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Upper Mississippi River System Environmental Management Program

Definite Project Report / Environmental Documentation (SP-1)

LAKE ONALASKA DREDGE CUT & ISLAND CREATION

HABITAT REHABILITATION AND ENHANCEMENT PROJECT

Pool 7
Upper Mississippi River
LaCrosse County, Wisconsin

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UPPER MISSISSIPPI RIVER SYSTEM
ENVIRONMENTAL MANAGEMENT PROGRAM
DEFINITE PROJECT REPORT/ENVIRONMENTAL DOCUMENTATION (SP-1)

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POOL 7, UPPER MISSISSIPPI RIVER
LA CROSSE COUNTY, WISCONSIN

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EXECUTIVE SUMMARY

A significant water quality problem and associated fishery degradation has been identified in Lake Onalaska near Rosebud Island. Wave action in Lake Onalaska also reduces water clarity. The Wisconsin Department of Natural Resources (DNR), the U.S. Fish and Wildlife Service, and others have done extensive sampling and monitoring of the area since the late 1970's because of the importance of the 7,700-acre area to fish and migrating waterfowl. Sedimentation has occurred in the area near Rosebud Island and the natural islands in Lake Onalaska have been eroding and disappearing. The project objectives are to: provide oxygenated water to the valuable fishery area; create additional deep-water fishery habitat; improve water clarity in the lake; and provide additional predator-free waterfowl nesting areas. It is proposed to accomplish these objectives by: providing flows to the fishery area; deepening selected areas of the lake; and creating additional islands in the lake.

The alternatives considered to accomplish the objectives included various channel layouts and depths, island designs and locations, and construction techniques. Channel design alternatives included bottom widths from 100 to 350 feet, depths from 8 to 40 feet, and short stubs or branches off a central channel for additional "edge" effect. Island designs included side slopes from 1 vertical on 2 horizontal to 1 on 12 and slope protection from vegetative techniques to rock riprap. The island locations were varied to make the best use of existing resources and bathymetry. Construction techniques that were considered included mechanical and hydraulic dredging, deep-dredging, and placement alternatives. The construction alternatives and project boundaries were re-analyzed when it was found that the Wisconsin Department of Transportation (DOT) was interested in obtaining highway fill from the habitat project area.

The selected plan for the habitat project includes dredging an 8,000-foot-long channel between Rosebud Island and the Wisconsin shoreline to a depth of 10 feet with 1 vertical on 3 horizontal side slopes. The channel bottom width would be 200 feet except for 100-foot widths at a location where the channel splits and at the lower end where the channel would branch into two. A spur channel about 500 feet long and 400 feet wide near the upper end of the central channel would carry flows from Halfway Creek and also serve as a sediment basin. Approximately 600,000 cubic yards would be excavated from the project area. All of the sand (about 220,000 cubic yards) from the channel cut would be used to construct three islands at existing shallow areas or where islands previously existed in Lake Onalaska. The top width of the islands would be a minimum of 25 feet and 6.5 feet above normal pool. Side slopes would be 1 vertical on 3.5 horizontal with rock riprap placed on the north side to minimize erosion and topsoil on the rest of the island. The remainder of the material from the channel cut (fine sediments not suitable for island construction) would be placed in a containment facility constructed on Rosebud Island or at some other upland site in Wisconsin.

During the planning of the project, the Wisconsin DOT indicated a need for about 1 million cubic yards of material for a 7-mile-long highway project located a couple of miles from the channel cut. Therefore, it was agreed that material not needed for island construction and dredging of additional material from the project area could be used for highway fill. The additional material would be obtained by dredging up to 35 feet deep and 400 feet wide from a designated borrow area in the area of the channel cut near Halfway Creek. This deeper borrow area would then be backfilled to a

depth of about 10 feet with material from the habitat project limits that is unsuitable for island or highway fill.

Since the Wisconsin DOT requirement for fill material is much greater than the quantity estimated to be dredged within the habitat project limits, it is proposed that the DOT implement and manage the construction contract to accomplish both the habitat and highway projects concurrently. The Corps would design the habitat project, have review and approval authority of final plans and construction activities, and provide appropriate reimbursement to the DOT for the habitat project via a Section 215 agreement. Using one contract to construct both projects would result in cost savings to both agencies, with additional environmental and intangible benefits. Total direct cost of the selected habitat project is $2,780,000. By combining the habitat project with the Wisconsin DOT highway project, the total direct cost of the habitat project is estimated to be $2,020,000, based on a cost sharing apportionment of 50/50 for material used as highway fill. Indirect costs bring the total habitat project cost to $2,420,000. $80,000 of the total project cost has been expended for the general design phase of the project. Average annual operation and maintenance costs of the project are estimated to be $3,000 (joint project) and would be the responsibility of the U.S. Fish and Wildlife Service.

The habitat project would restore some of the habitat diversity in the 7,700-acre Lake Onalaska by creating about 90 acres of deepwater fishery habitat and restoring 10 acres of island habitat. The channel cut would provide good winter habitat for bluegills and largemouth bass by maintaining higher dissolved oxygen levels year-round. The islands would initially create about 12 acres of "shadow zones" south of the islands to encourage the development of emergent and submerged vegetation. This could expand as the aquatic vegetation becomes established. The islands would also improve and maintain water clarity, provide loafing and resting habitat for migratory waterfowl, and provide "edge effect" for a variety of other fish and wildlife.

The following information is proposed to be collected in order to evaluate the performance of the project: continuous summer and winter dissolved oxygen studies of the area north of Rosebud Island; flow studies of the area north and south of Rosebud Island during the summer under low river flow conditions and during late winter; bathymetric surveys of the channel immediately and three years after project completion; annual visual inspection of island stability; and annual waterfowl nest searches. It is recommended that the Wisconsin DNR and U.S. Fish and Wildlife Service also conduct a winter creel survey and island and aquatic vegetation studies.

Approval for construction of the Lake Onalaska Dredge Cut and Island Creation habitat rehabilitation and enhancement project is recommended by the St. Paul District Engineer at a 100-percent Federal cost estimated to total $2,420,000, with the Wisconsin DOT administering the construction contract to accomplish both the proposed habitat project and the highway project. The District Engineer further recommends that funds in the amount of $80,000 be allocated in fiscal year 1988 for final design and coordination of the project.

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ST. PAUL DISTRICT, CORPS OF ENGINEERS
1421 U.S. POST OFFICE AND CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101-1479
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INTRODUCTION

AUTHORITY

The authority for this report is provided by Section 1103 of the Water Resources Development Act of 1986 (Public Law 99-662). The proposed project would be funded and constructed under this authorization, specifically, subsection (e)(1)(A): "a program for the planning, construction, and evaluation of measures for fish and wildlife habitat rehabilitation and enhancement."

PARTICIPANTS AND COORDINATION

Participants in this study included the Wisconsin Department of Natural Resources, the U.S. Fish and Wildlife Service, the Wisconsin Department of Transportation, and the St. Paul District, Corps of Engineers. The Fish and Wildlife Service was a cooperating agency throughout the process required by the National Environmental Policy Act. Meetings at the project site, the State Office Building and the National Fishery Research Lab in La Crosse, and the St. Paul District Office were held to discuss project objectives and designs. Correspondence was also initiated between the agencies to coordinate the project at various stages of development. Preliminary drafts of this report were sent to the U.S. Fish and Wildlife Service and the States of Wisconsin and Minnesota for review and comment. The comments that were received (see attachment 5) and the results of subsequent meetings with these agencies were used to formulate the selected plan and prepare this final draft report. This Definite Project Report/Environmental Documentation was sent to the agencies and interests listed in attachment 6. A public meeting was held in La Crosse, Wisconsin, on June 23, 1988, during the review period of this report. Over 100 people attended the meeting to discuss the project and ask questions. Additional interagency meetings have been held since the public meeting to refine project designs.

PROJECT PURPOSE AND LOCATION

The purposes of the dredge cut are to improve water quality, prevent the area from freezing to the bottom, and create deepwater fish habitat, especially winter and late summer habitat, behind Rosebud Island in Lake Onalaska. The purposes of island restoration in Lake Onalaska are to improve water clarity, reduce wind-induced erosion on existing land areas, restore habitat diversity that has been lost, and provide predator-free waterfowl nesting/loafing habitat.

The project is located in La Crosse County, Wisconsin, just upstream from the cities of Onalaska and La Crosse. The project area is in the Lake Onalaska/Black River area of the Mississippi River about 3 miles northeast of the navigation channel at approximate river mile 704 (see Plate 1). The area is about 2 miles upstream of the Black River spillway. It lies within the Upper Mississippi River Wildlife and Fish Refuge.

EXISTING CONDITIONS

PHYSICAL SETTING

The area of the proposed dredge cut is bounded on the west by Lake Onalaska, on the south by Rosebud Island, on the north by the town of Brice Prairie, and on the east by a Burlington Northern railroad embankment along the Wisconsin shoreline adjacent to the city of Onalaska. Water depths in the project area range from 1 to 4 feet with abundant aquatic plant growth. The shallow water and excessive plant growth have contributed to the problem of low dissolved oxygen content of the water and freezing to the bottom in the project area, causing a significant decline in the fishery value.

Halfway Creek enters the project area from the north at about the midpoint of the dredge cut. A boat ramp (Mosey's Landing) is located on the north side of the project area near the mouth of Halfway Creek. The La Crosse Municipal Airport is located directly south of the project on French Island.

The Wisconsin shoreline adjacent to the project area rises about 25 feet to a flat prairie area (Brice Prairie). The area is marsh type habitat where Halfway Creek enters the lake. The next plateau rises to about 60 to 80 feet above the lake where most of the urban development has taken place. About 2 miles inland, the bluffs rise 600 or more feet above Lake Onalaska.

WATER RESOURCES

Lake Onalaska is a 7,700-acre lake that was created by the construction of Lock and Dam 7. Prior to inundation in 1937, the area was a floodplain meadow with scattered farms, marshlands, and stands of cottonwood and willow. The Black River is a major tributary entering pool 7 north of Lake Onalaska. It traverses a marshy, floodplain area through a series of channels. The Black River discharges, through these series of side channels, into the main channel and directly into Lake Onalaska, especially during higher river discharges. Flows from the Black River entering Lake Onalaska tend to stay near the Wisconsin shoreline of the lake and proceed around the south side of Rosebud Island to the Black River spillway at the city of Onalaska. About 4 miles downstream of the spillway, the old Black River channel joins the navigation channel of the Mississippi River.

On the Mississippi River channel side, Lake Onalaska receives water through several channels between the barrier islands. During low flow periods (Dexter et al., 1978), approximately 20 to 30 percent of the Mississippi River discharge enters the lake through Sommers and Proudfoot Chutes.

Halfway Creek is a small tributary that joins Lake Onalaska, through openings in the railroad embankment and roadway, in the area north of Rosebud Island. This tributary flows about 2 miles through Brice Prairie, collecting runoff and spring flows from several coulees in the hills above Lake Onalaska.

The general water chemistry of Lake Onalaska was described by Claflin (1976): "Because the lake does not thermally stratify under normal conditions, the water chemistry characteristics are quite similar to the river proper. Generally, temperatures in the lake fluctuate annually between zero and approximately 30° C. Dissolved oxygen concentrations vary in the lake, fluctuating between near zero to 13 mg/L in the vegetation beds but remaining relatively high in the open portions of the lake. The pH remains quite stable throughout the year with an annual average of 7.42. The alkalinity is similar to that found in the river with an annual average of approximately 125 mg/L. Nutrient analyses in vegetation beds reveal that available nutrients are accumulating in the lake and that transport from the lake does not equal production. The water is colored by refractory organic materials that are introduced from the Mississippi and Black Rivers. Average annual color values approximate 35 PtCo units."

In most years, much of the 300-acre proposed project area north of Rosebud Island experiences low dissolved oxygen during the winter. The severity and duration of reduced oxygen levels, in any given year, depend on ice thickness and snow cover, which in turn affect water circulation and the amount of photosynthetic activity. Several recent general water chemistry studies (Wisconsin Department of Natural Resources, 1978; Berkman and Ruden, 1986; and Schellaass, Goy, and Rogala, 1987) of the area north of Rosebud Island have shown that winter dissolved oxygen frequently falls below what is considered necessary to sustain a good winter fishery. Summer diel dissolved oxygen studies of the Rosebud area in 1986 and 1987 (Shellhaas and Sullivan, 1987) have shown that 58 and 34 percent, respectively, of the time dissolved oxygen falls below the 5 mg/l water quality standard.

GEOLOGY AND SOILS

Recent Quarternary Geology - Prior to the creation of the present Lake Onalaska, the bottom area consisted of a floodplain shared by both the Mississippi and Black Rivers. With the exception of a veneer of organic muck deposited since impoundment, the lake bottom features are typical of floodplain backswamp topography.

Soils - Four soil borings, 87-1M through 87-4M (see Plates 6 and 7), were completed in the area of the proposed channel in order to characterize the sediments to be dredged. The locations of the borings are shown on Plate 5. The results of laboratory classification tests on selected samples are presented on the boring logs. In general, the upper 3 feet of sediments consist of very soft, highly plastic organic clay interlaced with decaying vegetation. From about 3 to 6 feet, the materials consist of very soft to soft organic silt or clay with less organics than the upper 3 feet. Below about 6 feet, the materials are variable and consist of either silt, silty clay, silty sand, or Mississippi River bedload sand. Mississippi River bedload sand was encountered at elevations ranging from 625 to 629. Normal pool is at about elevation 639 while the present mudline varies from about elevation 634 to 637.

Two soil borings, 87-5M and 87-6M (see Plate 8), were completed in Lake Onalaska in order to generally characterize the subsurface stratigraphy at potential island sites. Laboratory test data are presented on the boring logs. The locations of the borings are shown on Plate 5. The borings indicate that the upper 6 to 18 inches of material is a very soft organic clay (muck) which is likely to be displaced laterally during placement of island embankment sand. Below the muck, a 3 to 5-foot thick, slightly overconsolidated layer of organic silt and/or low plasticity clay was encountered. The overconsolidation (more dense than would normally be expected under water) is due to desiccation which occurred prior to impoundment of Lake Onalaska. Beneath the overconsolidated layer, the majority of materials encountered consisted of loose, silty, fine to medium sand, although clay layers were encountered in boring 87-5M at about 38 feet. At some locations, field trip observations disclosed that uniform, fine sand exists at the mudline rather than the muck encountered in borings 87-5M and 87-6M.

There has been no subsurface exploration of any upland dredged material placement sites. Upon commencement of plans and specifications preparation, exploration may be needed at upland site(s) in order to determine engineering characteristics of the materials to be used if confinement dike construction is necessary.

Sedimentation Patterns - The sedimentation rates within Lake Onalaska have been estimated by various methods: bottom contour changes since inundation (Claflin, 1977 and Korschgen et al., 1987); Cesium-137 sediment cores (McHenry and Ritchie, 1978) and sediment input (Dexter et al., 1978). Estimates of the overall lake sedimentation rate range from 0.2 cm (Korschgen et al., 1987) to 2.10 cm (McHenry and Ritchie, 1978) per year. Plate 10 shows the general sedimentation pattern that has occurred since inundation in 1937 (Korschgen et al., 1987). The approximate 300-acre area north of Rosebud Island has lost 37 percent of its total water volume from pre-inundation until 1976 (Claflin, 1976). From 1937 to 1976, this area has shown an average sedimentation rate of 0.7 cm/year. Approximately 560,000 cubic yards of sediment has accumulated in this area. Similar sedimentation has occurred for the areas south and downstream of Rosebud Island (around 0.96 cm/year). Sedimentation patterns within Lake Onalaska are complex with areas of erosion and deposition occurring since inundation (Korschgen et al., 1987). Wind probably plays an important part in the sedimentation patterns. The predominant winds come either out of the northwest or southeast, depending on the season. The strong northwest winds, which occur mainly in the spring and fall (pre- and post-aquatic plants), probably have the greatest effect on sedimentation patterns. Claflin (in Dexter et al., 1978), using sediment traps, tried to characterize sediment movement within the lake caused by wind-generated waves. He found an increase in sedimentation along the northwest to southeast axis when the winds were out of the northwest. This may offer a partial explanation for why the southeast area of the lake, near Rosebud Island, has shown higher rates of sedimentation than most of the lake. The barrier islands that were present have generally eroded away or are in the process of eroding away because of the wind-generated waves, adding further to the problems of resuspension of the sediments.

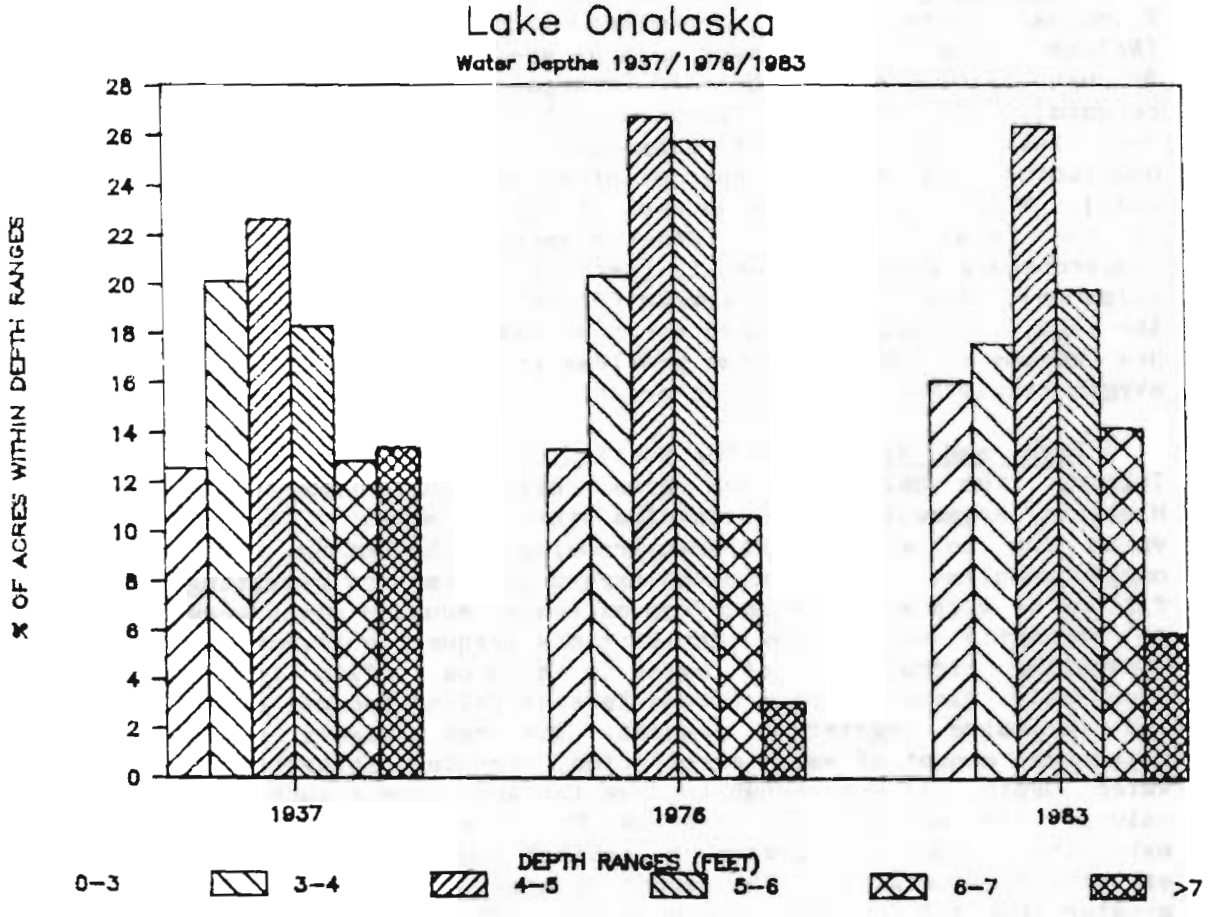
NATURAL RESOURCES

Vegetation - Lake Onalaska has an abundance of aquatic plants. Principal emergents are arrowhead (*Sagittaria sps.*) and yellow lotus (*Nelumbo lutea*), which cover a large area of the upper portion of the lake. Bulrush (*Scirpus sps.*), burreed (*Sparganium sps.*), pickerelweed (*Pontederia cordata*), and cattail (*Typha latifolia*) are also present in substantial densities. The dominant submerged species are wild celery (*Vallisneria americana*) and several species of pondweed (*Potamogeton sps.* and *Najas sps.*). Wild celery covers an area of approximately 3,500 acres, almost half of the total water area. Other submerged species include mud plantain (*Heteranthera dubia*), coontail (*Ceratophyllum demersum*), marestail (*Hippuis vulgaris*), and Canada waterweed (*Elodea canadensis*). In certain areas of the lake, including the area north of Rosebud Island, the vegetation growth has become so luxuriant that problems with water circulation and dissolved oxygen levels are beginning to occur.

Fish and Wildlife - The portion of Lake Onalaska north of Rosebud Island, the Halfway Creek area, historically has been an important bluegill/largemouth bass fisheries wintering area. It has diminished in value due to much of the area freezing to the bottom and to dissolved oxygen problems. The dissolved oxygen problems are resulting from the area filling in with sediment and from excessive aquatic plant growth. The area is presently so shallow that portions frequently freeze to the bottom, preventing circulation of water in the area. Flow from Halfway Creek frequently flows upstream around Rosebud Island because of the shallowness and excessive vegetation present. The area probably never received an extensive amount of water circulation, but in combination with a greater water depth, it was enough to make the area have a much greater fisheries value. The entire 7,700-acre Lake Onalaska backwater complex has lost an extensive amount of deepwater habitat and, as a result, some of its structural diversity. The amount of area within Lake Onalaska that is greater than 7.5 feet deep has gone from 585 acres shortly after impoundment to between 151 (Claflin, 1976) and 282 acres (Korschgen, 1983). A comparison of water depth ranges before and after impoundment is shown in Figure DPR-1 below. A portion of the deepwater habitat that does exist was artificially created by dredging borrow material for the runway expansion at the La Crosse Airport and for construction of the dike for Lock and Dam 7.

The commercial fishing harvest in pool 7 has been relatively stable at around 181,440 kilograms per year (Upper Mississippi River Conservation Committee, 1980). Lake Onalaska is well known for its sport fishery, especially bluegill (*Lepomis macrochirus*) and largemouth bass (*Micropterus salmoides*). Rach and Meyer (1982) estimated that, during the winter of 1976-1977, 31,696 kilograms of bluegills were harvested from Lake Onalaska, with the area north of Rosebud Island leading in productivity. Studies conducted by the Wisconsin DNR during 1984-85 indicated that bluegill winter use in selected areas adjacent has been high (Holzer, personal communication, 1988). The projected ice fishing harvest of bluegill during the 1984-85 winter season on all of Lake Onalaska was 167,853.

