		38 Berna Blvd	Wabasha	MN	55981
Greg	Coffman		42A Teepeeota Point	Wabasha	MN	55981
Jim	Concidine		430 Lawrence Blvd	Wabasha	MN	55981
Dennis	Cullip		329 East Hiawatha DR.	Wabasha	MN	55981
John	Cummins		31 Pioneer Drive	Wabasha	MN	55981
Norm	Darrall		77 Teepeeota Circle	Wabasha	MN	55981
Robert	Dick		RR 1	Wabasha	MN	55981
John	Doffing	FUMRR Bob Phol Wabasha Community Develop	316 Skyline Drive	Wabasha	MN	55981
John	Doffing		PO Box 28	Wabasha	MN	55981
Steve	Drazkowski		16 Bluejay Court	Wabasha	MN	55981
John	Dunaglo		126 County Road 24	Wabasha	MN	55981
Larry & Lois	Dupong		207 Skyline Heights	Wabasha	MN	55981
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Nancy	Falkum		1307 River Drive S.	Wabasha	MN	55981

Chris	Fancher		534 Church Avenue	Wabasha	MN	55981
Joe	Fields		169 County Road 24	Wabasha	MN	55981
Bill	Fitzgerald		42 Berna Blvd.	Wabasha	MN	55981
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		Ch of Comm				
Mary Beth	Flicek		PO Box 105	Wabasha	MN	55981
Paul & Mary	Flicek		209 Rustic Lane	Wabasha	MN	55981
Paul	Fogarty		10 Riverview Drive	Wabasha	MN	55981
F.E.	Fosmo		923 Broadway Avenue	Wabasha	MN	55981
Brian	Fries		1035 3rd Street West	Wabasha	MN	55981
Mike	Fries		P.O. Box 247	Wabasha	MN	55981
Walt & Jean	Fries		1005 East Main Street	Wabasha	MN	55981
Mary Beth	Garrigan		735 Broadway Ave.	Wabasha	MN	55981
		National Eagle				
		Center				
Mary Beth	Garrigan		152 Main Street	Wabasha	MN	55981
Barb	Gilbertson		RR3 Box 18	Wabasha	MN	55981
Jim	Gillen		229 Robinson Lake Drive	Wabasha	MN	55981
Tullio	Giuliani		427 Lawrence Blvd West	Wabasha	MN	55981
Steve	Glomski		1501 River Drive South	Wabasha	MN	55981
		Wabasha-Kellogg				
		Area C of C				
Cindy	Goss		PO Box 105	Wabasha	MN	55981
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		Administrator				
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Daryl	Haack		143 County Road 24	Wabasha	MN	55981
Lavern	Hackman		174 Cty Road 24	Wabasha	MN	55981
Jeff	Hansen		1505 River Drive South	Wabasha	MN	55981
Dylan	Hartert		90 County Road 24	Wabasha	MN	55981
Clifford	Haslach		914 7th Street	Wabasha	MN	55981
Neil	Hedqist		1041 Fairway Drive	Wabasha	MN	55981
Craig	Hoffman		175 County Road 24	Wabasha	MN	55981
Joe	Hubbard		1017 West 6th Street	Wabasha	MN	55981
Galen	Huff		20 Riverview Drive	Wabasha	MN	55981
Seth	Huntoon		312 West Second St.	Wabasha	MN	55981
Anne & Gary	Ingalls		124 Cty Road 76	Wabasha	MN	55981
Kathy	Irlbeck		Route 3, Box 21-A	Wabasha	MN	55981
Margie	Jacobson		59 Oak Leaf Dr.	Wabasha	MN	55981
George	Janikowski		14 Teepeeota Circle	Wabasha	MN	55981
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John & Karla	Jans		76 Teepeeota Circle	Wabasha	MN	3011
Beth	Jensen		544 Phelps Ave.	Wabasha	MN	55981
Bill	Jewson		436 Lawrence Blvd. E.	Wabasha	MN	55981
Jerry	Johnson		706 12th Street East	Wabasha	MN	55981
Maria	Johnson		706 Market St. E.	Wabasha	MN	55981
James	Julyan		161 County Road 24	Wabasha	MN	55981
Mary	Kackmann King		c/o Allan & Norah	Wabasha	MN	55981
Pat	Kane		65 Oak Leaf Drive	Wabasha	MN	55981
Merle	Kaster		1000 Robinson	Wabasha	MN	55981