Figure DPR-1. Comparison of the contribution of water depth categories shortly after impoundment to the 1976 and 1983 surveys.



Shortly after inundation, the area north of Rosebud Island had a diversity of water depths ranging from 0 to 6 feet as shown in Table DPR-1 below. The 1976 survey (Claflin, 1976) shows that very little of the area has water depths greater than 4 feet, with most of the area now less than 2.5 feet deep. Deepwater is important to the fisheries of Lake Onalaska. During the winter, bluegills school and move to deeper water areas (Crossman and Scott, 1973). Deepwater habitat is also important escape habitat during the summer when the vegetated shallows experience high temperatures and nighttime dissolved oxygen reductions.

Table DPR-1. Water depths in the area north of Rosebud Island.

Depth Range(feet)	1937 Acres	1976 Acres
0-2.5	59	178
2.5-3.0	42	26
3.0-3.5	58	45
3.5-4.0	64	39
4.0-4.5	32	7
4.5-5.0	9.6	0
5.0-5.5	12.2	0
5.5-6.0	17.4	0

Lake Onalaska has exceptional importance to migratory waterfowl because of its abundance of aquatic vegetation and open water habitats attractive to diving ducks. In recent years, as many as 75 percent of the global population of canvasback ducks (*Aythya valisineria*) and significant numbers of other waterfowl have used this area during fall migration (Korschgen, et al., 1988). Lake Onalaska and the adjoining terrestrial habitats are utilized by a variety of other wildlife species.

Threatened and Endangered Species - Three federally-listed threatened or endangered species may occur in the area: peregrine falcon (*Falco peregrinus*), bald eagle (*Haliaeetus leucocephalus*), and Higgins' eye pearly mussel (*Lampsilis higginsi*). The peregrine falcon and the bald eagle may be sighted in the area during migration. Bald eagles may use the adjacent areas for roosting. A recent mussel survey conducted in the main channel border areas at Winters Landing detected the presence of Higgins' eye pearly mussel. This is the first recorded presence of Higgins' eye pearly mussel in pool 7 in recent times. However, the fine sediments present and limited flow at the proposed dredge cut and island areas are not suitable habitat for Higgins' eye pearly mussel and therefore probably preclude their presence in or immediately adjacent to the project area.

Cultural Resources - The University of Wisconsin-La Crosse has conducted a number of archaeological surveys in the immediate project area. Within a mile of the proposed dredge cut, at least 14 archaeological sites are found. Twelve of these sites are located on Brice Prairie, and two more sites are located on Rosebud Island. While a good amount of archaeological survey work has been conducted in the area, large areas of Brice Prairie still remain unsurveyed. Rosebud Island has never been surveyed intensively for archaeological resources. The University of Wisconsin-La Crosse located the two sites on Rosebud Island during a check of shoreline areas of some of the islands in the Lake Onalaska area. Based on the survey work that has been done in the area of the proposed project, a high potential exists for locating additional sites in this part of pool 7.

One of the sites in the immediate area of the proposed work has been placed on the National Register of Historic Places. The Olsen Site (47LC76) is an Oneota site located on the southern end of Brice Prairie. It is very likely that other sites in the area also meet the criteria of the National Register of Historic Places.

SOCIOECONOMIC RESOURCES

Lake Onalaska and Rosebud Island are at the northern edge of La Crosse, Wisconsin. La Crosse is a medium-sized city whose economy is colored by tourism stimulated by the scenic quality of the river and adjacent bluffs in the area. The river towns and small cities along this part of the Mississippi River have a quaint aspect about them resulting, at least in part, from recent efforts to preserve the relatively abundant Victorian-era buildings that have survived. This effort seems to have been effective at attracting tourists.

La Crosse is the largest city in La Crosse County, approximately 30 miles south of Winona, Minnesota, and 150 miles south of Minneapolis-St. Paul. La Crosse City increased in size substantially between 1970 and 1980, while La Crosse County grew only slightly.

	1980 Population	1970 Population	Percent Change
La Crosse City	67,966	51,153	32.9
La Crosse County	91,056	86,039	5.8

The median age in La Crosse City is slightly younger than the median age throughout Wisconsin, similar to the age structure in La Crosse County.

	La Crosse City	La Crosse County	Wisconsin
Median Age (years)	27.6	27.5	29.4
Over 65 years (%)	13.3	12.2	12.0

Median family income for La Crosse City is less than that of Wisconsin but greater than that of La Crosse County.

	La Crosse City	La Crosse County	Wisconsin
Median Family Income (1979)	$18,571	$15,900	$20,915

The major industries in La Crosse County are services (36.8 percent of employed persons), trade (24.0 percent of employed persons), and manufacturing (22 percent of employed persons).

La Crosse offers many social, cultural, and recreational amenities. It has a daily newspaper, two TV stations, two hospitals, many parks (26) offering a variety of activities, 36 motels and hotels, and a college.

RECREATIONAL/AESTHETIC RESOURCES

Lake Onalaska is a very popular fishing area due to the diverse fishery and close proximity to the City of La Crosse, Wisconsin. Shallow water depths and abundant aquatic plant growth limit recreational boating. However, a private sailing club is located in the general vicinity of the project area on the north end of French Island. Lake Onalaska also provides migrating habitat for large concentrations of migrating canvasback ducks, Canada geese, and other waterfowl. These concentrations of waterfowl and the close proximity of U.S. Highways 14 and 61 along the Minnesota shoreline and U.S. Highway 53 along the Wisconsin shoreline create opportunities for wildlife viewing. Most of Lake Onalaska is closed to waterfowl hunting. The predominant visual characteristics of the project area are broad vistas of open water bordered by a series of irregular shaped islands with sparse ground-cover type vegetation.

FUTURE WITHOUT PROJECT CONDITIONS

The future without project condition would mean continued degradation of the fishery in the project area because of sedimentation from wind-induced wave transport in Lake Onalaska and sediment load from Halfway Creek, depleted oxygen levels, and periodic winter fish kills. Water clarity in Lake Onalaska would continue to be seasonally poor because of wave action that causes high suspended solids in the lake. Existing islands would continue to disappear because of erosion, causing a decline in both fish and wildlife habitat. The public dissatisfaction with deteriorating conditions in the lake would continue to grow because of the strong public interest in maintaining the prime environmental value of the lake.

PLAN FORMULATION

INTRODUCTION

The area of the primary proposed action is located between Rosebud Island and the Wisconsin shoreline as described above. A significant water quality problem and associated fishery degradation have been identified at the site by the Wisconsin Department of Natural Resources (DNR) and others. The initial proposal by the Wisconsin DNR was to dredge a channel through the shallow area to provide oxygenated water from Lake Onalaska to the area. As suggested by the U.S. Fish and Wildlife Service, the project was expanded to make beneficial use of the dredged material by constructing islands in Lake Onalaska for increased habitat value and to break up wind-generated waves to improve water clarity. The project was expanded again when it was found that the Wisconsin Department of Transportation (DOT) was interested in obtaining a large quantity of material from the dredge cut area for use as highway fill. This prompted a significant change in the project planning process and construction implementation procedure as explained later. Close coordination with the Wisconsin DOT and other agencies involved is critical to the accomplishment of an effective and efficient project.

ALTERNATIVES CONSIDERED

The project alternatives considered were primarily in the area of channel layout and depth, island location, placement of dredged material, and construction techniques and procedures.

Channel layout design included bottom widths of 100 to 350 feet and the addition of short stubs dredged perpendicular to the central channel. Hydraulic analysis was performed to determine the size of channel needed to transport the quantity of oxygenated water to the area to achieve the desired oxygen levels in the area. A channel with a bottom width of 200 feet and 1 vertical on 3 horizontal side slopes would give the desired flow velocity of between 0.01 to 0.05 foot per second (transit time of less than 20 hours through the dredged area). Although short stubs off the central channel were considered to enhance fishery habitat by providing additional "edge" effect, a braided or split channel would provide greater benefits because of the slow flowing characteristics, be easier to

construct, and not significantly increase the anticipated dredging quantity of fine sediments. The branching of the channel at the lower end would also provide additional enhancement of fishery habitat.

The placement of dredged material from the channel cut was important in the development of the project. It was initially expected that most of the dredged material could be used for the construction of islands in Lake Onalaska. However, after existing data was analyzed and preliminary subsurface explorations were completed, it was obvious that this would not be possible. The fine sediments do not have the strength to permit their use for any type of rigid structure without drying, mixing, and other extensive treatment procedures, especially for use in an aquatic environment. Therefore, only clean sand underlying the fine sediments is acceptable for island construction.

The location and number of islands to be constructed were based on the locations of existing islands and shallow water and where wind fetch needed to be reduced to reduce wave action. Initially, two other islands were considered in addition to those shown on Plate 2 in order to maximize the area receiving reduced wind effects; one located to the west of island B and one between islands C and A. An island between C and A was eliminated from further consideration because of the deeper water in this area and the lack of a suitable foundation for island construction since this area was part of the Black River channel prior to inundation. An island to the west of proposed island B was eliminated because of the excellent quality habitat present in this area already and the desire to leave the area undisturbed. Sources of fill considered for the proposed Lake Onalaska islands included the Lake Onalaska dredge cut, the main channel of the Mississippi River, and an operation and maintenance project at Winter's Landing. The Winter's Landing project, located about 8 miles from the island construction site, is expected to be accomplished in 1988. The project consists of realigning the main channel and includes the removal of rock wing dams and channel excavation. Material could be barged from the Winter's Landing project to the island construction site and placed mechanically. Due to shallow water in the vicinity of the proposed islands, a channel 5 feet deep would need to be dredged adjacent to the islands for construction equipment access. However, the quantity of sand expected from the Winter's Landing project is relatively small (20,000 cubic yards) and could be used beneficially elsewhere. Therefore, it was not considered further. If sand from the Lake Onalaska dredge cut or the Mississippi River main channel were used for island construction, the fill could be placed either hydraulically or mechanically, depending on cost efficiency. If placed hydraulically, a 5-foot deep access channel may be required to place topsoil and riprap on the islands. Obtaining fill from the Mississippi River channel was not considered further because of the additional mobilization costs. Adequate material is expected to be available from the Lake Onalaska dredge cut.

Initially, large islands were proposed because of the large quantity of dredged material thought to be available from the dredging project. However, as stated previously, it was found early in the planning process that much of the material in the upper layer of the area to be dredged consisted of fine sediments and would not be suitable for island construction. The Wisconsin DOT also wanted to obtain a large quantity of material from the project dredging area. Therefore, the size of the islands was optimized to provide the minimum size necessary to break up wave action

and still provide fish and wildlife habitat value. Material not used for island construction could then be used for highway fill by the Wisconsin DOT. Shallow areas and areas in Lake Onalaska where islands previously existed were selected to minimize fill requirements and to increase the anticipated suitability of the foundation material. Islands were located away from environmentally sensitive or valuable habitat and also away from the Black River channel running through Lake Onalaska.

An island construction option that was considered included constructing the proposed islands with 1 vertical on 10 horizontal side slopes or flatter. This would likely negate the need for rock riprap and would make construction by hydraulic methods simpler. However, this would have required more sand and was considered too risky in view of the potential loss of aquatic plants and fish habitat and increased human interference in the waterfowl habitat.

Construction techniques considered to accomplish the project included mechanical and hydraulic dredging. Because of the large quantity of material, it is expected that the channel would be dredged hydraulically and no extraordinary procedures would need to be used. It was initially proposed to dredge the fine sediments first and place them at an upland site for drying and possible beneficial use. All the sand dredged from within the habitat project limits would be used for island construction. The Wisconsin DOT also wants to use material dredged from the proposed habitat project area for highway fill. Construction of a major highway project near the city of Onalaska is planned to begin in 1989. The nearest point of the proposed 7-mile-long highway is located about 1 mile from the project site (see Plate 3). Material could be dredged hydraulically, pumped to the highway right-of-way, and placed along the highway alignment. The type of material from the habitat project that is desired for highway fill is the sand that lies under the fine sediments. Much of the fine sediments overlying the sand could be used as topsoil for the highway project after appropriate drying time. After additional investigation of dredging techniques, it was found that the quantity of fine sediments to be removed could be reduced by placing the dredge cutterhead deep into the sand and continuing to move the cutterhead into the sand. It is estimated that about half of the fine sediments would fall in the void created by the cutterhead as it removes the sand mixed with some of the fine sediment. This deep-dredging technique has been used successfully at other projects and is considered a feasible method. The sand and fine sediments would segregate at the placement site because the sand would quickly settle out of the carriage water. The carriage water and suspended fine sediment could be contained in holding ponds on the right-of-way. The fine sediment would be allowed to settle and dewater for use as topsoil. The Wisconsin DOT has a need for about one million cubic yards of sand for highway fill (much more than the quantity of material to be dredged from within the proposed habitat project channel limits) and over 100,000 cubic yards of topsoil. Therefore, one or more borrow areas within the dredge cut area would be designated and would be dredged deeper than the designed channel bottom to obtain the desired quantity of sand and topsoil. The proposed construction procedures are discussed later in this report.

Alternatives considered in order to provide the additional material for highway fill included dredging the entire proposed channel deeper, using one borrow area with access from the upper end of the project, and using two

borrow areas with access from the lower end of the project. If a 200-foot wide channel at the 10-foot depth is maintained, the entire channel would have to be dredged to about a 28-foot depth to obtain the necessary material for both the islands and the highway fill. This depth is unacceptable from the fisheries aspect because thermal stratification would likely occur and the current fishery would be adversely affected. A depth of 10 to 12 feet is the maximum depth desired for the channel in order to accomplish the fishery objectives of the project. Dredging the channel twice as wide would reduce the required depth to about 13 feet, but would significantly increase the quantity of fine sediments dredged and, thus, the cost of the project. Therefore, it was decided to formulate the project in a way to reduce the area directly affected by the deeper dredging. Borrow areas were located in the area of the channel near Halfway Creek and at the lower end of the project where the channel splits. The two locations were proposed based on the possibilities that it would be a more direct route for the dredge pipelines to the placement sites, that no access channel would need to be dredged to move construction equipment to the project limits, and that less fine sediments may be encountered. However, two borrow sites would require additional mobilization of the dredge and associated silt curtain, would greatly disturb the most valuable portion of the fishery area, and would result in increased turbidity during the dredging and disposal operations. Also, because of the location of an existing culvert in the adjacent railroad embankment, there does not appear to be a construction cost savings by using two borrow areas. Therefore, it would be advantageous to use just the more centrally located borrow area near Halfway Creek where it would also act as a future sediment trap for sediment from Halfway Creek and from Lake Onalaska via the upper end of the project.

SELECTED PLAN OF ACTION

The plan for the "habitat project only" will be described first so that the proposed design to satisfy the habitat project objectives can be understood. The proposed highway project will also be described. However, since it is the desire of both the Corps of Engineers and the Wisconsin DOT to make more efficient and beneficial use of the available resources and also to conduct construction activities in a manner that is in the best interest of the public, the joint habitat and highway project is presented as the selected plan of action.

Habitat Project Only - The plan of action would involve hydraulically dredging an 8,000-foot-long channel between Rosebud Island and the Wisconsin shoreline as shown on Plate 2. A spur channel about 500 feet long and 400 feet wide would carry flows from Halfway Creek to the dredged channel. The channels would have side slopes of 1 vertical on 3 horizontal and varying bottom widths (see Plate 11). The channel bottom width would be 100 feet in the vicinity of Halfway Creek where the channel splits and also at the lower end of the channel where it branches into two different directions. At the upper end and in the center portion of the project, the channel bottom would be 200 feet wide. Some minor sloughing may occur where pockets of decaying vegetation and/or peat are encountered. The dredge cut would be to elevation 629 (a depth of 10 feet below normal pool). The channel dimensions would require dredging a total of about 600,000 cubic yards of material. At the upstream end of the cut, a submerged barrier of sand fill

would be needed to provide the desired flow velocity through the remainder of the channel. It is estimated that about a 100-foot wide barrier would be used and would require about 5,000 cubic yards of material. The actual width and height of this barrier would be determined in the final design phase after additional field information is obtained. The fine sediments (material not suitable for island construction) would be removed from the project limits and placed in a containment facility constructed on Rosebud Island or at some other upland site in Wisconsin, depending on the actual quantity of fine sediments that would need to be dredged. Appropriate measures would be taken to provide adequate retention time before water is discharged from the facility (possibly one or more retention cells placed in series) and a silt curtain would be used at the outlet pipe if discharged into the project dredging area or directly into Lake Onalaska. Plate 4 shows a detail of the proposed Rosebud Island placement site. It is estimated that the fine sediments would consolidate by a factor of 2.2 after drying. For example, the estimated 380,000 cubic yards of fine sediments to be dredged from the channel cut would consolidate to a volume of about 170,000 cubic yards at the placement site. Some of the dried material would be transported to the proposed islands for use as topsoil. Material not used as topsoil would be left in place on Rosebud Island for revegetative purposes and improved wildlife habitat. If the quantity of fine sediments to be dredged exceeds the capacity of Rosebud Island, the material would be placed at an approved upland site in Wisconsin and stockpiled for some future beneficial use. The determination of the exact placement site would be made in the final design stage.

All of the sand dredged from the channel cut (estimated to be about 220,000 cubic yards) would be used to construct islands in Lake Onalaska at the general locations shown on Plate 2. The intent is to locate the islands at existing shallow areas or where islands previously existed. A typical cross-section of the proposed islands is shown on Plate 14. The top width would be a minimum of 25 feet (depending on the quantity of dredged sand available) at elevation 645.5 (6.5 feet above normal pool). This is equivalent to the 10-year flood stage elevation. The island side slopes would be constructed to 1 vertical on 3.5 horizontal. Post construction settlement of the islands is anticipated to be on the order of 6 inches. Rock riprap would be used on the northerly side to protect the islands from the predominant storm induced waves to minimize erosion (see Plate 13). The slope protection shown on Plate 14 does not represent recommended slope protection typically encountered in Corps of Engineers projects. Slope protection would normally consist of graded riprap with appropriate bedding. It is acknowledged that the proposed protection could experience minor damage during occurrences of extreme wind coupled with high pool elevations. However, the protection is consistent with a recently constructed habitat project (Weaver Bottoms) where damage is not life threatening. Even with this proposed design, maintenance of the islands is still expected to be minimal over the 50-year economic life of the project. Additional analysis of the location and design of the islands is necessary for the final plans.

A minimum of 6 inches of topsoil would be placed on the top and southerly side of the islands for revegetation purposes. The relatively small quantity of topsoil would be obtained by dredging fine sediments adjacent to the islands or from fine sediments placed and dried on Rosebud Island. The islands would be allowed to revegetate naturally.

Highway Project Only - The highway project proposed by the Wisconsin DOT is a realignment and upgrade to freeway standards of U.S. Highway 53 beginning at Interstate 90 in the city of Onalaska and ending at State Highway 35, a distance of 7 miles. The project will require about one million cubic yards of borrow material. The project is scheduled to begin construction in 1989. The Wisconsin DOT would like to obtain the borrow material from the area of the habitat project dredge cut in Lake Onalaska. The only other alternative source of borrow is from bluffs in the area. This is not desirable because there is concern in the local area about preserving the bluffs. The lake site could provide the material needed at about the same cost. If the Wisconsin DOT were to obtain material from the lake without combining the highway project with the habitat project, it is anticipated that a large "hole" would be hydraulically dredged in the area between Rosebud Island and the Wisconsin shoreline. The material would be piped to the highway alignment and placed directly where needed by continually moving and extending the discharge pipe. The deep-dredging method would be used to minimize the handling of fine sediments as described earlier in this report. Topsoil for the highway project would be obtained from the fine sediments dredged with the sand as they segregate at the discharge outlet.

Joint Habitat Project and Highway Project - The selected joint project would be based on the above "habitat project only" design, but would include dredging of additional material from a borrow area located near the mouth of the Halfway Creek area (see Plate 2) to satisfy highway fill requirements. The proposed islands in Lake Onalaska would be constructed to the optimum size specified above, requiring about 160,000 cubic yards of sand. This material would be dredged from within the designated borrow area. The proposed highway project would require a total of about one million cubic yards of highway fill. In order to obtain this large quantity, the dredge cut would be deepened in the borrow area to a depth of at least 30 feet using the deep-dredging method; i.e., placing the dredge cutterhead at a depth of 30 feet and continually working into the sand to reduce the quantity of fine sediments dredged. Side slopes would be increased to 1 vertical on 2 horizontal at depths below elevation 629. The borrow would occur in both of the braided or split channel areas (no dredging would be performed in the area separating the two channels) and would be expanded in bottom width (200 to 400 feet) and depth (30 to 35 feet) as shown on Plate 12. The perimeter of the entire borrow area would have a staked silt screen in place prior to borrowing the material for the islands and highway project. The approximately 440,000 cubic yards mixture of coarse and fine material necessary to complete the habitat project channel would then be hydraulically dredged and placed as backfill in this silt-screened borrow area. The southerly braided channel and the first 300 feet of the northerly channel would be restored to the project depth of 10 feet by the placement of this dredged material from the habitat project limits. The balance of material would be placed in the remainder of the unfilled borrow channel. The northerly deep dredge cut would serve as a sediment trap for flows from Halfway Creek and Lake Onalaska. The additional dredging in this limited area would also provide a long-term habitat project with additional deep-water fishery benefits and habitat diversity. The sediment trap would negate the need for any maintenance dredging of the channel during the 50-year economic project life. The fine sediments obtained at the highway site by the deep-dredging method would be dried and used as topsoil for the

highway project. The highway project would have a need for approximately 110,000 cubic yards of topsoil in place.

The proposed sequence of operations for construction of the joint project would be as follows:

(1) Mobilize.

(2) Dredge a 50-foot-wide access channel into the upper end of the proposed dredge cut to the designated borrow area. Material from this access channel is expected to consist primarily of fine sediments. This material (approximately 20,000 cubic yards) would be placed in a containment area constructed on Rosebud Island. Water would be decanted and discharged into the dredge cut area. A silt screen would be used to isolate the area around the outlet pipe.