David	Kaupa		17 Robinson Drive	Wabasha	MN	55981
Lucille	Kennebech		606 W 7th Street	Wabasha	MN	55981
Dave	Kennebeck		312 West Second St.	Wabasha	MN	55981
Sharon	Kennebeck		606 West 7th Street	Wabasha	MN	55981
Paul	Klees		20 County Road 24	Wabasha	MN	55981
Don	Klinger		113 - 2nd Street W	Wabasha	MN	55981
James	Koch		159 County Road 24	Wabasha	MN	55981
Rog	Koepsell		124 County Road 24	Wabasha	MN	55981
Roy	Koepsell		128 County Road 24	Wabasha	MN	55981
Don	Kolbert		707 Hiawatha Drive E. #2	Wabasha	MN	55981
Larry	Kopischke		45 Oak Leaf Drive	Wabasha	MN	55981
Julie	Kreye		1300 Broadway Ave.	Wabasha	MN	55981
Judy	Kruegar		200 County Road 24	Wabasha	MN	55981
Burdette	Lange		111 Pioneer Drive	Wabasha	MN	55981
Joseph	LaPlante		31 Robinson Drive	Wabasha	MN	55981
Aaron	Laroeque		35 River View Drive	Wabasha	MN	55981
Keith	Larson		15 Deer Cove	Wabasha	MN	55981
Mike	Laska		1135 Broadway Avenue	Wabasha	MN	55981
Colin	Lee		730 West Grant Blvd	Wabasha	MN	55981
Dewey	Lexvold		1000 Marina Drive	Wabasha	MN	55981
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Joe	March		53 County Road 24	Wabasha	MN	55981
Janet & Joe	Marek		53 County Road 24	Wabasha	MN	55981
Lorene	Marien		26 Riverview Drive	Wabasha	MN	55981
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Paul	Markey		731 Washington	Wabasha	MN	55981
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Russ	Morgan		15 Cardinal Court	Wabasha	MN	55981
Rick	Morlan		160 County Road 24	Wabasha	MN	55981
Sheronne	Mulry	FUMRR Bob Phol	222 County Road 24	Wabasha	MN	55981
Sheronne	Mulry		222 County Road 24	Wabasha	MN	55981
Jim	Niemantsverdriet		330 West 2nd Street	Wabasha	MN	55981
Ben & Jim	Nordstrom		RR2 Box 102	Wabasha	MN	55981
John	Olson		210 Lawrence Blvd	Wabasha	MN	55981
Brad	Passe		529 8th Street	Wabasha	MN	55981
Ed	Passe		122 County Road 76	Wabasha	MN	55981

Eric	Passe		41 Haroldson Avenue	Wabasha	MN	55981
Fred	Passe		1212 Rustic Lane	Wabasha	MN	55981
Jim	Passe		Route 2, Box 86	Wabasha	MN	55981
Phil & Kate	Perry		123 Rustic Lane	Wabasha	MN	55981
Robert	Peterson		11 Deer Cove Lane	Wabasha	MN	55981
Bill	Pfeilsticker		607 Coulee Way	Wabasha	MN	55981
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Bob	Podolske		282 Binner Way	Wabasha	MN	55981
Tracy	Pooler		625 Jefferson	Wabasha	MN	55981
Pete & Deb	Preussner		139 Cty RD 24	Wabasha	MN	55981
Walter	Rahrman		23 Robinson Drive	Wabasha	MN	55981
Orlyn & Hazel	Ranvik		26 Robinson Drive	Wabasha	MN	55981
Larry & Carol	Reed		35 Wilcox Lane	Wabasha	MN	55981
Jim	Reitz		47 Berna Blvd	Wabasha	MN	55981
Ed	Richards		14 Pioneer Drive	Wabasha	MN	55945
Peter	Riester	Wabasha County	23 County Road 30	Wabasha	MN	55981
Mary	Rivers		Box 245	Wabasha	MN	55981
Jim	Roemer		Route 2, Box 51	Wabasha	MN	55981
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Paul	Rohowetz		33 Wilcox Lane	Wabasha	MN	3015
Paul	Rohowetz		33 Wilcox Lane	Wabasha	MN	55981
Curt	Rohrer		630 Lawrence Blvd East	Wabasha	MN	55981
H.	Rosendale		900 E Hiawatha Drive	Wabasha	MN	55981
Eric & Ron	Sanders		77 County Road 76	Wabasha	MN	55981
Chad	Sanderson		27 Island View	Wabasha	MN	55981
Roger	Sandwick			Wabasha	MN	55981
David	Saterdalen		147 N. Ct RD 42	Wabasha	MN	55981
Troy	Schneider		18 Oak Park Drive	Wabasha	MN	55981
Mike	Schoenbeck		134 County Road 24	Wabasha	MN	55981
Mike	Schumacher		37 Oak Leaf Drive	Wabasha	MN	55981
Jody	Schurhammer		1217 Rustic Lane East	Wabasha	MN	55981
Grant	Schuth		RR2 Buena Vista Dr. #4	Wabasha	MN	55981
Steve	Schwalbe		45 Rolling Oaks Drive	Wabasha	MN	55981
Steve & Carol	Scott		1519 River Drive S.	Wabasha	MN	55981
Rod	Sill		45 Coutny Road 24	Wabasha	MN	55981
Lynn	Simonson		47 Teepeota Circle	Wabasha	MN	55981
Larry	Smith		22 Haroldson Avenue	Wabasha	MN	55981
Mike	Smith		317 East 10th Street	Wabasha	MN	55981
Toni	Smith		1509 River Drive S.	Wabasha	MN	55981
Bill	Sonsalla		55 Haroldson Street	Wabasha	MN	55981
Ray	Spencer		523 West Main Street	Wabasha	MN	55981
Grant	Sperl		1713 River Drive S	Wabasha	MN	55981
Lois & Grant	Sperl		1713 River Drive S.	Wabasha	MN	55981
Aaron	Springer		45 Berna Blvd	Wabasha	MN	55981
Rick	Springer		41 Teepeota	Wabasha	MN	55981
John	Stears		206 Alpine Ridge	Wabasha	MN	55981
Shirley	Stuart		130 County Road 24	Wabasha	MN	55981
Francis	Sullivan		89 Pioneer Drive	Wabasha	MN	55981
Bill	sylvanus		529 West Main Street	Wabasha	MN	55981
Tom	Tenny		336 Lawernce Blvd.	Wabasha	MN	55981