(3) Install a silt screen around the borrow area. Deep-dredge within the designated borrow area and place the material on the highway right-of-way (approximately 1,000,000 cubic yards of highway fill and 110,000 cubic yards in place of fine sediment for topsoil) and construct the islands in Lake Onalaska (approximately 160,000 cubic yards of sand). For purposes of computations and reimbursement as explained later, it would be assumed that all material for island construction would be obtained from within the habitat project channel limits in the borrow area. The spur channel to Halfway Creek would also be deep-dredged (approximately 60,000 cubic yards) and used for highway fill.

(4) Dredge the remainder of the material from within the habitat project limits (approximately 360,000 cubic yards) and place in the borrow area to backfill the southerly channel and the first 300 feet of the northerly channel to a finished depth of 10 feet. The intent would be to provide a continuous channel through the project area with a maximum depth of 10 feet. Any additional material dredged from within the specified habitat project channel limits, would be placed in the northerly channel of the borrow area. A silt screen would be used around the placement site to control the movement of suspended material. It is expected that after completion of the dredging within the habitat project limits, the northerly channel in the borrow area would still have a depth of about 25 feet. An option that was considered included placing all the material from within the habitat project limits (other than that used for island or highway construction) at the containment site on Rosebud Island. This would negate the need to place material under water to backfill the borrow area. However, this option was much more costly because the unit cost of dredging would be about three times higher to place the material on Rosebud Island rather than under water. Another option that will be considered during the final design phase is to dredge all the material for the island and highway fills from the northerly channel within the proposed borrow area and near the mouth of Halfway Creek. Then the southerly channel in the borrow area would be dredged to the habitat project limits (10 feet depth, 100 feet wide) and all the material placed as backfill into the northerly channel of the borrow area. This would likely result in less disturbance to the area without an apparent increase in construction cost and would also backfill the borrow area to a final depth of about 15 feet.

(5) Riprap and topsoil islands.

(6) Demobilize.

Since the Wisconsin DOT requirement for fill material is greater than the estimated quantity proposed to be dredged within the channel cut project limits, it is proposed that the Wisconsin DOT implement and manage the construction contract to accomplish both the habitat project and the highway project under a single contract. The Corps of Engineers would complete the final design of the habitat project, provide the information to the Wisconsin DOT, review and approve plans and specifications prepared by the Wisconsin DOT, and inspect habitat project construction to insure that the project is accomplished as proposed. Reimbursement of the Wisconsin DOT would be done via a "Section 215 Agreement" (see attachment 4) according to the following reimbursement arrangements:

WORK ITEM	REIMBURSEMENT (% of Contract Bid Price)
Mobilization and demobilization.	50
Dredging of sand from the channel cut to construct islands (approx. 160,000 CY).	100
~~Dredging of material within the habitat project channel limits with placement in the borrow area as backfill~~ or ~~on Rosebud Island (approx. 380,000 CY).~~	100
Dredging of material within the habitat project limits for placement on highway right-of-way (approx. ~~460~~ 560,000)	50
Dredging of material outside the habitat project limits for placement on highway right-of-way (approx. ~~940~~ 560,000 CY).	0
Riprap and topsoil islands.	100

Engineering, preparation of plans and specifications, supervision, and contract administration costs would be cost-shared in the same ratio as the estimated construction costs. If dredging of fine sediments becomes necessary in order to obtain sand suitable for island construction, the containment area on Rosebud Island would be used to contain that fine material. Costs for this work would be 100 percent reimbursable to the Wisconsin DOT.

REAL ESTATE REQUIREMENTS

No land needs to be permanently acquired for the project, since the proposed channel cut and islands and Rosebud Island are owned by the Corps of Engineers or the U.S. Fish and Wildlife Service and are managed for wildlife by the Upper Mississippi River Refuge. Appropriate agreements (such as right-of-entry for construction, etc.) would be made with the U.S. Fish and Wildlife Service to construct the portions of the project that are located on the refuge. The Wisconsin DOT has or will acquire all lands for placement of dredged material on the highway right-of-way and all easements for the dredge pipeline and return water routes, as well as assuming the costs for these lands and easements.

PROJECT ACCOMPLISHMENTS AND OUTPUTS

The habitat project would restore some of the habitat diversity that has been lost within Lake Onalaska because of erosion of the existing islands and sedimentation in the deeper water areas. The project would create about 90 acres of deepwater habitat. The proposed islands would restore 10 acres of island habitat and offer some protection for the remaining islands against wind-induced wave erosion. The islands would also create shadow zones south of the islands. The subsequent quiescent conditions should encourage the development of emergent and submerged vegetation. Therefore, about 12 acres of shallow, vegetated littoral areas may be created along the southern shore of the islands. This could expand as the aquatic vegetation becomes established and further increase the shadow zone effect.

The slow flowing channel created in the area north of Rosebud Island should provide good winter habitat for bluegills and largemouth bass. The adjacent deeper water areas should also receive some water circulation and subsequently increased dissolved oxygen levels. This would increase the winter habitat and fisheries value of these areas year-round by maintaining higher dissolved oxygen levels.

The islands would serve to reduce the resuspension of fine sediments and the subsequent redeposition in the southeast area of the lake. Therefore, the project would not only restore some of the deepwater habitat that has been lost due to sedimentation but may reduce the loss of the remaining deepwater habitat. The islands should improve and maintain water clarity. This would likely preserve and enhance the existing valuable aquatic plant community. In addition, the proposed islands would provide loafing and resting habitat and should increase the value of Lake Onalaska as a major waterfowl staging area. It may be possible to achieve and maintain between 8 and 50 mallard nests per acre. The islands and the subsequent edges that are created would also be valuable to a variety of other wildlife and fish.

ENVIRONMENTAL EFFECTS

An environmental analysis has been conducted for the proposed action, and a discussion of the impacts follows. As specified by Section 122 of the 1970 Rivers and Harbors Act, the categories of impacts listed in table DPR-2 (Environmental Impact Assessment Matrix) were reviewed and considered in arriving at the final determination. In accordance with Corps of Engineers regulations (33 CFR 323.4(a)(2)), a Section 404(b)(1) evaluation has been prepared (attachment 3).

Table DPR-2

ENVIRONMENTAL IMPACT ASSESSMENT MATRIX

MAGNITUDE OF PROBABLE IMPACT

NAME OF PARAMETER	INCREASING BENEFICIAL IMPACT ← SIGNIFICANT	SUBSTANTIAL	MINOR	NO APPRECIABLE EFFECT	MINOR	SUBSTANTIAL	→ INCREASING ADVERSE IMPACT SIGNIFICANT
A. SOCIAL EFFECTS							
1. Noise Levels					temp		
2. Aesthetic Values				X			
3. Recreational Opportunities			X				
4. Transportation				X			
5. Public Health and Safety				X			
6. Community Cohesion (Sense of Unity)				X			
7. Community Growth and Development				X			
8. Business and Home Relocations				X			
9. Existing/Potential Land Use				X			
10. Controversy			X				
B. ECONOMIC EFFECTS							
1. Property Values				X			
2. Tax Revenues				X			
3. Public Facilities and Services		X					
4. Regional Growth				X			
5. Employment				X			
6. Business Activity				X			
7. Farmland/Food Supply				X			
8. Commercial Navigation				X			
9. Flooding Effects				X			
10. Energy Needs and Resources				X			
C. NATURAL RESOURCE EFFECTS							
1. Air Quality					temp		
2. Terrestrial Habitat			X				
3. Wetlands		X					
4. Aquatic Habitat		X			X		
5. Habitat Diversity and Interspersion		X					
6. Biological Productivity		X					
7. Surface Water Quality		X			X		
8. Water Supply				X			
9. Groundwater				X			
10. Soils			X				
11. Threatened or Endangered Species				X			
D. CULTURAL EFFECTS							
1. Historic Architectural Values				X			
2. Prehistoric and Historic Archaeological Values					poss.		

NATURAL RESOURCES

The project would create around 90 acres of deepwater habitat. Between 26 and 48 percent of the water surface area of Lake Onalaska that contains water depths greater than 7 feet has been lost since inundation by the locks and dams in the 1930's. The creation of the channel would partially offset this loss. The slow flowing channel (flow velocity of 0.01 to 0.05 feet per second) created north of Rosebud Island should provide good winter habitat for bluegills and largemouth bass. The adjacent deeper water areas should also receive some water circulation and subsequently increased dissolved oxygen levels. This would increase the winter habitat value of these areas, as well. The channel would not only provide good wintering habitat but also increase the fisheries value of the area during the rest of the year, especially during the summer months, by maintaining higher dissolved oxygen levels.

The proposed islands would restore 10 acres of island habitat and offer some protection for the remaining islands against wind-induced wave erosion. The islands would also create shadow zones south of the islands that would be directly protected from the wind. These shadow zones would extend south of the islands 66 feet or 11 times the height of the island (Simons and Chen, 1976). The subsequent quiescent conditions should encourage the development of emergent and submerged vegetation. Therefore, around 12 acres of shallow, vegetated littoral areas may be created along the southern shores of the islands. This could expand as the aquatic vegetation becomes established and, in turn, further increase the shadow zone effect. This type of habitat can be important spawning and nursery areas for certain species of fish, including bluegills and largemouth bass. Herons and egrets would use the shallow areas for fishing. The marsh habitat that is expected to develop in the shadow zones of the islands would provide good habitat for aquatic mammals such as muskrats and mink, and for a wide variety of birds. It would also enhance the value of the islands for waterfowl nesting and loafing by providing some additional cover and food resources. This type of habitat can also be important spawning and nursery areas for certain species of fish, including bluegills and largemouth bass. The rocky littoral area created on the north face of the islands would also provide valuable fish habitat. It would also enhance the value of the islands for waterfowl nesting and loafing, by providing some additional cover and food resources.

Much of the open water area within Lake Onalaska contains submerged aquatic plants that have high caloric densities (especially wild celery, an important food resource of the canvasback duck). Their consumption enables waterfowl to meet the substantial energy demands of migration and reproduction. In recent years, as many as 75 percent of the Upper Mississippi flyway population of canvasback ducks and significant numbers of other waterfowl have used Lake Onalaska during fall migration. By reducing the amount of resuspension of fine materials, the islands should help to preserve this aquatic plant community.

One of the objectives of the islands is to provide reduced predator pressure areas for waterfowl resting and loafing. Waterfowl management and research have traditionally focused on breeding birds; however, it is becoming increasingly clear that spring and fall staging periods of the

annual cycle are critically important to waterfowl survival and reproduction. Lake Onalaska has an abundance of submerged aquatic plants that have high caloric densities. Loafing and resting areas interspersed in this valuable food resource are lacking in Lake Onalaska. The proposed islands would provide this habitat, which should increase the value of the lake as a major waterfowl staging area.

Another objective of the islands is to provide relatively predator-free areas for waterfowl nesting. Nicklaus (in WDNR's Mississippi River Unit Annual Report, 1984-1985) studied mallard (*Anas platyrhynchos*) nesting on several old dredged material islands located adjacent to the main channel of the Mississippi River. Nicklaus found the annual average successful nests per acre of island to range from 0.98 to 2.98, with average annual percent of successful nests ranging from 60 to 87. These values are low compared to those recorded around the country for islands with good dense nesting cover (Lokemoen et al., 1984). Lokemoen et al. (1984), in their summary of their work and the work of several others, reported nest densities ranging from 7.6 to 205 nests/acre, with most being above 50 nests/acre. In the Lokemoen et al. (1984) study, nesting success varied from 80 to 85 percent. Nicklaus' study islands did not provide ideal dense nesting cover, in that the old dredged material showed various levels of vegetation recovery. Included were large trees, which can be used as perches by avian predators, and patches of sparse grass, which may detract from their value for mallard nesting. In addition, the islands were not stable and were being lost due to erosion. Nest densities on islands can be extremely high, likely because of increased nest success and hen survival with subsequent homing (Duebbert et al., 1983 and Hines and Mitchell, 1983). On the proposed islands, it may not be reasonable to expect to achieve the extremely high successful nest densities that have been reported on islands in other areas. However, it may be possible to achieve and maintain between 8 and 50 mallard nests per acre, which would be substantially above what is presently occurring on old dredged material islands.

The construction activities would cause some disturbances to wildlife use of the project area and immediately adjacent areas. This disturbance would be minimized by prohibiting construction activities in the area during the Wisconsin waterfowl hunting season (approximately October 1 to November 15), a critical use time for waterfowl. Rosebud Island shows various levels of revegetation. However, portions of the island have been designated as a dry prairie of local significance by the Wisconsin DNR's Natural Area Inventory of La Crosse County in 1976. The general outline of the potential disposal area shown on Plate 4 would avoid the better quality habitat. Only a portion of this area is expected to be needed for the placement of dredged material. The final boundaries would be determined based on the results of the cultural resources and vegetation surveys to avoid and minimize impacts. Construction of a disposal area and disposal of fine material on Rosebud Island would eliminate the existing sparse vegetation and temporarily disturb wildlife use of the island. However, creation of a better topsoil on the island should allow for the establishment of a better vegetative community and, subsequently, enhance wildlife use of the area. Fish use of the general project area during the construction and dredged material disposal would be reduced slightly as a result of the activity and the increased turbidity and suspended particulates. However, because the material is relatively clean, no toxic effects on fish or other aquatic organisms are anticipated.

The channel would have very little positive or negative effect on most wildlife species. However, the creation of deepwater habitat within the vegetated shallow area north of Rosebud Island could be slightly beneficial to aquatic mammals, such as muskrats and beaver. The deepwater would provide escape habitat for these species, especially during the winter, which could increase their use of the area. Lake Onalaska has experienced a conflict of recreational fishing use of the closed area and the disturbances to migrating waterfowl during the waterfowl hunting season. If the dredged channel successfully enhances the fisheries of the area north of Rosebud Island, which is mostly outside of the closed area, disturbances of waterfowl by recreational fishing use of the closed area could be reduced.

WATER QUALITY

The following summarizes the effects on water quality. A more detailed discussion can be found in attachment 3 (Section 404(b)(1) evaluation). There would be short-term construction related effects on water quality and long-term effects on water quality resulting from the project features.

Short-term, local turbidity/suspended particulates plumes would be generated during the following operations: open water placement of the coarse dredged material at the island sites; effluent return from the fine material containment sites on Rosebud Island and on the proposed island sites for topsoil; effluent return from the placement of the coarse material on the Highway 53 right-of-way; operation of the hydraulic cutterhead; and open water placement of a mixture of fine and coarse material in the borrow area. In order to minimize these plumes, the containment areas, especially the fine material containment area on Rosebud Island, have been designed to maximize retention time and effluent quality. The effluent would be returned to the proposed dredge cut area to minimize the impact zone. A similar island construction project (the Weaver Bottoms rehabilitation) was recently completed in pool 5. This project included island creation by hydraulic placement of coarse material and hydraulic placement of fine material in a containment area to be used as topsoil. Both operations created fairly large short-term visible turbidity plumes that extended a few thousand feet downstream of the discharge. The plumes from the island creations were mainly from the displacement and disturbance of fine material at the island sites. The effects of the proposed island creations in Lake Onalaska may be less, especially for Islands B and C, because they are being built on the eroded base of old islands that have coarser material than what was encountered in the Weaver Bottoms project. Effluent quality from the fine material containment areas for the Weaver Bottoms project ranged from 151 to 167,000 milligrams per liter (mg/l) suspended solids. Mean suspended solids levels at distances greater than 50 feet from the effluent pipe ranged from 15 to 27 mg/l on 2 days of sampling. However, it took a few thousand feet from the effluent discharge to return to background. The effects of the proposed project on suspended solids may be slightly less because of the larger disposal area available on Rosebud Island for fine material disposal.

It is anticipated that the effluent return from the placement of the material on the highway right-of-way would produce only minor turbidity plumes for several reasons. Most of the material would be coarse.

Subimpoundments would be created along the highway fill area to trap as much of the fine material as possible for use as topsoil. In addition, the proposed road construction is located on an old glacial sand terrace and the coarse nature of the bed material should maximize seepage and minimize the generation of an effluent. Any effluent that is generated would be discharged back into Lake Onalaska via two routes. One route would discharge into a dry wash that enters a large marsh area, where further seepage and settling would occur, before being discharged into Halfway Creek. Restoration, if there are significant impacts on the marsh area, would be required. The other route would follow road right-of-ways and along the proposed City of Onalaska's storm sewer before being discharged into the project area.

The operation of the hydraulic cutterhead and the open water placement of the mixture of fine and coarse material into the borrrow area would also produce plumes in the area north of Rosebud Island. The borrow area would be completely enclosed by a silt screen, which because of the shallow water depths (less than two feet) would be staked in position to maximize effectiveness and minimize any potential failures. The potential effects on water quality from the operation of the hydraulic cutterhead, for at least the material to construct the islands and to provide the material for the Wisconsin DOT, would be mostly confined to the borrow and immediately adjacent area. The material dredged to complete the channel would be open water placement in this silt screened borrow area. Leakage from the borrow area would undoubtly occur, which would create some elevated turbidity in the adjacent areas. The combination of all the activities in the 300-acre area north of Rosebud Island is likely to produce elevated turbidity and suspended particulates in most of this area. It is anticipated that the existing vegetation and low flow conditions should increase the settling of suspended material and concentrate the major impact zone to this area. This would likely suppress aquatic plant growth, but should not produce long-term changes in the aquatic plant community. Wisconsin's standard of 80 mg/l for suspended solids is likely to be exceeded in this area.

Sediment cores of the fine material were collected from the proposed channel area and analyzed for bulk chemistry and acute toxicity. The results of bulk chemical analyses indicate that contaminants of concern are present only at relatively low levels for fine material on the Upper Mississippi River. The core profiles indicate that the material is both vertically and horizontally fairly homogeneous, which would indicate that potential "hot spots" of contamination are not likely to be present and exposed in the proposed channel area. Most of the contaminants that had detectable levels have a high affinity for being absorbed or adsorbed to fine particles and, subsequently, are not likely to be released during resuspension. The lack of detection of organics, such as PCBs, and the relatively low levels of metals detected indicates that no significant bioaccumulation of contaminants are likely to occur as a result of the construction of the project. No mortality was found when *Daphnia magna* and the midge, *Chironomus riporious*, were exposed to whole sediments for 48 hours. The results of these tests indicate that the dredging and disposal operations, including effluents from the containment areas, are not likely to cause toxic effects on endemic organisms.

The proposed channel and islands would have long-term beneficial impacts on water quality. One of the primary objectives of the island creations is to reduce wind-generated wave erosion of existing land areas and resuspension of the fine substrate present in Lake Onalaska. Therefore, the project should have long-term beneficial impacts of reducing suspended particulates and turbidity levels within a portion of Lake Onalaska. This may also reduce the high sedimentation rates, from fine material deposition, occurring in the southeast end of the lake. The southeast area of the lake contains most of the deeper water habitat remaining in the lake. These deepwater areas may be preserved longer as a result of the project.

The dredged channel would have a positive effect on dissolved oxygen levels. Much of the 300-acre area north of Rosebud Island experiences low dissolved oxygen during most winters. The proposed channel would carry a portion of the water that now flows south of Rosebud Island to north of Rosebud Island. Good dissolved oxygen should be maintained throughout the winter in the 90 acres of new channel. The circulation rate is calculated to be less than 3 days, and at that rate of circulation, no significant reductions in dissolved oxygen from oxygen demanding material and processes within the channel should occur. The effects of the channel on dissolved oxygen in the 220 acres adjacent to the proposed dredge cut are difficult to predict. Very little lateral dispersion of the water flowing in the channel would probably occur in the areas where shallow water (less than 3 feet) abuts the proposed channel and subsequently any benefits in increasing winter dissolved oxygen levels. The areas abutting the channel that have water depths greater than 3 feet may receive some lateral dispersion of flow from the channel. Therefore, an additional 80 acres outside the channel may see increased winter dissolved oxygen levels. The area north of Rosebud Island also experiences dissolved oxygen reductions during the summer. The channel would serve to reduce this problem as well.

THREATENED AND ENDANGERED SPECIES

The project would not directly affect roosting or nesting habitat of the bald eagle. The peregrine falcon reintroduction efforts in pool 5 should not be affected by the proposed project. Since the primary objective of the project is to enhance and maintain backwater habitat, long-term impacts to peregrine falcons and bald eagles should be neutral or slightly positive. The minor disturbance during the construction activity should not significantly affect either the peregrine falcon or the bald eagle use of the area during migrations.

The fine sediments present and limited flow at the proposed dredge cut and island areas are not suitable habitat for Higgins' eye pearly mussel; therefore, it is unlikely that Higgins' eye pearly mussel would be present and/or affected by the project.

The proposed project should not have significant effects on any Federal endangered species or their critical habitat. This opinion has been coordinated with the U.S. Fish and Wildlife Service and they concur (see attachment 6).

AIR QUALITY

There would be minor air quality impacts from the operation of the dredge and other construction equipment. Drying of the fine material, if removal of the fine material is determined to be necessary, could produce some minor odor. However, the Rosebud Island site is located far enough away from any local residents that the odor should not be a major problem and there should not be any health threat.

CULTURAL RESOURCES

Few impacts to cultural resources should result from the excavation of material from the channel area. Prior to the construction of Lock and Dam 7 in the mid-1930's, the channel area was low and marshy. Information on the pre-lock and dam habitat was determined by reviewing the Corps of Engineers survey maps dating to the early 1930's. It is likely that this habitat type, defined by the geomorphology of the Mississippi River, has been stable for a considerable time period and that this habitat was a resource used by prehistoric populations.

The project feature that has the greatest potential to affect archeological resources is the disposal areas for dredged material. Impacts associated with the disposal of dredged material come from the construction of containment dikes and the burial of archeological remains under the dredged material. Since the disposal area would be located on Rosebud Island, the containment dikes would be constructed by scraping the area along the perimeter of the 80-acre disposal site. Depending on the depth of material taken for the dike, undisturbed archeological resources could be affected. Once the dredged material has dried and consolidated, from less than 1 foot to 4 feet of material would remain on the surface of sites.

Any disposal area located on Rosebud Island would have a chance of affecting archeological resources. Unless the disposal area is located within an area that has been previously surveyed and no sites were recorded during the survey, additional archeological survey must be completed prior to construction. Any future survey efforts should focus on locating areas on Rosebud Island where no archeological resources exist. If no area can be found where archeological resources are not present, testing of archeological sites will be necessary to determine their eligibility for the National Register of Historic Places. Further excavation may be required for resources determined to meet the criteria of the National Register.

Another component of this project is the construction of islands in Lake Onalaska. These islands would reduce the amount of erosion of existing land surfaces by reducing the fetch across Lake Onalaska. They would also provide for wildlife habitat. The islands would provide some protection for existing islands that have been eroding. A number of archeological sites have been located on these small islands. At McIllvain Island, archeological work by the University of Wisconsin - La Crosse, done under contract with both the U.S. Fish and Wildlife Service and the St. Paul District, has recorded prehistoric human burials. This could have a beneficial impact by protecting archeological sites and human remains from further erosion.

Coordination has been initiated with the State Historic Preservation Office, the State Archeologist, and the National Park Service. Depending upon the results of the survey effort and any necessary testing, further coordination with the State Historic Preservation Office and the Advisory Council on Historic Preservation may be required, in accordance with 36 CFR, Part 800. Should human remains be found that would be affected by any phase of the project, coordination with the Burial Sites Preservation Board would be required under Chapter 157 of the Wisconsin State Statutes.

SOCIOECONOMIC RESOURCES

The proposed plan would not have impacts on the following Section 122 (Rivers and Harbors Act) socioeconomic categories: aesthetic values, transportation, public health and safety, community cohesion, community growth and development, business or home relocations, land use, property values, tax revenues, regional growth, employment, business activity, food supply, navigation, flooding effects, or energy resources. This is because the project would be on Corps-owned land and would be entirely federally funded. Therefore, typical impacts of cost-shared projects in small communities would not be expected.

Socioeconomic impacts would potentially be experienced in these areas: temporary effects on noise levels and longer term effects on recreation opportunities, controversy, and public facilities and services. During construction, dredging and earthmoving activities would be noisy. There are very few people in the area to be affected by the noise. If an upland booster pumping station is needed to lift the dredged material to the highway placement site, it would be located as far away from any residential areas as is practicable, to minimize disturbance. Minor odor problems may occur during drying of the fine dredged material.

Outdoor recreation would be expected to improve slightly because improved fish and other wildlife habitat would be expected to result in better fishing and hunting experiences in the area.

Without the project, degradation of habitat and water quality would continue. Present conditions have prompted some complaints, and continued degradation would be expected to generate an increased level of complaints from members of the public and organizations who monitor environmental quality.

Improvements in a public facility would be gained because a designated wildlife area would realize improved fish and other wildlife habitat. In addition, water quality in Lake Onalaska would be improved. A survey of public attitudes conducted on behalf of the St. Paul District, Corps of Engineers in 1986 revealed that there is widely based public support for improved environmental conditions on the Upper Mississippi River.

RECREATIONAL RESOURCES/AESTHETIC VALUES

The aesthetic quality of the area would be reduced during the construction because of the presence and operation of the dredging and other construction equipment. However, the location of the project away from major highways would minimize any short-term visual impacts associated with the construction activities. The placement of material at the island sites would cause a turbidity plume, which may reduce temporarily the aesthetic quality of the area. The proposed islands are consistent with existing visual characteristics of broad vistas of open water area bordered by a series of irregular shaped islands with sparse ground-cover vegetation. Any efforts that improve the fishery and wildlife habitat in this area will benefit the existing recreational activities. Recreational boating is not expected to be affected, since the majority of this activity occurs downstream of the project, closer to the city of La Crosse, Wisconsin.

COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

The proposed action would comply with Federal environmental laws, executive orders and policies, and State and local laws and policies, including the Clean Air Act, as amended; the Endangered Species Act of 1973, as amended; the Clean Water Act of 1977; the Land and Water Conservation Fund Act of 1965, as amended; the National Historic Preservation Act of 1966, as amended (partial); the Fish and Wildlife Coordination Act of 1958, as amended (see attachment 6); the Farmland Protection Policy Act; Executive Order 11988, Floodplain Management; and Executive Order 11990, Protection of Wetlands.

PROJECT REQUIREMENTS

OPERATION AND MAINTENANCE

After construction of the project, operation and maintenance of the project would be the responsibility of the U.S. Fish and Wildlife Service. Periodic maintenance on the islands may be required to repair erosion or displaced riprap. In addition, the islands will require periodic burning, and perhaps replanting with other seed varieties, to maintain them as desirable waterfowl nesting sites. Sedimentation of the channel cut will likely occur to some extent, but with the deeper dredging in the borrow area to meet the Wisconsin DOT highway fill requirements, no future maintenance dredging would be required because a sediment trap will be created. Over the 50-year project life, the average annual maintenance cost of the habitat project without and with the highway project is estimated to be $30,000 and $3,000, respectively.

COST ESTIMATE

A detailed cost estimate is shown below. Costs are presented assuming the habitat and highway projects are constructed independently and also as a joint project. Estimated cost savings for constructing both projects jointly are also shown.

ITEM	QUANTITY	UNIT	UNIT COST	INDEPENDENT PROJECTS CORPS COST	INDEPENDENT PROJECTS WDOT COST	INDEPENDENT PROJECTS TOTAL COST	JOINT CORPS AND WDOT PROJECT CORPS COST	JOINT CORPS AND WDOT PROJECT WDOT COST	JOINT CORPS AND WDOT PROJECT TOTAL COST
Mob and demobilization	SUM	Job	---	$30,000	$30,000	$60,000	$15,000 *	$15,000	$30,000
Dredging fine sediments	380,000	CY	$3.00	$1,140,000	-	$1,140,000	-	-	-
Dredging (to islands)	220,000	CY	$2.00	$440,000	-	$440,000	-	-	-
Dredging (to highway)	1,000,000	CY	$3.00	-	$3,000,000	$3,000,000	-	-	-
Dredging (to islands)**	160,000	CY	$3.00	-	-	-	$480,000	-	$480,000
~~Dredging (to borrow)~~	~~380,000~~	~~CY~~	~~$1.00~~	-	-	-	~~$380,000~~	-	~~$380,000~~
Dredging (to highway)	~~60~~ 40	CY	$3.00	-	-	-	~~$90,000~~ *	~~$90,000~~	~~$180,000~~
Dredging (to highway)	940,000	CY	$3.00	-	-	-	-	$2,820,000	$2,820,000
Riprap	30,800	CY	$22.00	$678,000	-	$678,000	$678,000	-	$678,000
Topsoil	5,400	CY	$5.00	$27,000	-	$27,000	$27,000	-	$27,000
			Subtotal	$2,315,000	$3,030,000	$5,345,000	$1,670,000	$2,925,000	$4,595,000
			Contingencies (20%)	$465,000	$610,000	$1,075,000	$340,000	~~$585,000~~	~~$925,000~~
			Total direct costs	$2,780,000	$3,640,000	$6,420,000	$2,010,000	$3,510,000	$5,520,000
			Eng & Design***	$417,000	$548,000	$965,000	$280,000	$548,000	$828,000
			Super & Admin	$223,000	$292,000	$515,000	$140,000	$302,000	$442,000
			TOTAL COST	$3,420,000	$4,480,000	$7,900,000	$2,430,000	$4,360,000	$6,790,000

*Assumes cost apportionment of 50% CORPS and 50% WDOT

**Quantity reflects minimum estimated amount needed to construct islands. Unit cost reflects assumption that containment of some fine sediments on Rosebud Island will be necessary

***Includes prior fiscal year allocations of $60,000

****Based on cost reimbursement presented in this report (includes E&D and S&A reimbursement to WDOT of $50,000)

JOINT PROJECT SAVINGS****	CORPS	WDOT
CONSTRUCTION	$990,000	$170,000
O&M	$1,350,000	$0
SUB-TOTAL	$2,340,000	$170,000
TOTAL SAVINGS=	$2,510,000	

Annual O&M Cost without WDOT = $30,000
Annual O&M Cost with WDOT = $3,000

Annualized first costs (based upon a 50-year economic life, an 8-5/8% discount rate, and sharing the project with the Wisconsin DOT) would amount to $213,000. With the addition of annual operation and maintenance costs as shown above, total average annual costs are estimated to be $216,000.

Performance

PROJECT EVALUATION

Continuous summer and winter dissolved oxygen studies of the area north of Rosebud Island have been conducted by the Wisconsin Department of Natural Resources over 2 years to identify the resource problem and to provide preproject information. These studies would be duplicated after completion of the project. Flow studies of the area north and south of Rosebud Island would also be conducted annually during the summer under low river flow conditions and during late winter. These flow studies would include dye studies to determine the extent of the area outside the channel that benefits from increased water circulation. Preproject dye studies have been completed by the Wisconsin Department of Natural Resources. Bathymetric surveys of the channel would be conducted immediately and three years after project completion to assess the stability and/or changes in the channel morphology. Island stability would be evaluated annually by visual inspections and from any available aerial photography that may be collected for other purposes.

inconsistent with pgs 4/5 of addendum

Winter creel surveys of the Rosebud Island area and Lake Onalaska were completed by Rach and Meyers (1978) and by Holzer (1988). To measure the value of the proposed project in providing winter fisheries habitat, it is recommended that the Wisconsin DNR conduct a winter creel survey 2 to 3 years after construction of the project (allowing some time for the project area to stabilize). The winter dissolved oxygen and flow studies would provide the necessary information to determine if the desired wintering requirements continue with time and/or for a variety ice and snow conditions. It is recommended that the U.S. Fish and Wildlife Service study the vegetation on the islands every year for the first 3 years and at prescribed intervals thereafter, defined by the information needed to perform normal maintenance. The vegetation study would consist of a modified simple random sampling program. At each of the island sites, 15 to 20 quarter-square meter sample plots would be recorded for percent cover and species composition. Average height of the vegetation would also be measured. A slide file would be maintained to assess visual changes. Aquatic vegetation that might develop around the island would be qualitatively assessed for composition and abundance. Waterfowl nest searches would be performed on the islands for the first 3 years following the procedures used by Nicklaus (WDNR Mississippi River Work Unit, 1980).

take out recommended

performance will be repeated every year > 3 years and stop?

PROJECT IMPLEMENTATION

DIVISION OF PLAN RESPONSIBILITIES

The responsibilities of plan implementation and construction fall to the Corps of Engineers as the lead Federal agency. However, the Wisconsin Department of Transportation would prepare plans and specifications and administer the construction contract. Operation and maintenance of the completed project would be the responsibility of the U.S. Fish and Wildlife Service.

COST APPORTIONMENT

Construction - All project construction activities would be conducted on the Upper Mississippi River National Wildlife and Fish Refuge. Therefore, in accordance with Section 906(e)(3) of Public Law 99-662, the first costs for construction of the project would be 100 percent Federal and would be borne by the Corps of Engineers. The project would be constructed under the management of the Corps of Engineers so a local sponsor would not be necessary for construction. However, linking the habitat project with the Wisconsin DOT highway project makes cost sharing of construction costs beneficial to both agencies. The Wisconsin DOT would be reimbursed for work performed for the habitat project as described earlier in this report.

Operation and Maintenance - After construction of the project, annual management operations would be conducted by the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service will assure that non-Federal operation and maintenance responsibilities are in conformance with Section 906(e) of the Water Resources Development Act of 1986. The non-Federal sponsor of all Upper Mississippi River System Environmental Management Program projects in Wisconsin is the Wisconsin Department of Natural Resources. Specific operation and maintenance features would be defined in an Operation and Maintenance Manual for the project which would be prepared by the Corps during the plans and specifications phase.

STEPS PRIOR TO PROJECT CONSTRUCTION

After submittal of this report to higher authority, funds for final detailed design and plans and specifications can be provided by the Office of the Chief of Engineers (OCE), prior to approval of the project by the Assistant Secretary of the Army (Civil Works), upon a recommendation from Civil Works Planning after OCE staff review of this report. Final detailed design of the project would then be initiated by the Corps of Engineers. The current schedule is to complete the final design by September 1, 1988, so that the Wisconsin DOT can then prepare plans and specifications for construction of the combined habitat and highway projects. The contract would be advertised in December 1988 by the competitive bid process and awarded in February 1989 by the Wisconsin DOT. A construction start is anticipated for the third quarter of fiscal year 1989. Construction would be completed in fiscal year 1990.

RECOMMENDATIONS

I recommend that the Secretary of the Army approve this project for habitat rehabilitation and enhancement at Lake Onalaska in La Crosse County, Wisconsin. The total estimated Federal construction cost of the habitat project is $2,430,000, which amount would be a 100-percent Federal cost according to Section 906(e)(3) of Public Law 99-662. The Wisconsin Department of Transportation would prepare plans and specifications and administer the construction contract to accomplish both the proposed habitat project and the highway project, with reimbursement to the DOT currently estimated at $2,060,000. The Corps of Engineers would prepare final habitat project designs, review and approve plans and specifications, and inspect construction of the habitat project. I further recommend that funds in the amount of $32,000 be allocated in fiscal year 1988 for: (1) subsurface exploration and surveys for locating islands and identifying construction material; (2) final detailed project design; (3) beginning the preparation of plans and specifications; and (4) necessary coordination activities.

LTC, CE, DOE

Roger L. Baldwin
Colonel, Corps of Engineers
District Engineer

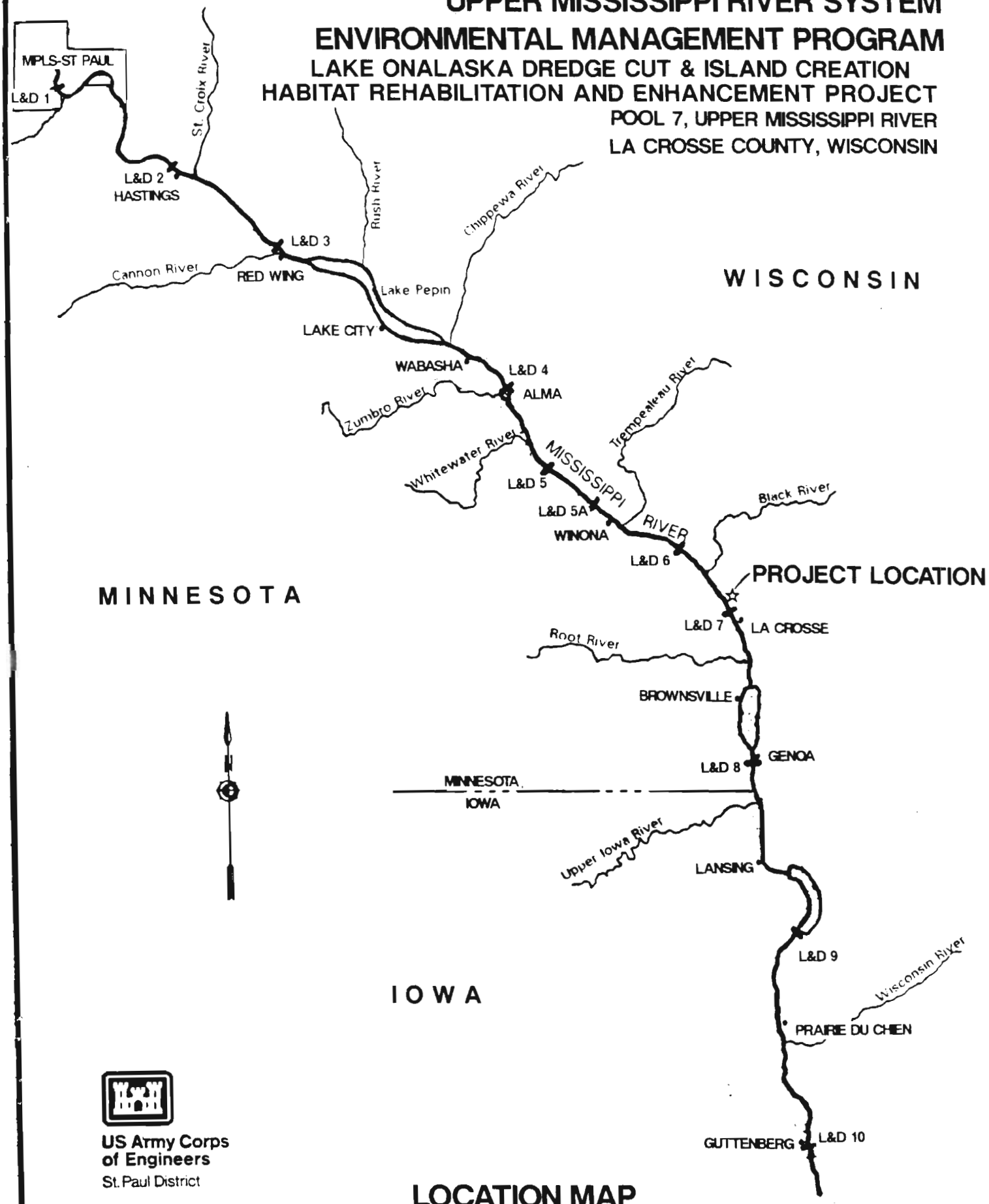
Attachments:

1. Plates:
   - Location Map
   - Project Area Map
   - WDOT Project Area Map
   - Rosebud Island Disposal Area
   - Soil Boring Locations
   - Soil Borings - 87-1M & 87-2M
   - Soil Borings - 87-3M & 87-4M
   - Soil Borings - 87-5M & 87-6M
   - Existing Depths Map
   - Sedimentation Pattern
   - Typical Channel X-Section
   - Typical Borrow/Channel X-Section
   - Typical Island Topview
   - Typical Island X-Section
   - Location of Sediment Sampling Sites
2. Finding of No Significant Impact
3. Section 404(b)(1) Evaluation Report
4. Section 215 Agreement
5. Coordination
6. Distribution List
7. References Cited

Attachment 1

Plates

UPPER MISSISSIPPI RIVER SYSTEM
ENVIRONMENTAL MANAGEMENT PROGRAM
LAKE ONALASKA DREDGE CUT & ISLAND CREATION
HABITAT REHABILITATION AND ENHANCEMENT PROJECT
POOL 7, UPPER MISSISSIPPI RIVER
LA CROSSE COUNTY, WISCONSIN