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Greg	Vandermark		130 Alleghany Avenue	Wabasha	MN	55981
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Jay	Walgrave		1024 4th Street SW	Wabasha	MN	55981
Jerry	Watros		29 Pioneer Drive	Wabasha	MN	55981
Cody John	Wiemann		239 Main Street West	Wabasha	MN	55981
Tom	Wills		917 Broadway Avenue	Wabasha	MN	55981
Daniel	Wilson		936 4th Street West	Wabasha	MN	55981
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Mark	Dayton	U.S. Senate - MN	SR-346 Russell Senate Off Bldg	Washington	DC	20510-2304
	Director	US Dept of Interior	1849 C St NW, Mail Stop 2340-MIB	Washington	DC	20240
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Ron	Kind	U.S. House of Rep. - WI	1406 Longworth House Office Bldg	Washington	DC	20515-4903
Herbert	Kohl	U.S. Senate - WI	SH-330 Hart Senate Office Bldg	Washington	DC	20510-4903
James	Nussle	US House of Representatives	303 Cannon House Office Bldg	Washington	DC	20515
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Floyd	Flynn		19001 County 18 Blvd	Welch	MN	55089
B-J	Norman		15400 Norelius Road	Welch	MN	55089
Heather	Westra	Prairie Island Dakota Comm	1158 Island Blvd	Welch	MN	55089
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Sharonne	Baylor	U.S. Fish & Wildlife Service	51 East 4th Street	Winona	MN	55987
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Vicky	Drieslein	U.S. Fish & Wildlife Service	51 East 4th Street	Winona	MN	55987
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Brian	Pember	U.S. Fish & Wildlife Service	51 East 4th Street	Winona	MN	55987
Cindy	Samples	U.S. Fish & Wildlife Service	51 East 4th Street	Winona	MN	55987
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		Winona Daily News	601 Franklin Street	Winona	MN	55987
		Winona Post	64 E 2nd Street	Winona	MN	55987

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**RESPONSE TO COMMENTS**

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# RESPONSE TO COMMENTS

## ENVIRONMENTAL ASSESSMENT: LOCK AND DAM 4 EMBANKMENT REHABILITATION MAINTENANCE AND ENVIRONMENTAL RESTORATION

This document discusses the comments and questions received during the public review period for the Environmental Assessment referenced above. The public review period extended from June 12 to July 14, 2006. Additional comments were received and considered through July 31, 2006. Comments were primarily received by way of the public meeting held on July 13, 2006 in Kellogg, MN. Comments also were received by mail and telephone contact with the St. Paul District. The comments received are addressed below. Given that most comments were provided orally during the public meeting, comments are not necessarily re-printed and addressed verbatim. However, the content of most, if not all, comments are included below. Responses to those comments are provided.