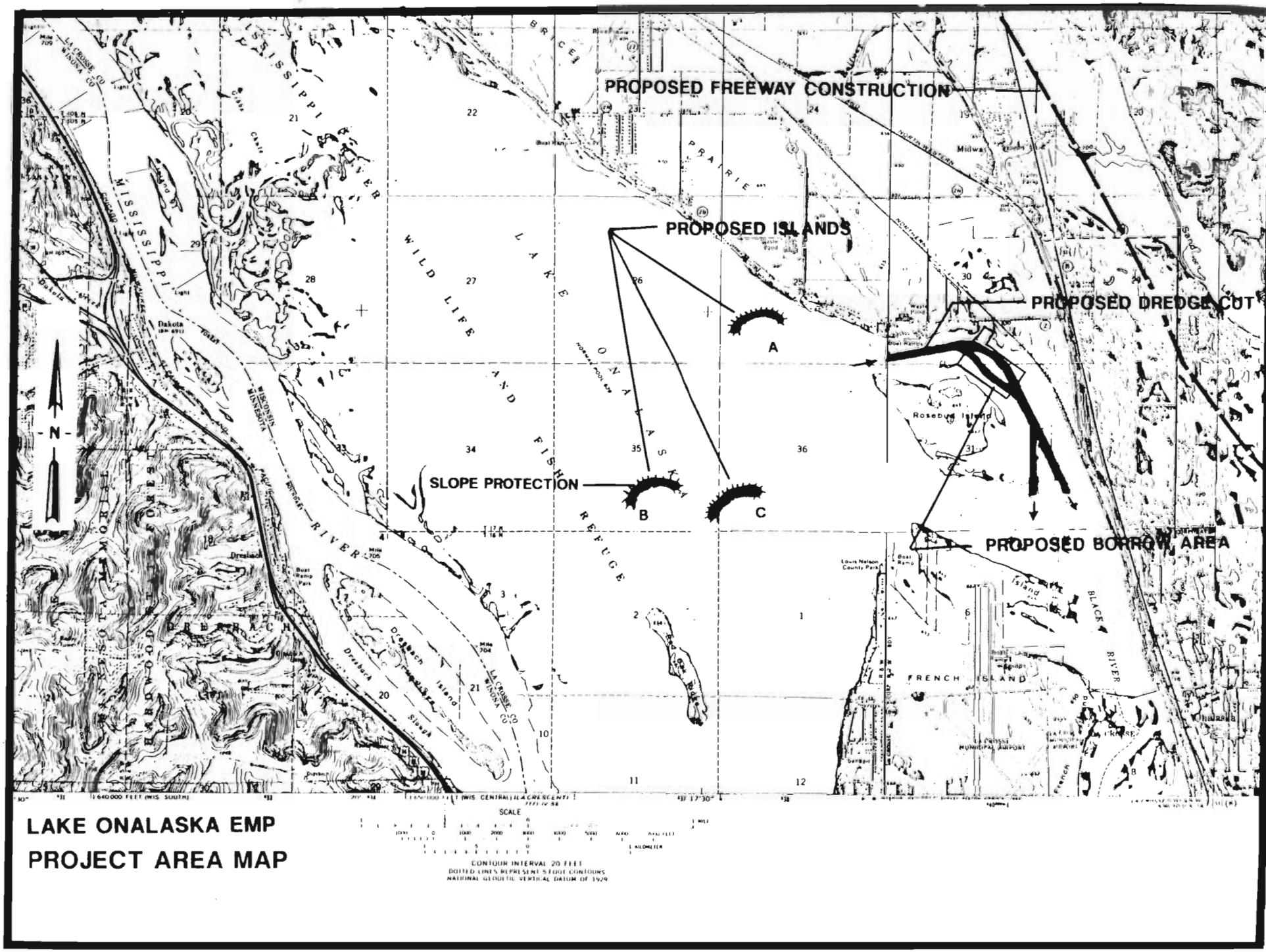


US Army Corps
of Engineers
St. Paul District

LOCATION MAP

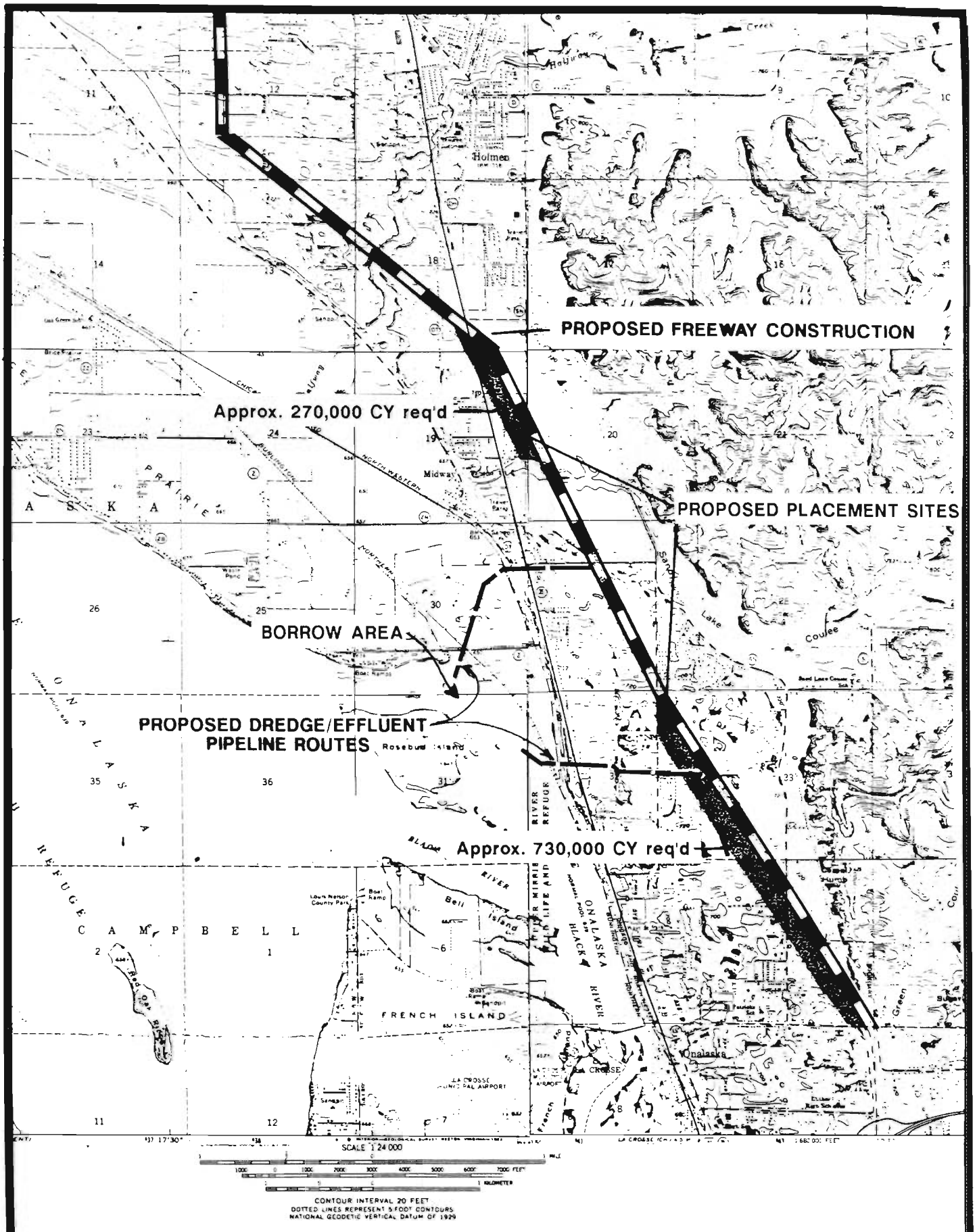
PLATE 1

PLATE 2



LAKE ONALASKA EMP

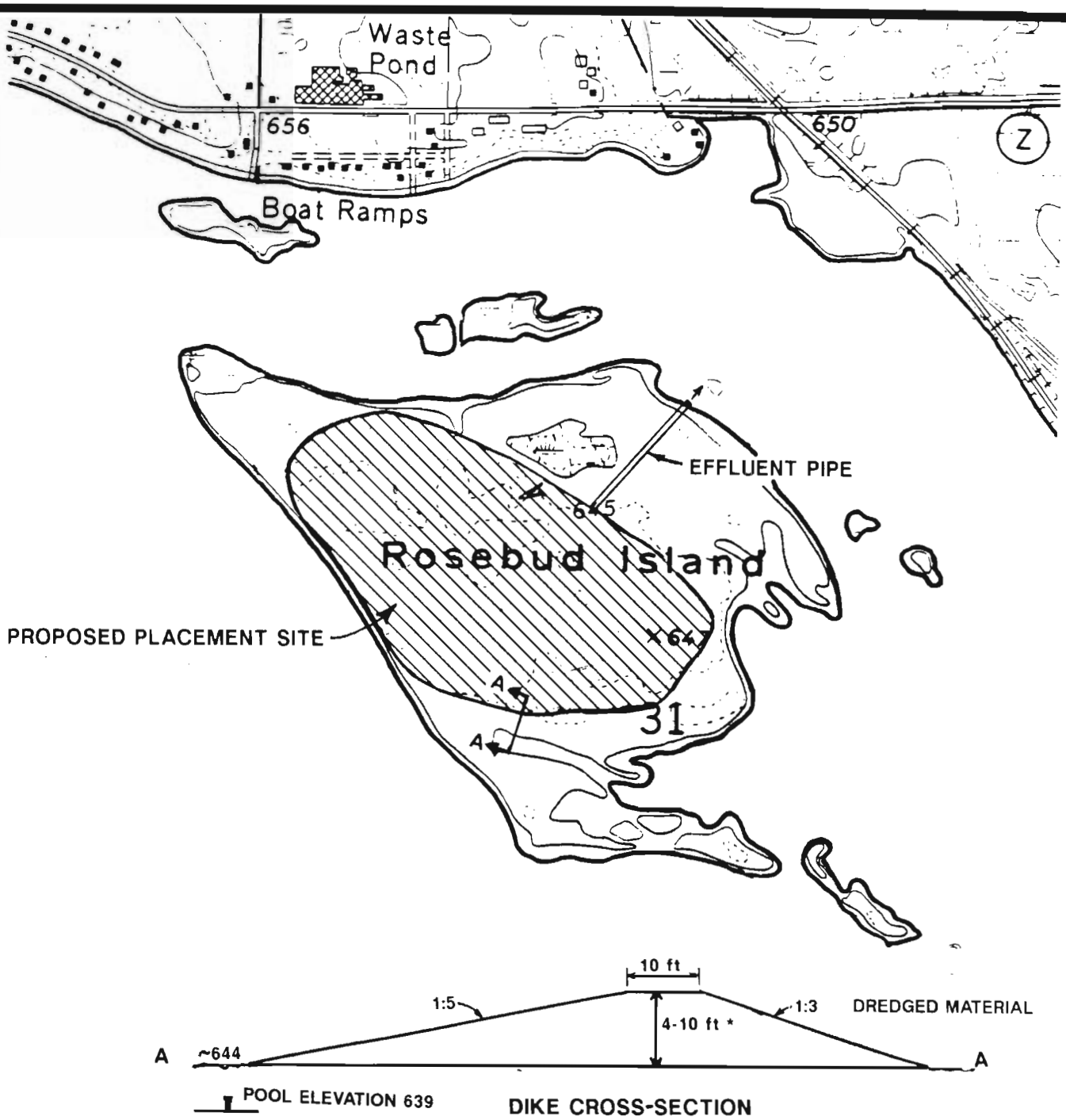
PROJECT AREA MAP



LAKE ONALASKA EMP

WISCONSIN DOT PROJECT AREA MAP

PLATE 3



*Actual dike height determined by quantity of material to be placed on Rosebud Island

LAKE ONALASKA EMP

ROSEBUD ISLAND PLACEMENT SITE

PLATE 4

PLATE 5

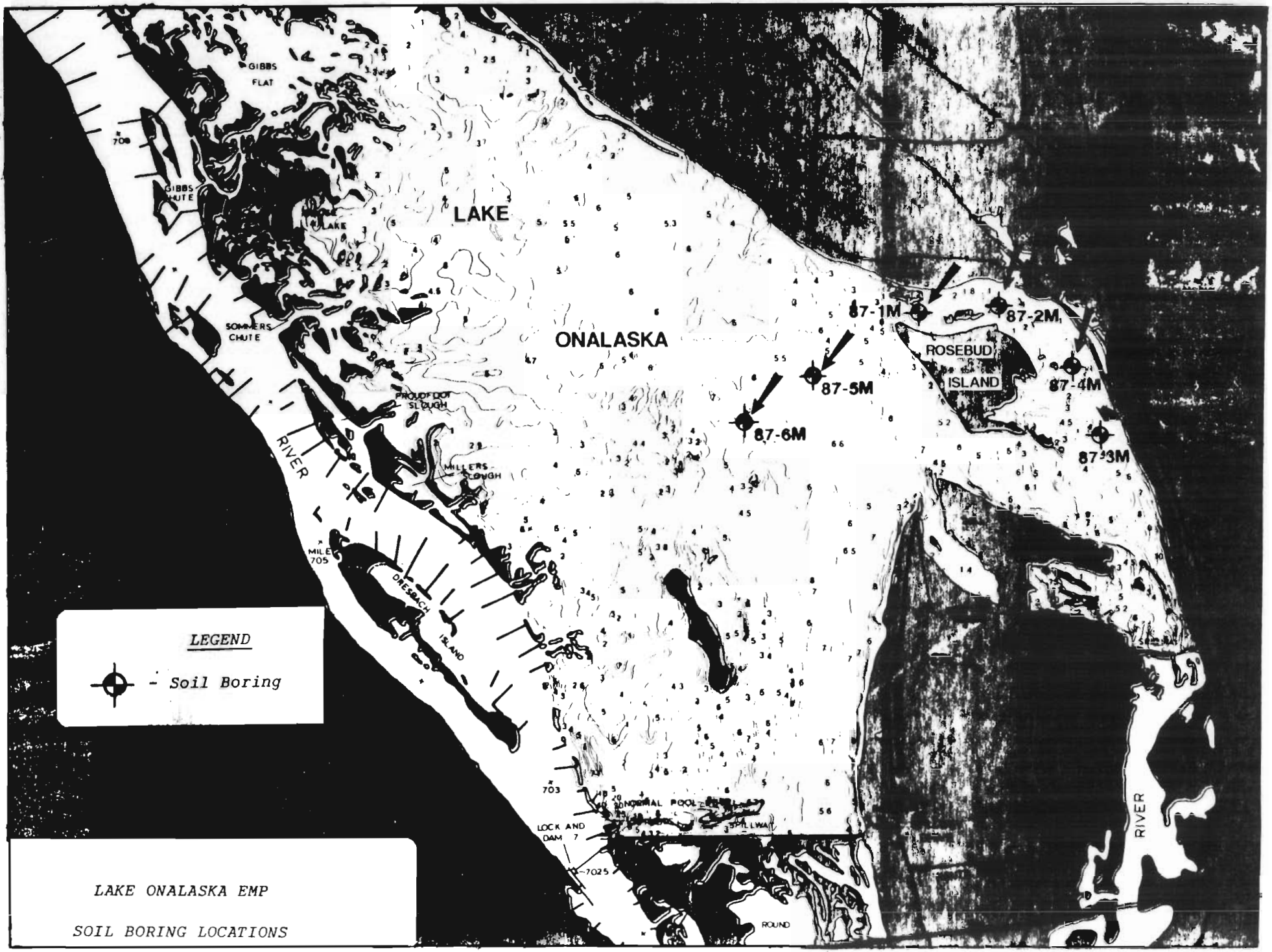
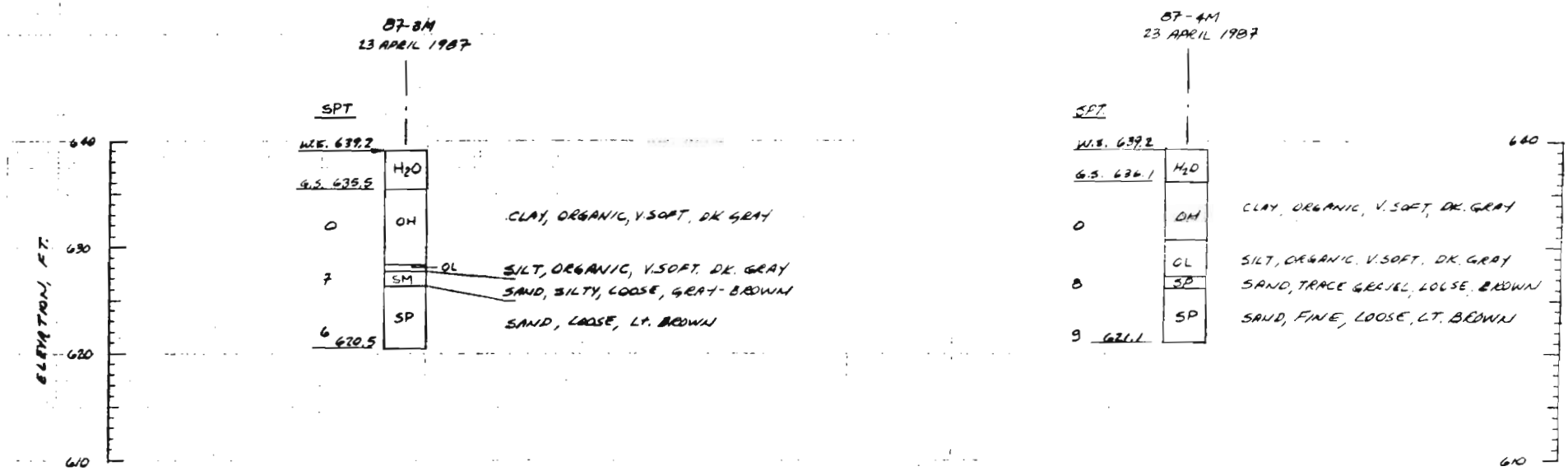

GIBBS FLAT
GIBBS CHUTE
LAKE
LAKE ONALASKA
SOMMERS CHUTE
PROUDFOOT SLOUGH
MILLERS SLOUGH
RIVER
MILE 705
DRESBACH ISLAND
87-1M
87-2M
87-3M
87-4M
87-5M
87-6M
ROSEBUD ISLAND
LOCK AND DAM 7
NORMAL POOL
RIVER
LEGEND
- Soil Boring
LAKE ONALASKA EMP
SOIL BORING LOCATIONS

PLATE 7

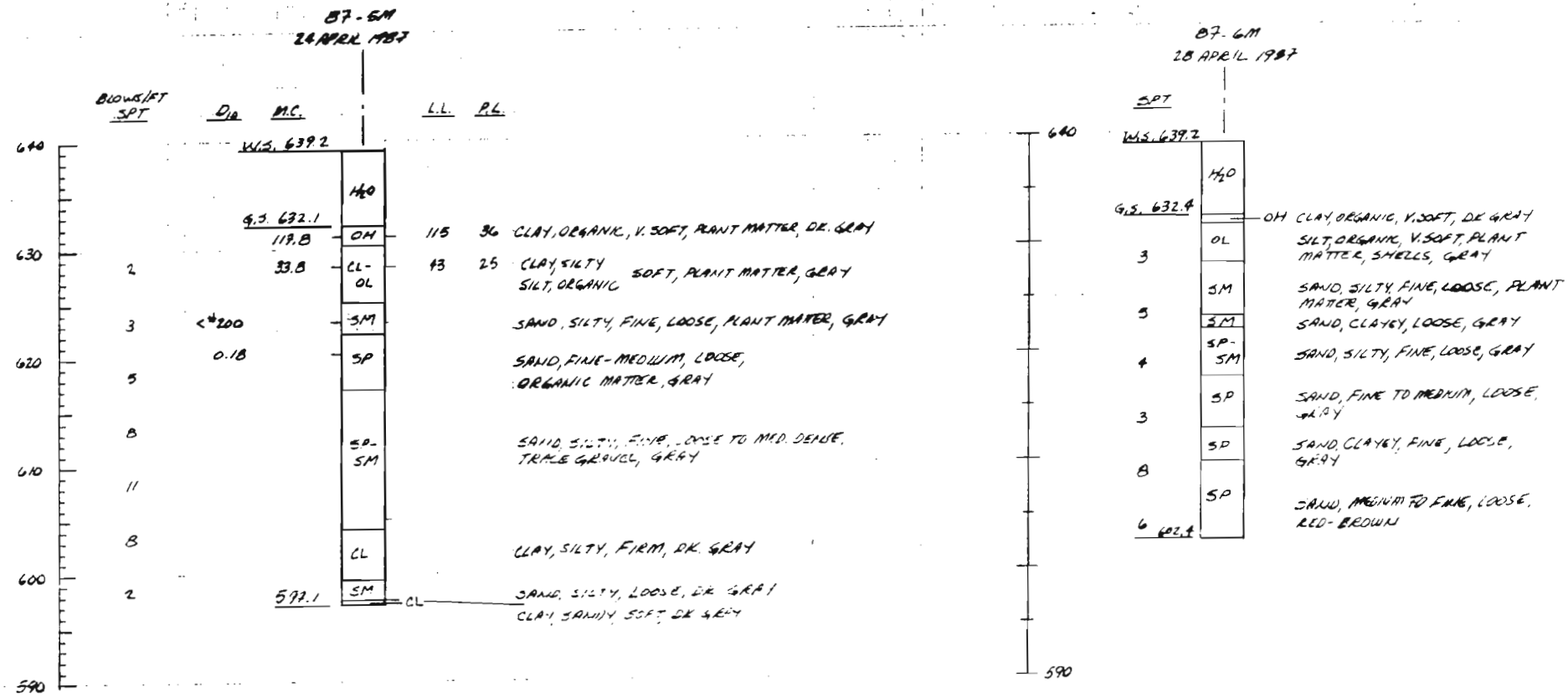


LAKE ONALASKA EMP

SOIL BORINGS

87-3M & 87-4M

PLATE 8

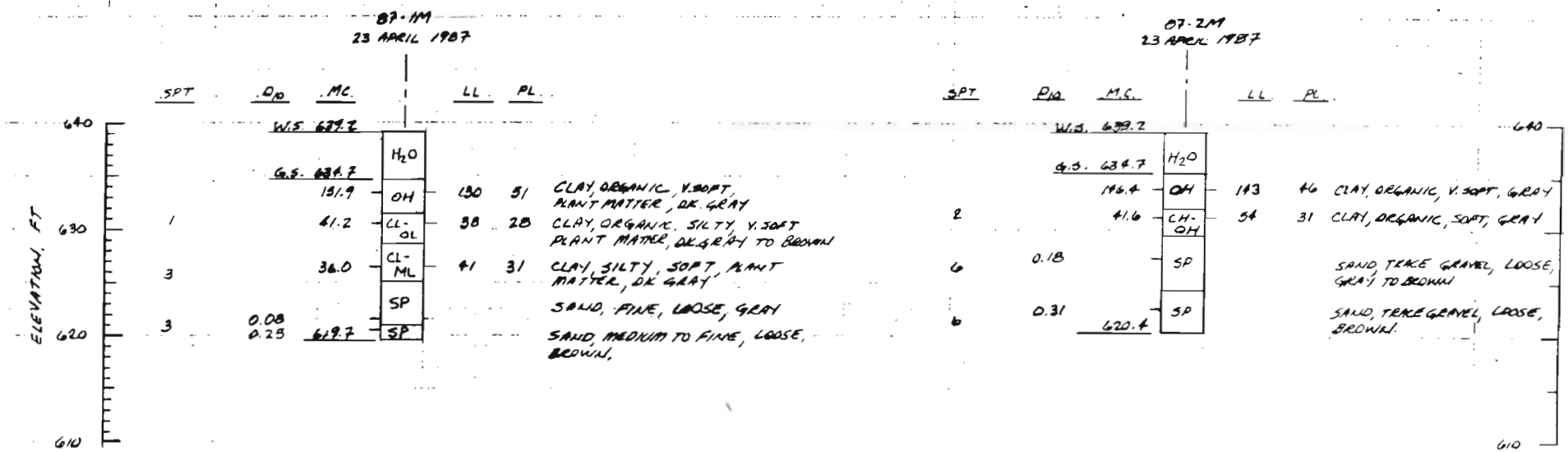


LAKE ONALASKA EMP

SOIL BORINGS

87-5M & 87-6M

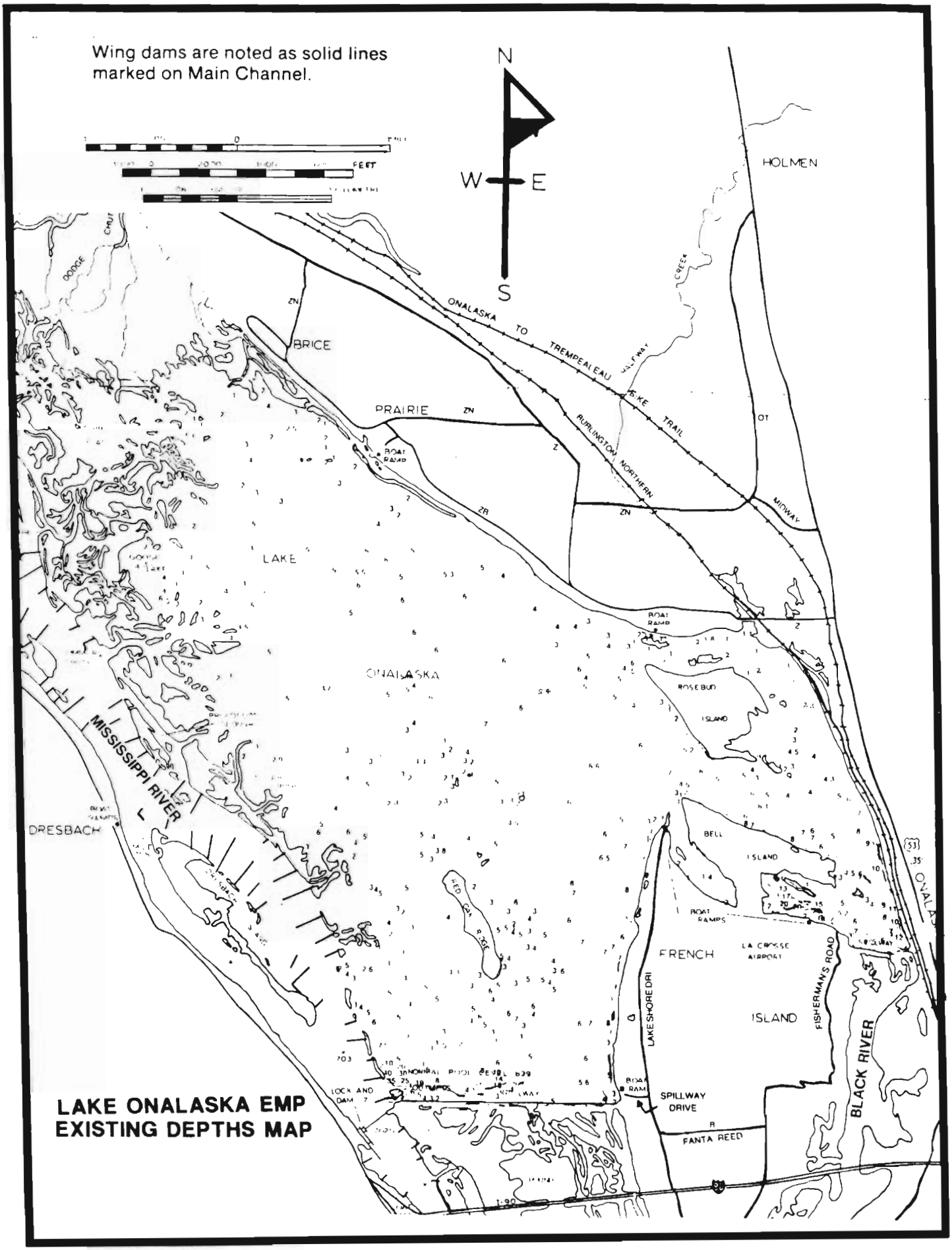
PLATE 6



LAKE ONALASKA EMP

SOIL BORINGS

87-1M & 87-2M



LAKE ONALASKA EMP
EXISTING DEPTHS MAP

PLATE 9

POOL7 - 1933 - 1983 SEDIMENTATION

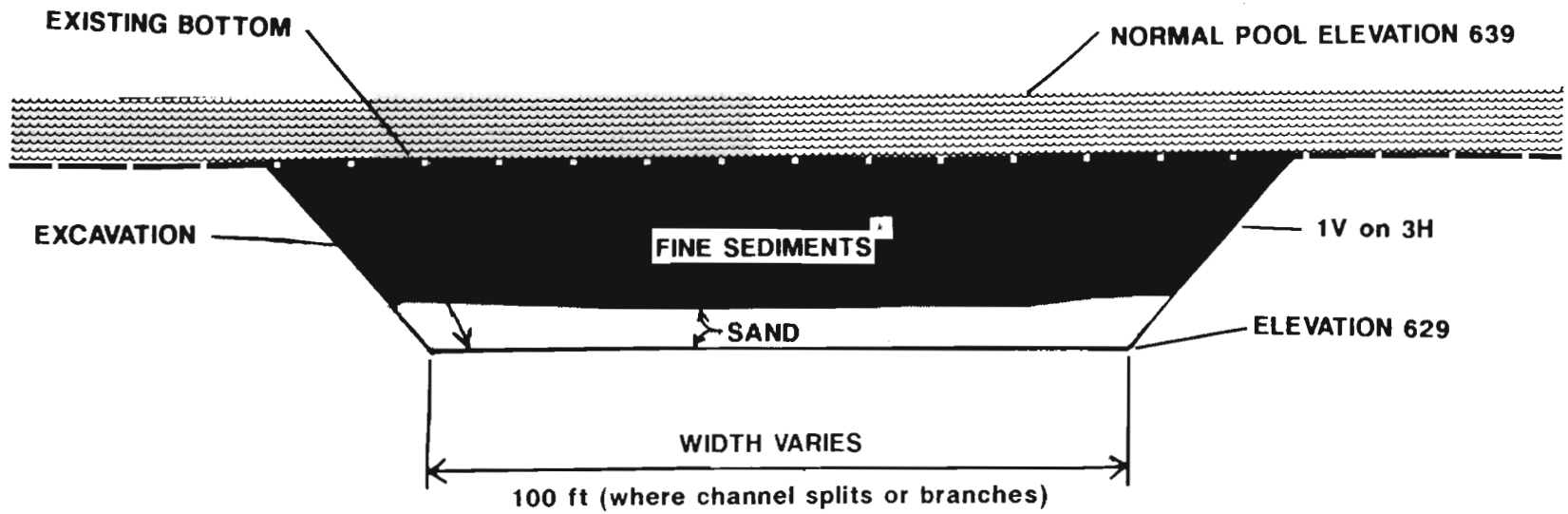
LAKE ONALASKA
SEDIMENTATION PATTERN

1933 - 1983 SEDIMENTATION
LAKE ONALASKA

SYMBOL	COUNT	PERCENT	ACRES	LEGEND
R 1	7778	17.2	1815.3	1-10 CM OF SEDIMENT GAIN
R 2	7386	16.3	1154.1	11-20 CM OF SEDIMENT GAIN
R 3	6187	13.7	966.7	21-30 CM OF SEDIMENT GAIN
R 4	3792	8.4	592.5	31-40 CM OF SEDIMENT GAIN
R 5	2354	5.2	367.8	41-50 CM OF SEDIMENT GAIN
R 6	1527	3.4	238.6	51-60 CM OF SEDIMENT GAIN
R 7	691	1.5	108.0	61-70 CM OF SEDIMENT GAIN
R 8	246	0.5	38.4	71-80 CM OF SEDIMENT GAIN
R 9	33	0.1	5.2	81-90 CM OF SEDIMENT GAIN
R 10	2	0.0	0.3	91-100 CM OF SEDIMENT GAIN
11	2187	4.8	341.7	NO CHANGE
12	12994	28.8	2030.3	SEDIMENT LOSS

PLATE 10

PLATE 11

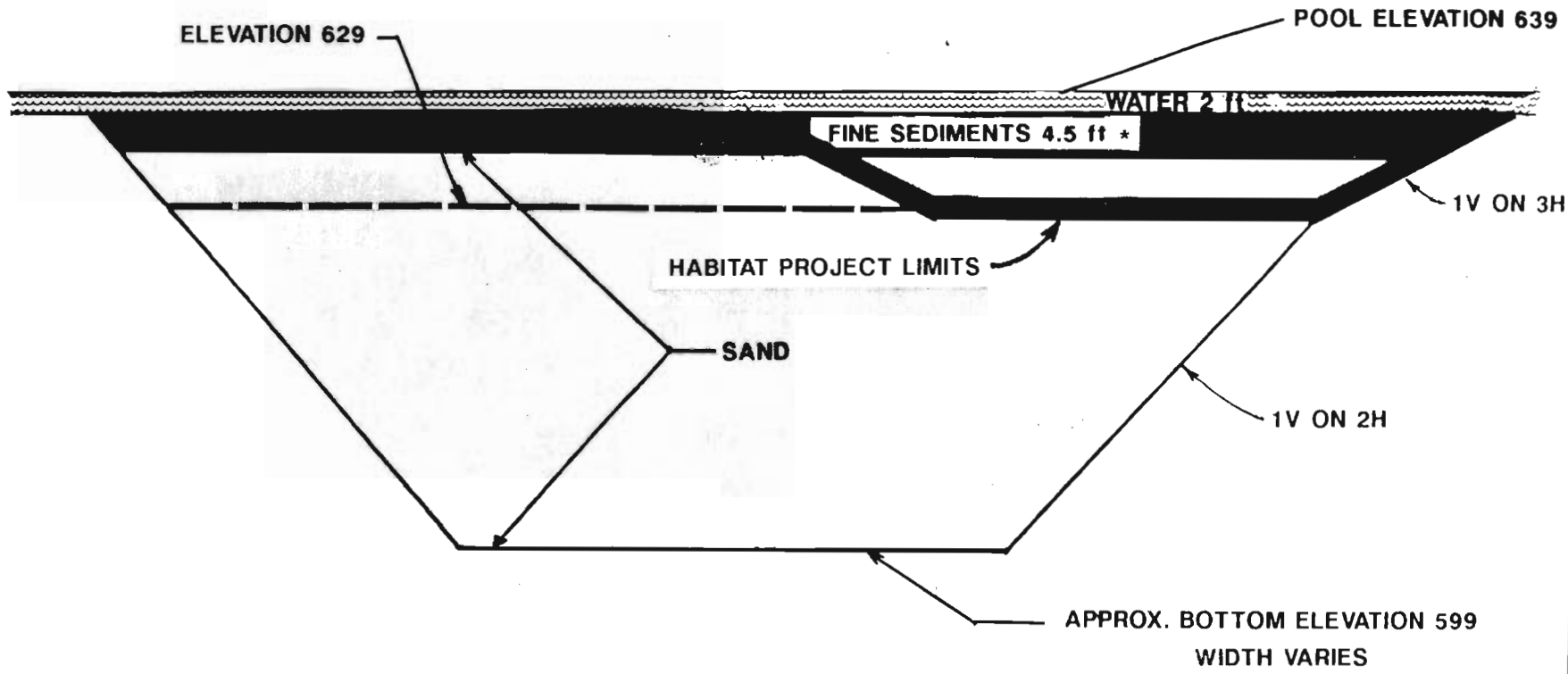


NO SCALE

*Average thickness of fine sediment layer estimated

LAKE ONALASKA EMP
TYPICAL CHANNEL CROSS-SECTION

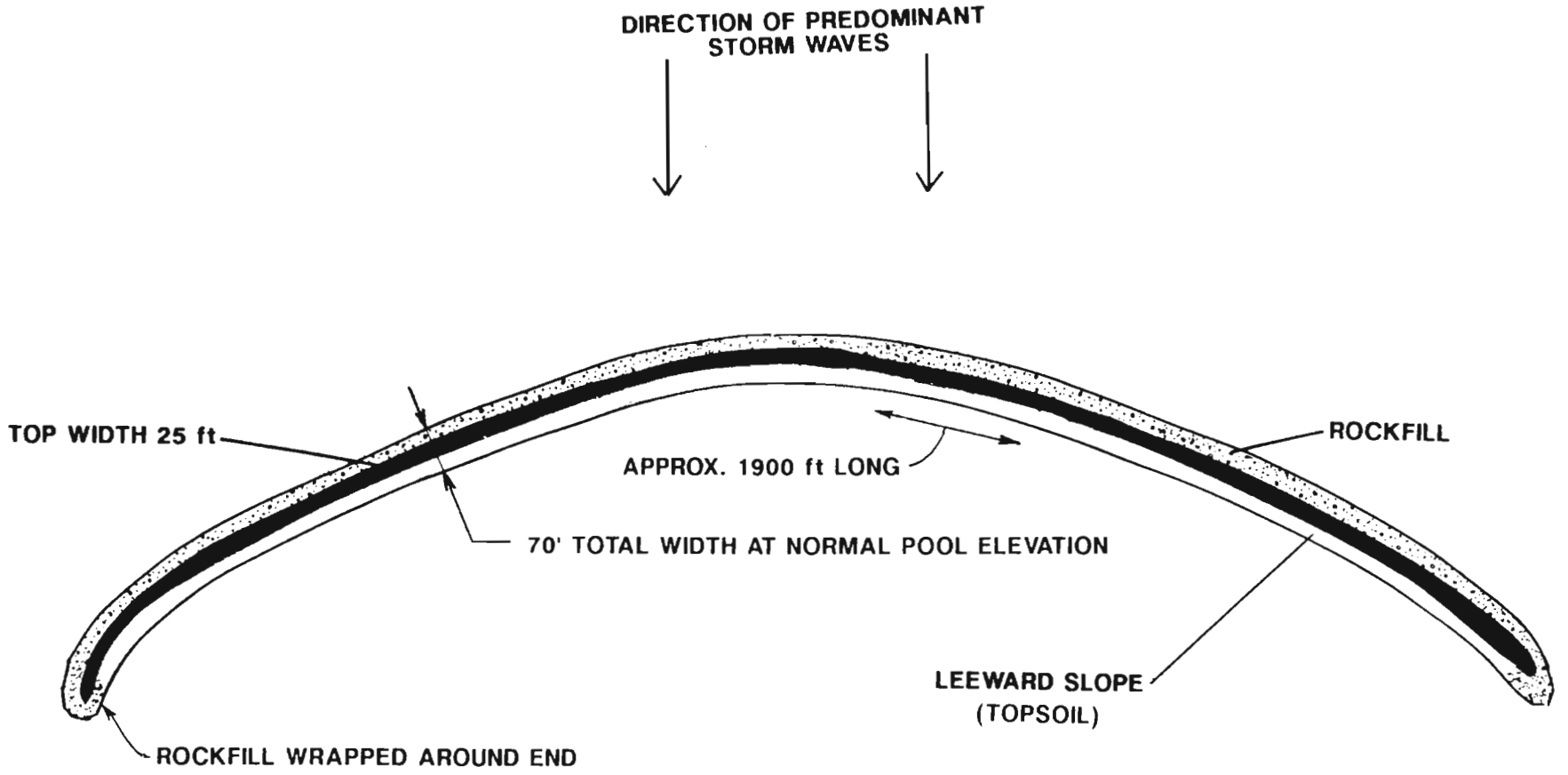
PLATE 12



*Estimated average thickness of fine sediment layer

LAKE ONALASKA EMP
TYPICAL BORROW CROSS-SECTION

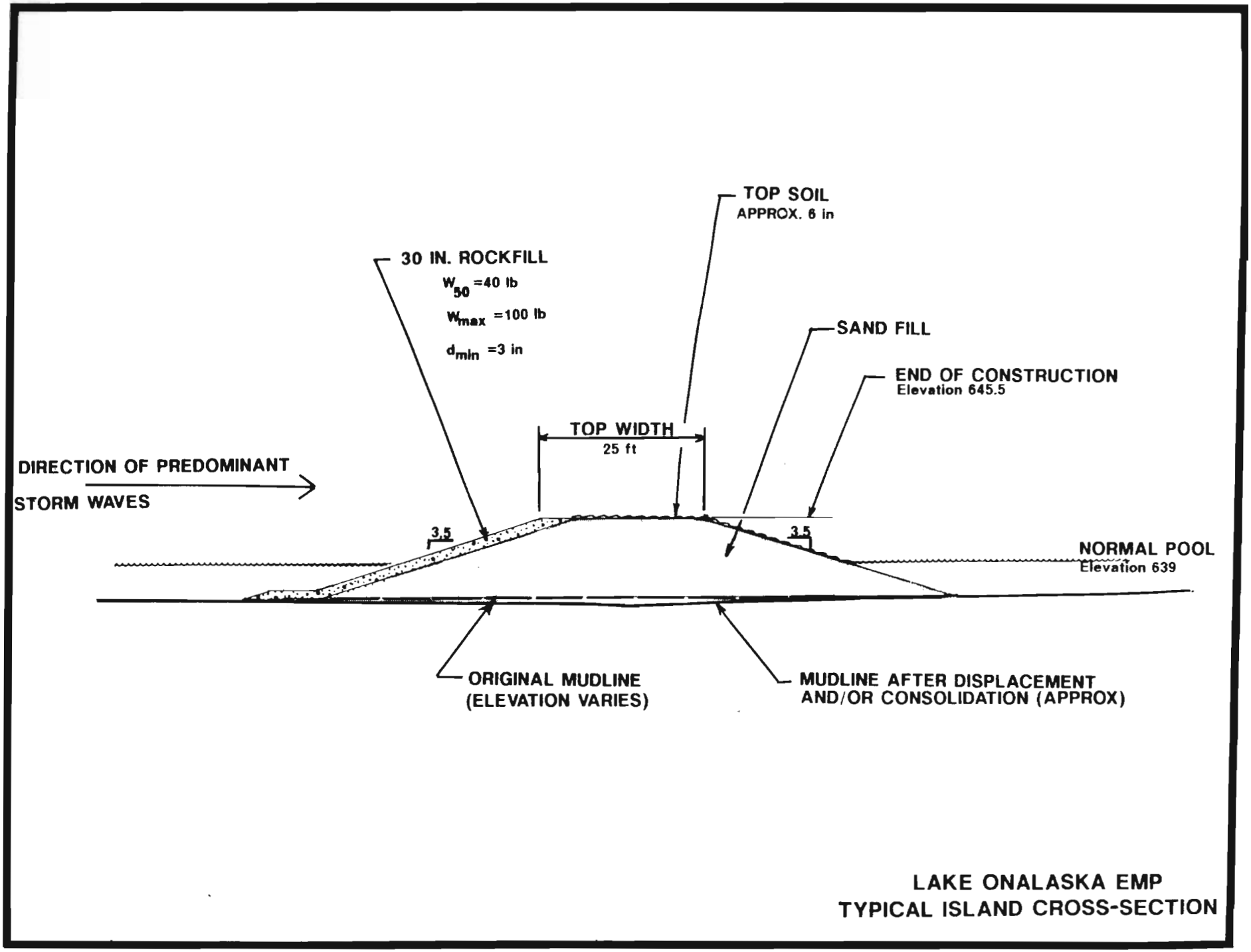
PLATE 13



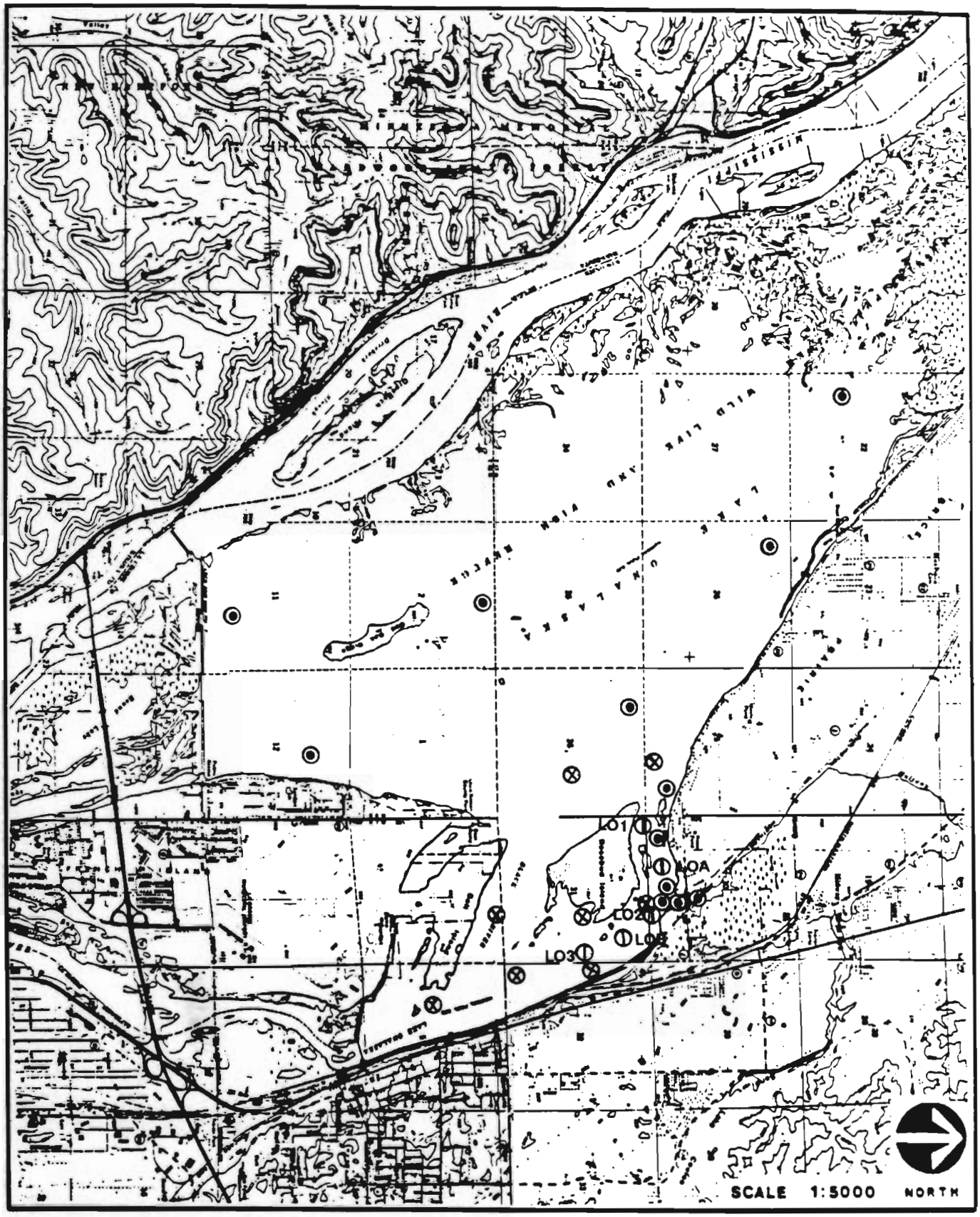
LAKE ONALASKA EMP

TYPICAL ISLAND PLAN VIEW

PLATE 14



LAKE ONALASKA EMP
TYPICAL ISLAND CROSS-SECTION



⊗ FWS PCBs SITES 1979/1980

◉ FWS SITES 1983/1984

◐ CORPS OF ENGINEERS SITES 1987/1988

LOCATION OF SEDIMENT SAMPLING SITES

PLATE 15

Attachment 2

Finding of No Significant Impact

Attachment 3

Section 404(b)(1) Evaluation Report

Environmental Resources Branch
Planning 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 environmental impacts of the following proposed project.

LAKE ONALASKA DREDGE CUT AND ISLAND CREATION
ENVIRONMENTAL MANAGEMENT PROGRAM
POOL 7, UPPER MISSISSIPPI RIVER

The proposed work involves the creation of a 10,000-foot-long, 10-foot-deep dredge channel north of Rosebud Island and creation of 3 barrier islands in Lake Onalaska, around 4 acres each in size (see plate 2). The purpose of the dredge cut is to restore winter and late summer fisheries habitat behind Rosebud Island in Lake Onalaska by the creation of slow flowing, deepwater habitat. The purposes of the island restorations in Lake Onalaska are to improve water clarity, reduce wind-induced erosion on existing land areas, restore habitat diversity that has been lost, and provide good waterfowl nesting and loafing habitat. Therefore, the project should have long-term beneficial impacts on fish and wildlife. Around 160,000 cubic yards of the coarse, sand material from the channel area would be needed to create the islands, which would be stabilized with 30,800 cubic yards of graded riprap and 6 inches of topsoil on the non-riprapped areas. The Wisconsin Department of Transportation (WDOT) needs around 1,000,000 cubic yards of sand material for road fill for their proposed Highway 53 upgrade. The proposed channel area has from 2 to 7 feet of fine material on top of a sand base, making this material generally unsuitable for island creation and road fill. Therfore, the material for road fill and island creation would be obtained from a borrrow area near the mouth of Halfway Creek, which should eliminate the need for future maintenance dredging and provide additional enhancement benefits. To complete the channel, 420,000 cubic yards of a mixture of fine and coarse material would be dredged and placed in the silt-screened borrow area. In addition, 17,000 and up to 100,000 cubic yards of the fine material would be dredged for an equipment access channel to the borrow area and to clean off the fine material from a portion of the borrow area. This material would be placed in an 80-acre confined disposal area on Rosebud Island for drying and incorporating into the existing sand topsoil. The carriage water from this containment, after adequate settling, would then be decanted slowly and returned to the Rosebud Island area. Some adverse impacts would result from the construction, mainly in the form of turbidity plumes and from the burial of 12.5 acres of aquatic habitat by construction of the islands. Because the material is relatively clean and the efforts being taken to minimize water quality effects, no toxic effects are anticipated. The project and its impacts are described in detail in the Definite Project Report/Environmental Assessment and 404(b)(1) evaluation.