### IMPACTS TO PETERSON LAKE

**Comment:** Concern was expressed that this project would negatively impact the “fishery” in Peterson Lake. The general concern was the conversion of aquatic habitat to bottomland forest habitat. Concern also was expressed that Minnesota Department of Natural Resources (MnDNR) may not have been involved with planning of this effort, or that they may not have been looking out for the fishery value of Peterson Lake.

**Response:** MnDNR, WiDNR and U.S. Fish and Wildlife Service (USFWS) Refuge personnel were heavily involved with planning of this project. Given this project is proposed in Minnesota waters, and on the Refuge, the MnDNR and USFWS were continuously involved. Several options for this project were considered. Some options were thrown out specifically to avoid impacts to the fishery resource in Peterson Lake. The proposed action would convert some aquatic habitat close to the embankment to bottomland forest habitat. However, water depths within most of the area proposed would be 1.5 feet or less and be sandy substrate. This area probably has limited value as fisheries habitat. In terms of recreational use and fishing from the embankment, fishing conditions along the proposed berm would probably be improved over existing fishing conditions. When looking at the biological value of the proposed berm vs. other viable options, the resource agencies and the Corps felt that this was the most positive project. Benefits would be observed not only at the embankment, but also the location for obtaining fine materials for construction.

**Comment:** Questions were asked whether this project would make existing sedimentation problems any worse. Also, would this project result in addition erosion in Peterson Lake?

**Response:** The proposed project should not have any meaningful effect on sedimentation rates in Peterson Lake. Also, other than erosion protection at the embankment, the project shouldn't

have any substantial affect on erosion rates along other shoreline areas around Peterson Lake. During high river flows, existing hydraulic conditions include currents that move around the southwest corner of Peterson Lake. These current move along the west side of Peterson Lake, around the southwest corner of the lake, and then along the embankment back toward the main channel. This existing condition can result in erosion along the west shores of Peterson Lake. However, the proposed project is not expected to have any meaningful change in this condition. The conditions wouldn't be expected to be any better, or any worse, as a result of the project. However, if conditions do appear to change as a result of the project, then the Corps may consider modifying project features to resolve this issue.

### **SOURCE OF MATERIAL FOR PROJECT CONSTRUCTION**

**Comment:** It was stated that sand material that forms the base for constructing the proposed project should be obtained from dredging Peterson Lake, and not from the existing stockpile site at Teepeeota Point. The comment was made that this method would be cheaper than what is proposed.

**Response:** At this time, the Corps can not economically justify obtaining sand construction materials from dredging Peterson Lake. Constructing the berm from material dredged from Peterson Lake would most likely cost the Corps more than the proposed project. Even if sand for construction could be obtained from Peterson Lake, the Corps would still need to permanently place the dredged sand from Teepeeota Point that would otherwise be utilized for this project. The permanent placement of material from Teepeeota Point includes additional cost. When considering these additional costs with the likely costs for dredging and associated activities within Peterson Lake, the total cost would be higher than the project proposed here.

An alternative source of funding that might be available for dredging in Peterson Lake is from the Environmental Management Program (EMP). This program provides 100% federal funds for Habitat Rehabilitation and Enhancement Projects (HREP). Features like dredging in backwater areas have been included as part of these HREP projects, but the justification for the dredging must be based on habitat benefits, not on recreational benefits. If an HREP project is proposed for this area, Federal and State natural resource agency representatives would prioritize it along with several other projects currently under consideration to receive EMP funds. Interest for dredging Peterson Lake with EMP funds should be directed through State Departments of Natural Resources, or through the St. Paul District, Corps of Engineers.

**Comment:** It was stated that the Corps would not have any trouble getting rid of dredged material by making it available for beneficial use.

**Response:** Contrary to strong opinions expressed at the public meeting, there is a substantial surplus of dredged material that the Corps can not get rid of through beneficial use to the public. The Corps currently has two stockpile locations in the Lower Pool 4 area and both are open to the general public for removal of material at no cost. One is located in Wabasha, Minnesota and the other is located in Alma, Wisconsin. The Corps agrees that there should be more areas

available that are easily accessible and available for beneficial use of the dredged material. However, the Corps does not believe that all material would be used beneficially, even if all material could be stockpiled at accessible locations in this area. The problem is twofold.