Based on the information presented in the environmental assessment, I have determined that the proposed action would not be a major Federal action significantly affecting the human environment. An environmental impact statement will therefore not be prepared.

LTC, CE, DDE

8-23-88
Date

Roger L. Baldwin
Colonel, Corps of Engineers
District Engineer

SECTION 404(b)(1) EVALUATION
LAKE ONALASKA DREDGE CUT AND ISLAND CREATION
POOL 7, UPPER MISSISSIPPI RIVER

I. PROJECT DESCRIPTION

A. Location - The project is located in La Crosse County, Wisconsin, just upstream from the cities of Onalaska and La Crosse. The project area is in pool 7 of the Upper Mississippi River at around river mile 704.

B. General Description - The proposed work involves the creation of a 10,000-foot-long, 10-foot-deep dredge channel north of Rosebud Island and creation of 3 barrier islands in Lake Onalaska, around 4 acres each in size (see plate 2). Around 160,000 cubic yards of the coarse, sand material from the channel area would be needed to create the islands, which would be stabilized with 30,800 cubic yards of graded riprap and 6 inches of topsoil on the non-riprapped areas. The Wisconsin Department of Transportation (WDOT) needs around 1,000,000 cubic yards of sand material for road fill for their proposed Highway 53 upgrade. The proposed channel area has from 2 to 7 feet of fine material on top of a sand base, making this material generally unsuitable for island creation and road fill. Therfore, the material for road fill and island creation would be obtained from a borrow area near the mouth of Halfway Creek, which should eliminate the need for future maintenance dredging and provide additional enhancement benefits. To complete the channel, 440,000 cubic yards of a mixture of fine and coarse material would be dredged and placed in the silt-screened borrow area. In addition, 17,000 and up to 100,000 cubic yards of the fine material would be dredged for an equipment access channel to the borrow area and to clean off the fine material from a portion of the borrow area. This material would be placed in an 80-acre confined disposal area on Rosebud Island for drying and incorporating into the existing sand topsoil. The carriage water from this containment, after adequate settling, would then be decanted slowly and returned to the Rosebud Island area.

C. Authority and Purpose - This project is part of the Environmental Management Program authorized by Section 1103 of the Water Resources Development Act of 1986 (Public Law 99-662).

The purpose of the dredge cut is to restore winter and late summer fisheries habitat behind Rosebud Island in Lake Onalaska by the creation of flowing, deepwater habitat. The purposes of the island creations in Lake Onalaska are to improve water clarity, reduce wind-induced erosion on existing land areas, restore habitat diversity that has been lost, and provide good waterfowl nesting and loafing habitat.

D. General Description of Dredged and Fill Material

1. Physical Characteristics - The upper 3 to 6 feet of the material consists of organic silt or clay, with decaying vegetation interlaced in the upper levels. Below about 6 feet, the materials are variable and consist of either silt, silty clay, silty sand, or Mississippi River bedload sand. Mississippi River bedload sand was encountered at elevations ranging from 625 to 629. Normal pool is at about elevation 639, while the present substrate line varies from elevation 634 to 637. The quantity of fine material to be dredged from north of Rosebud Island for an

Table 404(b)-1. Lake Onalaska Sediment Samples (dry weight basis).

Sample date	20/8/87 - Precision Analytics							5/16/88 - PACE Laboratory			
COE ID #*	LO3-1	LO3-2	LO2-1	LO2-2	LO1-1	LO1-2	L2/3	LOA-1	LOA-2	LOB-1	LOB-2
Arsenic ug/g	<2.2	5.2	<2.2	<2.2	<2.2	<2.2	<2.2	0.89	0.15	0.82	0.06
Cadmium ug/g	5.8	5.8	12.3	5.8	<3.1	5.8	5.8	0.48	0.35	0.43	0.33
Chromium ug/g	20.2	20.2	30.9	30.9	30.9	20.2	20.2	11	16	9	6
Copper ug/g	11.5	11.5	25.0	18.2	18.2	11.5	18.2	5.4	6.4	5.1	3.6
Lead ug/g	12.0	17.4	14.0	11.5	10.6	13.8	22.9	8.4	5.3	21.0	<2.5
Mercury ug/g	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.02	<0.02	<0.02	<0.02
Nickel ug/g	<25.0	<25.0	100.0	54.5	54.5	<25.0	54.5	9.9	9.6	9.6	6.3
Selenium ug/g	**	**	**	**	**	**	**	<0.1	0.15	<0.1	<0.1
Zinc ug/g	8.4	11.0	105.4	77.3	90.1	23.7	44.1	28	15	23	6
Manganese ug/g	4.5	4.5	1208.3	216.0	1171.8	312.2	744.2	150	18	80	28
Aldrin ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.5	<1.5	<1.5	<1.5
BHC ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<4.8	<4.8	<4.8	<4.8
Chlordane ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<12	<12	<12	<12
DDD ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<13	<13	<13	<13
DDE ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.8	<5.8	<5.8	<5.8
DDT ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<8.7	<8.7	<8.7	<8.7
Dieldrin ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<4	<4	<4	<4
Endrin ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<13	<13	<13	<13
Endosulfan I&II ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<4.8	<4.8	<4.8	<4.8
Heptachlor ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.2	<2.2	<2.2	<2.2
Hepatchlor Epoxide ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.2	<2.2	<2.2	<2.2
Lindane ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0				
Methoxychlor ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<52	<52	<52	<52
PCB ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<33	<33	<33	<33
2,4-D ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<660	<660	<660	<660
2,4,5-T ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<330	<330	<330	<330
Silvex ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<330	<330	<330	<330
T. Avail. Cyanide ug/g	<0.5	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.4	<0.4	<0.4	<0.4
Ammonia Nitrogen ug/g	0.13	0.10	2.82	2.18	1.90	1.24	1.56	<0.1	<0.1	<0.1	<0.1
Total Solids ug/g	21.9	39.9	30.10	47.30	29.00	57.10	34.40	28	64	15	22
Volatile Solids %	39.9	21.2	12.80	15.70	11.00	6.30	6.40	13	8	42	45
Total Organic Carbon %	15.29	8.48	7.55	6.80	7.95	5.92	9.09	5.76	2.15	15.50	22.00
Percent Moisture (wet)	78.1	60.1	69.90	52.70	71.00	42.90	65.60	85	16	36	78
% Coarse Fract. >63 u	56.98	72.44	28.06	37.37	26.84	46.47	37.94				
Phi and Metric Size											
-2.00 to -1.00 >2.0 mm	0.38	0.08	0.12	0.19							
-1.00 to 0.00 1-2 mm	2.18	1.60	0.26	1.05	0.76	0.08					
0.00 to 1.00 500 u-1 mm	3.59	4.03	2.09	6.59	3.19	0.36	1.00				
1.00 to 2.00 250-500 u	5.89	8.82	4.81	9.59	4.58	14.85	12.26				
2.00 to 3.00 125-250 u	33.14	44.36	19.10	13.87	9.60	27.67	19.93				
3.00 to 4.00 63-125 u	11.80	13.56	1.68	6.15	8.71	3.51	4.75				
% Fine Fraction <63 u	43.02	27.56	71.94	62.63	73.16	53.53	62.06				
4.00 to 4.50 44-63 u	3.24	2.37	6.38	3.82	8.55	5.12	16.40				
4.50 to 5.00 31-44 u	3.18	2.62	2.38	3.82	4.78	1.16	3.80				
5.00 to 5.50 21-31 u	3.37	2.68	2.10	7.31	13.28	4.47	6.38				
5.50 to 6.00 15.6-22 u	4.96	3.41	7.88	1.26	6.64	5.84	5.27				
6.00 to 7.00 7.8-15.6 u	7.90	2.58	22.19	14.43	14.27	8.75	9.14				
7.00 to 8.00 3.9-7.8 u	5.39	3.06	12.34	10.67	7.85	6.75	5.62				
8.00 to 9.00 1.95-3.9 u	5.33	0.79	8.66	9.47	5.88	6.68	4.17				
9.00 to 10.00 1-1.95 u	5.33	6.81	5.44	7.76	6.26	8.84	6.65				
10.00 to 11.00 .5-1 u	2.45	2.00	0.62	1.30	0.92	2.42	2.85				
Finer than 11.00 <.5 u	1.87	1.24	3.94	2.80	4.77	3.49	1.78				

* Core samples of the 4 to 6 feet of fine material were split into top (1) and bottom (2) fractions.

** High values were obtained, but analysis by another laboratory reported values less than 3 ug/g.

operations, including effluents from the containment areas, are not likely to cause toxic effects on endemic organisms. The relatively low levels of metals and organics detected would indicate that the potential for significant bioaccumulation as a result of resuspension during dredging is low.

E. Description of Proposed Dredged Material Disposal Sites and Methods - There are four primary disposal areas: an 80-acre site on Rosebud Island, three island sites within Lake Onalaska, the Highway 53 right-of-way, and the borrow area excavated for the material for the road and islands construction (plate 2). The fine material from an access channel to the borrow area and any cleaning of the fine material from a portion of the borrow site would be placed by a large hydraulic dredge on an 80-acre site on Rosebud Island, which is immediately adjacent to the dredge cut. Berms of sufficient height to allow for total retention of the dredged material and the carriage water, including adequate freeboard, would be constructed around the area using available material from Rosebud Island. The area would contain a drop structure(s), equipped with stoplogs or similar equipment, to allow the dredged material mixture to settle and the water to be slowly decanted from the area and returned to the Rosebud Island area via a metal culvert or a series of metal culverts. Seepage would occur during the first stages of placement, until the fine material created a barrier preventing further seepage. It is anticipated that most of the water would be lost through seepage because of the small quanity of material to be dredged and the large disposal area available. A small amount of dredge carriage water would have to be removed by decanting the water into an effluent pipe, to be returned to the Rosebud Island area. The proposed disposal site varies from 4 to 9 feet above normal water levels. Most of this area was cultivated prior to inundation in the 1930's by lock and dam 7. The topsoil in this area is very sandy and thin before reaching glacial coarse bedload material. As a result, the revegetation of this area has been limited both in composition and density. Very few shrubs or trees are present, with sparse grasses and weeds dominating the plant community. The areas on Rosebud Island, closer in elevation to the water level, have shown much better signs of vegetative recovery, and the disposal site was placed to avoid any impacts to these areas. The final configuration and size of the disposal area would be determined based on the final amount of fine material to be disposed of, the results of cultural surveys to avoid impacts, and a final inspection of the vegetative community. The depth of the dry fill will range from less than 1 foot to around a maximum of 3 feet. The dikes would be removed after the dredged material has dried and landscaped into the dredged material. The final elevation of the disposal site would range from 5 to 9 feet above normal water levels.

Islands B and C are located near the remnants of islands that have or are in the process of eroding away. Water depths are generally in the 2- to 4-foot range at these sites. Island A is located near Brice Prairie in water depths ranging from 4 to 6 feet. The location and number of islands to be constructed were based on the locations of existing islands and shallow water and where wind fetch needed to be reduced to reduce wave action. To maximize the area receiving reduced wave effects, two additional islands would be neccessary, one located to the west of island B and one between C and A. An island between C and A was eliminated from further consideration because of the deeper water present in this area and the lack of a suitable

F. Timing and Duration of Dredged Material Disposal Activities - The project is scheduled for construction beginning in 1989. The construction could occur any time within the year, except for the following restriction. The island locations and the upstream portion of the dredge cut are located within the closed portion of the National Wildlife and Fish Refuge. These closed areas are sanctuaries for waterfowl during the hunting season. No construction activities would be allowed and all construction equipment would be removed from the closed area 1 week prior to and during the Wisconsin waterfowl hunting season. In addition, to minimize the potential for secondary movement of the dredged material, construction of the islands would occur after the normal spring high river discharges, with riprap placed as soon after placement of the dredged material as practicable, but no later than prior to the next spring high river discharge.

II. Factual Determinations

A. Physical Substrate Determinations

1. Substrate Elevation and Slope - The dredge cut would have an obvious effect on substrate elevation and slope. The 90-acre channel would change the existing 1- to 4-foot water depths to depths equal to or greater than 10 feet. The islands would change around 12 acres of aquatic habitat into fast land.

2. Substrate Changes - Removal of the fine material from the channel would change the substrate conditions to a coarse sand substrate. However, it is anticipated that this change would be temporary because sloughing of fine material from the sides of the channel and sedimentation of fine material would change this coarse substrate back to a fine substrate. Ripprapping the island shorelines would change the existing sand and/or fine substrate to rock.

3. Dredged/Fill Movement - Ripprapping much of the newly created island shoreline would greatly reduce any movement of the dredged material placed at the island sites. The fine material placed on Rosebud Island and the topsoil placed on the islands should vegetate quickly and reduce secondary movement of the dredged material. The islands would not be constructed during normal high spring river discharges and would be stabilized prior to the next spring high river discharge. This restriction would greatly reduce the potential for secondary movement during the construction phase. However, if an unexpected flood occurred during dredged material placement at the islands or prior to placement of the riprap, secondary movement might occur. In this case, an attempt would be made to retrieve this material to begin the construction again. The silt screen aroud the borrow area should minimize secondary movement. However, when the silt screen is removed and the is channel opened, some of the fine, unsettled material would wash away.

B. Water Circulation and Fluctuations

1. Current Patterns and Circulation - Lake Onalaska receives flow from the main channel, with much of this flow coming from two side channels located near river mile 704 and from the Black River. Flow from the side channels predominantly follows the deeper water area east of the remnants

effluent return from the placement of the coarse material on the Highway 53 right-of-way, the operation of the hydraulic cutterhead, and the open water disposal of a mixture of fine and coarse material in the borrow area. In order to minimize these plumes, the containment areas, especially the fine material containment area on Rosebud Island, have been designed to maximize retention time and effluent quality. The effluent would be returned to the proposed dredge cut area to minimize the impact zone. A similar island construction project, the Weaver Bottoms Rehabilitation, was recently completed in pool 5. This project included island creation by hydraulic placement of coarse material and hydraulic placement of fine material in a containment area to be used as topsoil. Both operations created fairly large visible turbidity plumes that extended a few thousand feet downstream of the discharge. The plumes from the island creations were mainly from the displacement and disturbance of fine material at the island sites. The effects of the proposed island creations may be less, especially for Islands B and C, because they are being built on the eroded base of old islands that have coarser material than what was encountered in the Weaver Bottoms project. Effluent quality from the fine material containment areas for the Weaver Bottoms project ranged from 151 to 167,000 milligrams per liter (mg/l) suspended solids. Mean suspended solids levels at distances greater than 50 feet from the effluent pipe ranged from 15 to 27 mg/l on 2 days of sampling. However, it took a few thousand feet from the effluent discharge to return to background. The effects of the proposed project on suspended solids may be slightly less because of the larger disposal area available on Rosebud Island for fine material disposal.

It is anticipated that the effluent return from the placement of the material on the highway right-of-way would produce only minor turbidity plumes for several reasons. Most of the material would be coarse. Subimpoundments would be created along the highway fill area to trap as much of the fine material as possible for use as topsoil. In addition, the proposed road construction is located on an old glacial sand terrace and the coarse nature of the bed material should maximize seepage and minimize the generation of an effluent. Any effluent that is generated would be discharged back into Lake Onalaska via two routes. One route would be to discharge into a dry wash that enters a large marsh area, where further seepage and settling would occur, before being discharged into Halfway Creek. Restoration, if there are significant impacts on the marsh area, is being required. The other route would follow road right-of-ways and then along the proposed City of Onalaska's storm sewer before being discharged into the project area.

The operation of the hydraulic cutterhead and the open water disposal of the mixture of fine and coarse material into the borrow area would also produce plumes in the area north of Rosebud. The borrow area would be completely enclosed by silt screen, which because of the shallow water depths (less than two feet) would be staked in position to maximize effectiveness and minimize any potential failures. The potential effects on water quality from the operation of the hydraulic cutterhead, for at least the material to construct the islands and to provide the material for the WDOT, would be mostly confined to the borrow and immediately adjacent area. The material dredged to complete the channel would be open water disposed in this silt-screened borrow area. Leakage from the borrow area would undoubtedly occur, which would create some elevated turbidity in the adjacent areas. The combination of all the activities in the 300-acre area

c. Toxic Metals and Organics - The relatively clean nature of the fine material should minimize any potential construction-related elevations in toxic compounds. The sediment acute toxicity testing indicates it is unlikely that compounds toxic to endemic organisms would be released as a result of the project.

d. Pathogens - Lake Onalaska is located upstream of La Crosse and no major sewer outfalls discharge into the lake. Therefore, pathogenic organisms should not be a concern.

3. Actions Taken To Minimize Impacts - The design of the containment area for the fine material should minimize potential significant effects on the water quality.

D. Contaminant Distribution Determinations - Concern was expressed that the channel could expose layers of more contaminated sediment that would then become more available to aquatic organisms. Results of the bulk chemical analysis of the core profiles indicate that the quality of the fine material is fairly homogeneous with depth and that exposing layers of sediment with high levels of contaminants is unlikely.

The disposal of the fine material on Rosebud Island would make the contaminants present available for uptake by terrestrial plants and animals. However, the levels of contaminants detected are relatively low and should not pose any significant problem in regard to uptake by terrestrial species.

E. Aquatic Ecosystem and Organisms Determinations

1. Effects on Plankton - The project construction could temporarily suppress planktonic activity in the turbidity/suspended particulates plumes generated by the disposal of the dredged material. Creation of the barrier island could improve water clarity, which may have a slight beneficial impact on the planktonic community within Lake Onalaska.

2. Effects on Benthos - Dredging of the channel and creation of the islands would have an obvious deleterious effect on the existing benthos. Burial of 12 acres of aquatic area by the islands would permanently remove this area from benthic production. However, this loss would be offset somewhat by the creation of shallow littoral areas and rock substrate which could be more productive and diverse than the existing sand and fine substrate. Benthic productivity and diversity in the dredged channel may be slightly less than the existing vegetated shallows. However, the channel, by providing flow, would prevent the area north of Rosebud Island from having dissolved oxygen problems, which could also provide some benefits to the benthic community. The discharge of the dredged material and effluents from the containment areas is not likely to produce any toxic effects on benthic organisms, as is evidenced by the results of the acute toxicity testing and bulk chemistry showing the material to be relatively uncontaminated. The turbidity/suspended particulates plumes generated during construction could have some minor, temporary effects on benthic organisms present in the plume areas. In summary, localized changes in the benthic community would occur as a result

Another objective of the islands is to provide relatively predator-free areas for waterfowl nesting. Nicklaus (in WDNR's Mississippi River Unit Annual Report, 1984-1985) studied mallard (*Anas platyrhynchos*) nesting on several old dredged material islands located adjacent to the main channel of the Mississippi River. Nicklaus found the annual average successful nests per acre to range from 0.98 to 2.98 on the islands, with average annual percent of successful nests ranging from 60 to 87. These values are low in comparison to those recorded around the country for islands with good dense nesting cover (Lokemoen et al., 1984). Lokemoen et al. (1984), in their summary of their work and the work of several others, reported nest densities ranging from 7.6 to 205 nests/acre, with most of them being above 50 nests/acre. In the Lokemoen et al. (1984) study, nesting success varied from 80 to 85 percent. Nicklaus's study islands did not provide ideal dense nesting cover, in that the old dredged material showed various levels of vegetation recovery. Included were large trees, which can be used as perches by avian predators, and patches of sparse grass, which may have detracted from their value for mallard nesting. In addition, the islands were not stable and were being lost due to erosion. Nest densities on islands can be extremely high, likely a result of increased nest success and hen survival with subsequent homing (Duebbert et al., 1983 and Hines and Mitchell, 1983). On the proposed islands, it may not be reasonable to expect to achieve the extremely high successful nest densities that have been reported on islands in other areas. However, it may be possible to achieve and maintain between 8 and 50 mallard nests per acre, which would be substantially above what is presently occurring on old dredged material islands.

The islands and the subsequent edges that are created would be valuable to a variety of other wildlife, as well. Herons and egrets would use the shallow areas for fishing. The marsh habitat that is anticipated to develop in the shadow zones of the islands would provide good habitat for aquatic mammals, such as muskrats and mink, and for a wide variety of birds.

5. Effects on Aquatic Habitat - The project would restore some of the habitat diversity that has been lost within Lake Onalaska from the erosion of existing islands and from the deeper water areas filling in with sediment. The project would create around 90 acres of deep water habitat. Between 26 and 48 percent of the water surface area of Lake Onalaska that contains water depths greater than 7 feet has been lost since inundation by the locks and dams in the 1930's. The creation of the channel would partially offset this loss. The proposed islands would restore 12.5 acres of island habitat and offer some protection for the remaining islands against wind-induced wave erosion. The islands would also create shadow zones south of the islands that would be directly protected from the wind. These shadow zones would extend south of the islands 66 feet or 11 times the height of the island (Simons and Chen, 1976). The subsequent quiescent conditions should encourage the development of emergent and submerged vegetation. Therefore, around 12 acres of shallow, vegetated littoral areas may be created along the southern shores of the islands. This could expand as the aquatic vegetation becomes established and, in turn, further increase the shadow zone effect.

discharge point, is likely to have levels of contaminants that, alone or in combination with other contaminants, would produce acute toxicity to endemic organisms.

2. Compliance with Applicable Water Quality Standards - The State of Wisconsin's water quality standards are contained in NR 102 and NR 103. Wisconsin (NR 103) indicates that "water quality shall meet the standards and requirements for recreational use and fish and aquatic life." Wisconsin's standard of "unauthorized concentrations of substances are not permitted that alone or in combination with other materials present are toxic to fish and other aquatic organisms" is not likely to be violated by the proposed project. Wisconsin's 80 mg/l standard for suspended solids would be exceeded in the effluents and the turbidity plumes generated. The project would allow Wisconsin's 5 mg/l dissolved oxygen standard to be met more frequently in the area north of Rosebud Island. The Wisconsin Department of Natural Resources (DNR) has indicated that they would use the Channel Maintenance Forum approval process to waive the prohibition on disposal of dredged material below the ordinary high water mark. The Wisconsin DNR has granted water quality certification (see appendix 5).