First, dredging requirements far exceed the projected beneficial use of material for this area. Actual quantities dredged between 1985 and 2004 (20 years) in lower pool 4 were 5.2 million cubic yards. The heavy sediment load from the Chippewa River makes dredging in this area higher than other reaches in the St. Paul District. Over the past 20 years, the average annual dredging requirement for the St. Paul District was 840,000 cubic yards and the average annual dredging completed in lower pool 4 alone was 260,000 cubic yards. That means the 10 mile reach from the Chippewa River downstream to Lock and Dam 4 (Lower Pool 4), representing less than 4% of the total length of channels the St. Paul District is responsible to maintain (284 miles), is responsible for 31% of the average annual dredging. The Wabasha Gravel Pit placement site has received approx. 3.2 million cubic yards of material since its first use by the Corps in 1984. There has been good beneficial use to date, but nothing close to the actual dredging requirements. The Wabasha area does not have the growth or construction opportunities that an area like La Crosse, Wisconsin has, which contributes to the problem. There are currently four island sites in Lower Pool 4 holding an estimated 3.3 million cubic yards of material. This material will need to be excavated soon to allow continued navigation on the river.

Second, locating sites to stockpile material is very difficult. The real issue is that nobody wants a huge pile of sand in their back yard and at this time transporting the material great distances is not feasible due to high costs. Several locations in the Wabasha/Kellogg area have been pursued in the past 20 years and most have been opposed by local residents. Comprehensive planning for dredging and dredged material placement began in the early-mid 1970s and has been ongoing since that time. The Great River Environmental Action Team (GREAT) Study completed in 1980 and several individual Reconnaissance Reports for specific river reaches completed in the early 1980s all identified long-term dredging requirements and potential placement sites for dredged material. Some of these sites identified have been implemented, but others were not possible due to high real estate costs, or opposition by local residents. The Corps is currently working on a long-term Channel and Dredged Material Management Study for Lower Pool 4. That study will investigate ways to reduce the amount of sediment getting to the Mississippi River from the Chippewa River and will identify a plan for managing dredged material into the future. More information on this study can be found at the St. Paul District Corps' web site: (<http://www.mvp.usace.army.mil/navigation/default.asp?pageid=189>).

The bottom line is that the Corps will need to look for opportunities wherever possible to utilize material dredged from the main channel of the Mississippi River in Lower Pool 4. The Lock and Dam 4 embankment protection project provides the opportunity to use approximately 60,000 cubic yards for a beneficial use.

**Comment:** It was stated that fine material for this project should be obtained from Clear Lake, and not from the proposed wetland scrape. The main reasons given for this includes: providing

habitat benefits to Clear Lake, providing recreational access to Clear Lake, and minimizing safety issues associated with trucking fine materials from the wetland scrape.

**Response:** At this time, the Corps is investigating the potential for using Clear Lake as the source for fine materials. The Corps does acknowledge that utilizing Clear Lake would provide habitat benefits to Clear Lake, and would alleviate the concerns with traffic congestion associated with the wetland scrape. However, there is no guarantee that the Corps will be able to pursue this option. If alternative funding sources are not identified, then the Corps would move forward with the selected plan which utilizes the wetland scrape to obtain fine material.

### **IMPACTS TO EXISTING CULVERTS**

**Comment:** Questions were raised as to the impacts of the projects on operations of the existing culverts. Will this project impact flow through the existing culverts into the Finger Lakes? Will the project create a hazard at the Finger Lakes culvert inlets between the terminal rock groins due to higher flow velocities? Will the project create a problem at the Finger Lakes culvert inlets due to more sediment and/or vegetation collecting near the inlets?

**Response:** It's not believed that the proposed project would impact flow through the existing culverts. Flow velocities leading into the culverts should not change. There also shouldn't be an increase in debris accumulation or sedimentation in front of the culverts, relative to existing conditions. However, if the project is constructed, and any of these conditions appear to be worse, then the Corps may modify the project to correct these conditions. Such an action would be coordinated with the State and federal natural resource agencies.

### **SAFETY OF THE SELECTED PLAN**

**Comment:** The selected plan would include trucking fine material, used for construction, to the embankment. This would potentially include 600 or more dump trucks traveling from a wetland scrape area to the embankment. The EA identified this safety concern. This concern was echoed by comments received by the District. Increased truck traffic could create safety issues for residents along the travel route for heavy equipment. This is especially the case for people living along Peterson Lake Drive.

**Response:** The District recognizes this safety concern. This concern will be addressed in one of two ways. First, the District is investigating the potential to use dredging as the method to obtain fine material. This dredging could occur in Clear Lake immediately below the embankment, and would alleviate the need for trucks hauling fine material along roads adjacent to the embankment.

Second, if dredging can not be utilized, the District will move forward with the plan to truck fine materials in from the wetland scrape. The District, and/or its contractors, would be required to meet safety standards for Corps project work and abide by applicable laws and regulations concerning use of public roadways. Contractors would be required to submit a safety plan to

ensure their work meets Corps safety requirements. Possible actions to ensure safety that could be considered include: signs indicating truck traffic; use of flagman to direct traffic; signs indicating slower speed due to truck traffic; limitations on the movement of heavy equipment (e.g., dump trucks may not be allowed to meet and pass each other from opposite directions on narrow roads); as well as other possible actions to increase safety. A press release could be provided to increase awareness. The schedule for trucking could be considered to avoid periods when the area around Peterson Lake is most heavily used – this could include weekends, holiday periods, etc. These actions may help to minimize potential safety concerns with the proposed action.

It should be noted that trucking of construction materials in the area has been safely performed in the past. For example, in 1998 the Corps pursued excavation of dredged material from its Grand Encampment site (lower Pool 4). As a part of this effort, fine material was also utilized for capping sand material. This fine material was taken from a wetland scrape in the same general area proposed here. Approximately 16,000 cubic yards was hauled by truck to the Wabasha Prairie Site. This was performed without incident, and included over twice as much material hauled by truck as that proposed here. Although this doesn't alleviate all issues and concerns, it's at least a recent example of similar actions have been performed safely in the project area.

#### **EFFECTS OF PROJECT IMPACTS TO LOCAL ROADS**

**Comment:** Comment was provided that the heavy equipment hauling associated with moving material from the wetland scrape to the embankment could impact local roads. Concern was that roads could be degraded or destroyed as a result of the proposed action.

**Response:** The Corps and its contractors will abide by applicable laws and regulations concerning use of public roadways. Some township roads were not designed for heavy truck traffic and are only 18 to 20 feet wide. On these roads they also need to comply with restrictions identified in any appropriate permit from the township that is responsible for maintenance of their roads.

#### **PROJECT RELIABILITY**

**Comment:** Concern was raised that since this is a demonstration project, it is considered experimental and may be subject to failure. Since erosion has been observed in other areas of lower Pool 4, then this structure would also be subject to erosion.

**Response:** This project is unique in that it proposes natural features to protect existing infrastructure. However, St. Paul District does have extensive experience building river features that represent improved habitat conditions. Experiences gained through island construction projects are especially valuable in understanding how these land forms remain stable while also providing important habitat values. The plans for this project include using gradual slopes along

the terraces, capping the terraces with fine material, planting with vegetation, and stabilizing with rock groins. These actions have proven to be successful in stabilizing man-made features (like islands). The District is confident that the structures will remain stable and not suffer from substantial erosion. Should substantial erosion occur, the District may revisit the project to modify or stabilize the project. Any such action would occur in coordination with State and federal resource agencies.

### **USE OF TRADITIONAL ROCK FOR STABILIZATION**

**Comment:** Questions were asked whether traditional rock was considered as an alternative.

**Response:** Yes, traditional rock was considered. However, the general interest from the District and resource agency partners was to pursue this as a demonstration project. The District and resource agencies feel that the proposed plan is collectively better for the environment than the use of traditional rip rap. Moreover, an alternative that uses only rock would not help with permanent disposal of dredged material. The approximately 60,000 CY of sand that would otherwise be used for construction will cost something eventually to get rid of. If the potential cost of sand disposal is added to the cost of the rock alternative, it is actually less economically feasible compared to the other alternatives.

### **IMPACTS TO RECREATION**

**Comment:** Concern was expressed that this project would take away fishing and other recreational opportunities in Peterson Lake.

**Response:** The embankment would be closed during construction. However, once construction is complete, the public will have access to the same recreational opportunities as under existing conditions. In fact, fishing conditions along the proposed berm would probably be improved over existing fishing conditions along the embankment.

**Comment:** Question was asked if the berm will impact the entrance/channel to the Pioneer Club on the Minnesota side Peterson Lake.

**Response:** The berm will be constructed close to the existing embankment. The berm and associated construction should not effect recreational boat movement in Peterson Lake, with the exception of the construction zone close to the embankment. Since the berm will be constructed in shallow water close to the embankment, it appears unlikely that any access lanes would be impacted. No effects would be anticipated over existing conditions.