3. Potential Effects on Human Use Characteristics

a. Municipal and Private Water Supply - The disposal of the coarse, clean material along the Highway 53 right-of-way should not be a problem for private well owners adjacent to the right-of-way. The clean nature of the material, the fact that major ponding of the dredged material carriage water would not occur, and the fact that the disposal would be moved frequently along a 2-mile corridor should minimize any potential impacts on private wells located adjacent to the right-of-way.

b. Recreational and Commercial Fisheries - The project should have a very positive effect on fish and other wildlife habitat, which should result in better fishing and hunting experiences. Because the project is designed to enhance fisheries value, there could be a slight benefit to the commercial fisheries.

c. Water Related Recreation and Aesthetics - The aesthetic quality of the area would be reduced during the construction because of the presence and operation of the dredging and other construction equipment. The placement of the material at the island sites would cause a turbidity plume, which may temporarily reduce the aesthetic quality of the area. However, the location of the islands away from major highways would minimize any short-term visual impacts associated with the construction activities. The proposed island creations are consistent with existing visual characteristics of broad vistas of open water area bordered by a series of irregular shaped islands with sparse ground-cover type of vegetation. Any efforts that improve the fishery and wildlife habitat in this area would benefit the existing recreational activities. Recreational boating is not expected to be affected since the majority of this activity occurs downstream of the project, closer to the city of La Crosse, Wisconsin.

Should human remains be found that would be affected by any phase of the project, coordination with the Burial Sites Preservation Board would be required under Chapter 157 of the Wisconsin State Statutes.

G. Cumulative Effects on the Aquatic Ecosystem - The project is anticipated to enhance the fish and wildlife value of the entire Lake Onalaska area by providing or restoring important fish and wildlife habitat, which is somewhat lacking in the area.

H. Secondary Effects on the Aquatic Ecosystems - The islands were designed to be stable, and no secondary effects are anticipated as a result of secondary movement. Conducting the project with the Wisconsin Department of Transportation should produce some secondary benefits, because the need to get road fill from the adjacent bluffs will be eliminated.

III. Findings of Compliance or Noncompliance with Restrictions on Discharge

This evaluation was prepared according to the 404(b)(1) guidelines of 24 December 1980, Federal Register, Vol. 45, No. 249.

A. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge that Would Have Less Impact Upon the Aquatic Ecosystem (40 CFR 230.10(a)) - Several different channel configurations and island options were considered in arriving at the proposed project, which should maximize the enhancement goals, while minimizing any construction related adverse impacts. In addition, a couple of disposal options were considered. Placement of the fine material on an agricultural field on Brice Prairie was considered, but was eliminated because of the greater potential for impacts on cultural resources, the significant increase in cost, and the potential for increasing groundwater problems that are occurring in the area because of contamination by a local industry. Increasing the size or numbers of islands was also considered, but was eliminated because it was not considered necessary to meet the objectives of the island creations. Placement of all the fine material on Rosebud Island was considered but eliminated because of a significant increase in cost, the difficulty of designing an onland disposal area for the large quantity of material to be dredged that is capable of producing a decent quality effluent, and the sustantial disturbance to Rosebud Island that would result.

B. Compliance with Applicable State Water Quality Standards (40 CFR 230.10(b)(1)) - The project complies with Wisconsin standards based on approval of the project by the Channel Maintenance Forum on 17 August 1988 and granting of water quality certification (appendix 5).

C. Compliance with Section 307 of the Clean Water Act (40 CFR 230.10(b)(2)) - The proposed action would not violate any applicable effluent standard or prohibition under Section 307 of the Clean Water Act.

D. Compliance with the Endangered Species Act (40 CFR 230.10(b)(3)) - The project has been coordinated with the U.S. Fish and Wildlife Service, and they concur with the determination that there should be no significant impacts on endangered species or their critical habitat.

E. Evaluation of the Extent of Degradation of Waters of the United States (40 CFR 230.10(c))

1. The proposed project would not have any significant adverse effects on human health and welfare.

2. The proposed project would not have any significant adverse effects on life stages of aquatic life or any other wildlife dependent upon aquatic ecosystems.

3. The proposed project would not have any significant adverse effects on aquatic ecosystem diversity, productivity, or stability.

4. The proposed project would not have any significant adverse effects on recreational, aesthetic, cultural, or economic values.

F. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem (40 CFR 230.10(d)) - The size and number of islands were selected to minimize adverse effects, while reaching the stated goals and objectives. The containment area would be designed to achieve high quality effluent.

G. Compliance with the Guidelines for the Discharge of Dredged or Fill Material - Based on this evaluation, I have determined that the proposed action complies with the requirements of these guidelines, with the inclusion of appropriate and practicable conditions to minimize pollution or adverse effects to the aquatic ecosystem.

8-23-88
Date

LTC, CE, DDE
Roger L. Baldwin
Colonel, Corps of Engineers
District Engineer

Attachment 4

Section 215 Agreement

June 10, 1988

DRAFT
AGREEMENT
UNDER SECTION 215
OF PUBLIC LAW 90-483, AS AMENDED
ENVIRONMENTAL MANAGEMENT PROGRAM
HABITAT REHABILITATION AND ENHANCEMENT PROJECT
LAKE ONALASKA DREDGE CUT & ISLAND CREATION
LA CROSSE COUNTY, WISCONSIN

THIS AGREEMENT, entered into this _____day of _____1988, by and between the Department of the Army (hereinafter referred to as the "GOVERNMENT") and the State of Wisconsin, (hereinafter referred to as the "STATE").

WITNESSETH, THAT:

WHEREAS, Section 1103 of the Water Resources Development Act of 1986 (Public Law 99-662) authorized the Secretary of the Army to proceed with environmental management along the Upper Mississippi River System, including construction of habitat rehabilitation and enhancement projects; and

WHEREAS, a habitat rehabilitation and enhancement project (hereinafter referred to as the "AUTHORIZED PROJECT") is proposed at Lake Onalaska in La Crosse County, described in Definite Project Report/Environmental Documentation (SP-1), dated June 1988 and construction approved by the Assistant Secretary of the Army; and

WHEREAS, the State has proposed to perform certain work which falls within the work required for the Authorized Project; and

WHEREAS, performance of such work by the State will accelerate construction of the Authorized Project and result in a cost savings to the Government; and

WHEREAS, the Wisconsin Department of Transportation has separate need and funding for highway embankment fill which it desires to acquire from the Authorized Project area as part of a joint dredging project with the Government and is agreeable therefore to perform, at cost, certain work required for the Authorized Project; and

WHEREAS, Section 215 of Public Law 90-483, as amended (42 U.S.C. 1962d-5a), provides that the Secretary of the Army may enter into an agreement to reimburse the costs of certain work accomplished by states or political subdivisions thereof which later is incorporated into an authorized project, when it is determined that such reimbursement is in the public interest; and

WHEREAS, the Secretary of the Army has determined that in this instance it is in the public interest to provide for reimbursement as further specified in this Agreement for the work to be accomplished by the State;

ARTICLE 3 - Review of Plans and Specifications

No construction shall commence under this Agreement until the detailed plans and specifications, estimates, and arrangements for prosecution of the work have been reviewed and approved by the District Commander, U.S. Army Engineer District, St. Paul. Three coordination meetings shall be held during the preparation of the plans and specifications: at the initiation, at 30-percent completion, and at 90-percent completion. Proposed changes in the designs or the approved plans and specifications must be reviewed and approved by the District Commander prior to the initiation of construction.

ARTICLE 4 - Inspection

The District Commander, or his designee, is authorized to inspect any work that is performed pursuant to this Agreement and the State hereby gives the Government a right to enter at reasonable times and in a reasonable manner upon any land it owns or controls for this total project for the purposes of inspection.

ARTICLE 5 - Basis of Determining Reimbursement

Reimbursement to the State will be based on the following cost apportionment percentages of the contract bid price:

Work Item	Reimbursement (%)
Mobilization and demobilization	50
Dredging of sand* from the Authorized Project area used to construct islands in Lake Onalaska (estimated to be 160,000 CY).	100
Dredging of material within the Authorized Project limits and placed in the borrow area channel and/or Rosebud Island (estimated to be 380,000 CY).	100
Dredging of material within the Authorized Project limits and placed on highway right-of-way (estimated to be 60,000 CY)	50
Dredging of material outside of the Authorized Project limits and placed on highway right-of-way (estimated to be 940,000 CY).	0
Placing riprap and topsoil on islands.	100

*Defined as material suitable for island construction.

Engineering, preparation of plans and specifications, supervision, and administration costs will be cost-shared in the same ratio as the estimated construction costs.

If dredging of only fine sediments becomes necessary in order to obtain sand suitable for island construction, the fine sediments would be placed on Rosebud Island (capacity of 200,000 cubic yards) and the cost would be reimbursed at 100 percent by including the work in the contract unit bid price for island construction or as a separate contract bid item, depending on further evaluation of existing conditions and construction procedures during preparation of plans and specifications.

ARTICLE 8 - Prosecution of Work by Contract

In the event the State prosecutes the work herein by contract, all bids received and the proposed provisions of any contract shall be subject to review by the Government (not to exceed ten (10) days) prior to award. Any such contract shall contain all applicable provisions required by Federal laws and regulations including, but not necessarily limited to, applicable labor and equal opportunity provisions.

ARTICLE 9 - State Obligations

The State agrees to comply with the items set forth below to the extent that these requirements are applicable to the Authorized Project.

(a) Provide without cost to the United States the rights-of-way required for the transport of fine sediment and sand to and/or the return of transport water from the highway right-of-way to construct the Authorized Project. Lands currently owned by the Government which are needed for construction of the Authorized Project (including placement of fine sediments on Rosebud Island) will not be included in the total project cost and will be made available to the State at no cost.

(b) Obtain any necessary licenses and permits, and comply with any applicable Federal, State, and municipal laws, codes, and regulations in connection with accomplishing the work.

(c) Make any necessary relocations and alterations of buildings, utilities, highway bridges, sewers, and related facilities, except as otherwise provided.

(d) Cause all work to be performed in a skillful and professional manner.

(e) Comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, as amended (P.L. 91-646; 42 U.S.C. 4601, et seq) in acquiring lands, easements, and rights-of-way for construction of the Authorized Project and inform affected persons of applicable benefits, policies, and procedures in connection with said Act.

(f) Comply with Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, as well as Army Regulation 600-7, entitled "Non-Discrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army," in connection with the construction of the Authorized Project.

(g) Maintain the Authorized Project in good condition from the time it is completed until accepted by the Government.

ARTICLE 14 - Equal Opportunity (Federal Assisted Construction)

The State hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof as defined in the Regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Government pursuant to a grant, contract, loan, insurance, or guarantee, the following Equal Opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

(1) The contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Government that explain this clause.

(4) The Contractor shall, in all solicitation or advertisement for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Government advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended and by the rules, regulations, and orders of the Secretary of Labor, Standard Form 100 (EEO-1), or any successor form, is the prescribed form to be filed within 30 days following the award, unless filed within 12 months preceding the date of award.

(8) The Contractor shall permit access to its books, records, and accounts by the contracting agency or the Office of Federal Contract Compliance Programs (OFCCP) for the purposes of investigation to ascertain the Contractor's compliance with the applicable rules, regulations, and orders.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of

Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraph (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontractor purchase order as the contracting agency may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

Notwithstanding any other clause in this Agreement, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

ARTICLE 15 - Relationship of Parties

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this agreement, and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE 16 - Effective Date

This Agreement shall take effect when executed on behalf of the Government.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

BY _____

DATE: _____

THE STATE OF WISCONSIN

BY _____
Administrator

Attachment 5

Coordination

1. U.S. Fish and Wildlife Service Support
2. Draft Coordination Act Report
3. Threatened and Endangered Species Letter
4. Refuge Compatibility Statement
5. Wisconsin DNR Support and Comments
6. Wisconsin DNR Water Quality Certification
7. Wisconsin DOT Support
8. Minnesota DNR Support
9. Lake Onalaska Protection & Rehabilitation District Support
10. Corps response to Lake Onalaska P&RD

United States Department of the Interior

FISH AND WILDLIFE SERVICE
FEDERAL BUILDING, FORT SNELLING
TWIN CITIES, MINNESOTA 55111

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

FWS/ARW

JUL 15 1988

Colonel Roger L. Baldwin
District Engineer
U.S. Army Engineer District, St. Paul
1135 U.S. Post Office and Custom House
St. Paul, Minnesota 55101

Dear Colonel Baldwin:

The Fish and Wildlife Service (Service) has reviewed the Definite Project Report/Environmental Documentation (SP-1) for the Lake Onalaska Dredge Cut and Island Creation project. This project located near LaCrosse, Wisconsin, is proposed under the Water Resources Development Act of 1986 (Public Law 99-662) as part of the Upper Mississippi River System Environmental Management Program.

This is a combination of two distinct projects: 1) Island Creation for wildlife enhancement proposed by the Service and, 2) a dredge cut to obtain fill material for a highway project proposed by the Wisconsin Department of Transportation. Two islands appear to be located on Service fee title lands and one on cooperatively managed lands. The Corps of Engineers is authorized to construct the proposed project on these lands. Upon receipt of the final version of the Environmental Assessment we can affect a Finding of No Significant Impact (FONSI).

The Service will assume all operation and maintenance costs associated with the island creation portion of this project as defined in the Definite Project Report. The Service will not accept operation and maintenance responsibilities associated with the dredge cut but suggest the Department of Transportation assume this responsibility.

It is our understanding that a copy of the Refuge Compatibility Statement has been furnished to your office by our field station at Winona, Minnesota. If we can be of further assistance, please let us know.

Sincerely,

Marvin E. Moriarty
Acting Regional Director

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Upper Mississippi River Refuge Complex
51 East 4th Street
Winona, Minnesota 55987

IN REPLY REFER TO:

December 15, 1987

Mr. Don Powell
U.S. Army Corps of Engineers
1135 U.S. Post Office & Custom House
St. Paul, Minnesota 55101-1479

Dear Mr. Powell:

Following are the coordinated comments of the Fish and Wildlife Service (Service) on the Lake Onalaska Dredge Cut and Island Creation Definite Project Report (DPR). We appreciate your efforts on this project as well as the entire Environmental Management Program. It is not possible to provide a critical review of the benefits/impacts of the proposed project since both the Environmental Resources and Environmental Effects sections of the report have not yet been completed. Therefore, Service comments concerning environmental resources and effects are preliminary in nature.

SPECIFIC COMMENTS

Study Participants and Coordination (DPR-1):

Since several Service offices are involved in this project, this specific reference to the Upper Mississippi River National Wildlife and Fish Refuge should be deleted.

Project Purpose and Location (DPR-1):

We suggest paragraph 1 be rewritten to read:

> The purpose of the dredge cut is to improve water quality and create deepwater fishery habitat, especially winter and late summer habitat, behind Rosebud Island in Lake Onalaska. The purposes of island restoration in Lake Onalaska are to improve water clarity, reduce wind-induced erosion on existing land areas, restore habitat diversity that has been lost, and provide predator free waterfowl nesting/loafing habitat.

Selected Plan of Action (DPR-5-6-7)

If specific disposal sites for sand and especially fine sediments are known at the time of the draft DPR, the document should contain a location map of such areas including site development plans (i.e., berms, drop structures, containment capacity, elevations, etc.).

The report discusses island longivity as being uncertain. This is due to your efforts to optimize the costs to benefits ratio of the project. The Service's position regarding the construction of the islands is that they be designed for a 50 year life span. This would result in minimal operation and maintenance responsibilities. The Service would not agree to reconstruction of the islands as part of an operation and maintenance agreement with the Corps. Specific operation and maintenance costs for this project will have to be developed further in this planning process. The Service feels that the islands will have to be riprapped soundly on the north side and the east and west end points. The Service does not agree with the other alternative of a 1 vertical on 10 horizontal side slope. The area is biologically sensitive and this construction alternative would consume excessive aquatic habitat. We also recommend that after construction the islands are allowed to revegetate naturally. We suggest that the last sentence be modified to read:

> "A minimum of six inches of topsoil (fine sediment) would be placed on the islands for revegetation purposes."

An alternative for the disposal of fine sediment which should be considered is the use of an old farm field on Rosebud Island. Part of this area (40 to 80 acres) could possibly be used, thus enhancing diversity and productivity of the area. In reviewing this alternative archaeological resources and contaminates contained in the return water must be considered.

Real Estate Requirements (DPR-7):

The Service will have to be party to the document being signed between the Corps of Engineers and Wisconsin Department of Transportation since the project involves fee title Refuge lands.

Projects Accomplishments and Outputs (DPR-7)

First line should read:

> "The project would create flows and subsequently, increase the year around value to the fishery of the 200 acre project site and adjacent areas near Rosebud Island."

Islands would also reduce erosion on other lake shoreline and reduce the resuspension of bottom sediments thereby enhancing lake water quality for fish and wildlife benefits.

Operation and Maintenance (DPR-9)

The Fish and Wildlife Service does not consider island reconstruction and maintenance dredging of the channel cut as part of their responsibility under the operation and maintenance component of this Environmental Management Program project. The document should read:

"...no future maintenance dredging is proposed."

The Service will do the required periodic habitat management to maintain the islands as waterfowl nesting sites although specific managment techniques should not be defined.

We assume that the Corps of Engineers has made a policy change and has deleted the 25% state sharing on operation and maintenance costs for Environmental Managment Program projects located on a National Wildlife Refuge.

Costs Estimates (DPR-10)

This table is confusing and unclear. To help clarify change the column heading from total cost to total project cost and add a Wisconsin Department of Transportation cost column. Where are the costs for disposal site acquisition and preparation? Is that part of the $3.00 per cubic yard figure?

The draft DPR should contain an implementation schedule for the project.

CONTAMINANTS

The only reference to evaluation of potential dredging and disposal-related contaminant impacts to the biota of Lake Onalaska is the statement on DPR-8 that water quality certification will be requested from the Wisconsin Department of Natural Resources. The Service is concerned about potential contaminant impacts and would like an opportunity to review the results of your contaminants analysis. Contaminant analytical data should be coordinated with the St. Paul Field Office (612-290-3131).

Sincerely,

Richard F. Berry

Richard F. Berry
Complex Manager

cc: Keith Beseke
Hannibal Bolton, FAO
Gary Wege, SPFO
Chuck Gibbons, RO-PSW

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ST. PAUL FIELD OFFICE, (ES)
50 Park Square Court
400 Sibley Street
St. Paul, Minnesota 55101

IN REPLY REFER TO:

SPFO

February 1, 1988

Mr. Charles Workman, Chief
Environmental Resources Branch
U.S. Army Corps of Engineers
1135 U.S. Post Office and Custom House
St. Paul, Minnesota 55101-1479

Dear Mr. Workman:

This is in response to your January 19, 1988 letter concerning potential impacts on federally endangered or threatened species from the proposed Lake Onalaska Dredge Cut and Island Creation Project located in Pool 7 of the Upper Mississippi River. The project is proposed for implementation under the Environmental Management Program.

Based on information contained in your above referenced letter and the nature of the proposed project, its location, and the habitat requirements of the federally threatened bald eagle (Haliaeetus leucocephalus), endangered Higgins' eye pearly mussel (Lampsilis higginsi), we support your determination that the proposed project will not affect federally listed endangered or threatened species. This precludes the need for further action on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. Should this project be modified or new information indicates listed species may be affected, consultation with this office should be reinitiated.

These comments have been prepared under the authority of and in accordance with provisions of the Endangered Species Act of 1973, as amended.

Sincerely,

James L. Smith
Assistant Field Supervisor

cc: WI Dept. of Natural Resources, Madison
WI Dept. of Natural Resources, LaCrosse

Upper Mississippi River National
Wildlife and Fish Refuge
Established 1924
Compatibility Study
Lake Onalaska Dredge Cut

Establishment Authority:

Public Law No. 268, 68th Congress, The Upper Mississippi River Wildlife and Fish Refuge Act.

Purpose for Which Established:

"The refuge shall be established and maintained.(a) as a refuge and breeding place for migratory birds included in the terms of the convention between the United States and Great Britain for the protection of migratory birds, concluded August 16, 1916, and (b) to such extent as the Secretary of Agriculture may by regulations prescribe, as a refuge and breeding place for other wild birds, game animals, fur-bearing animals, and for the conservation of wild flowers and aquatic plants, and (c) to such extent as the Secretary of Commerce may by regulations prescribe a refuge and breeding place for fish and other aquatic animal life."

Description of Proposed Use:

The proposal is a Habitat Rehabilitation and Enhancement Project authorized by the Water Resources Development Act of 1986 (Pub. L. 99-662). The proposal involves a dredge cut and island creation located in Lake Onalaska (Pool 7). The dredge cut is designed to improve water quality, prevent the area from freezing to the bottom and create deepwater fish habitat, especially winter and late summer habitat behind Rosebud Island in Lake Onalaska. The purposes of island restoration in Lake Onalaska are to improve water clarity, reduce wind-induced erosion on existing land areas, restore habitat diversity that has been lost, and provide predator-free waterfowl nesting/loafing habitat. Complete details of the project, including maps, are contained in the draft report entitled, "Upper Mississippi River Environmental Management Program Definite Project Report/Environmental Documentation (SP-1) Lake Onalaska Dredge Cut & Island Creation Habitat Rehabilitation and Enhancement Project Pool 7, Upper Mississippi River, La Crosse County, Wisconsin," prepared by the St. Paul District, Corps of Engineers, March 1988.

Anticipated Impacts on Refuge Purposes:

As a result of the project the fishery, migratory bird, aquatic plant and other wildlife populations should increase which will be a direct benefit toward maintaining and accomplishing refuge purposes. The above mentioned report contains detailed information on the project's impacts on fish, wildlife and plant species.

Justification:

The proposed project is compatible as it works toward the accomplishment of the stated objectives and purposes of the refuge.

Determination:

The proposed project is compatible with purposes for which the refuge was established.

Determined by: _____ 4/20/88
James R. Lennartson — Date

Reviewed by: _____ 5/3/88

Concurred by: _____ 5/4/88
Acting Regional Director

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

State Office Building
3550 Mormon Coulee Road, Room 104
La Crosse, WI 54601
608-785-9000

Carroll D. Besadny
Secretary

July 26, 1988

1600-1-3

Mr. Louis Kowalski, Chief, Planning Division
U. S. Army Corps of Engineers
1135 U. S. Post Office and Custom House
St. Paul, MN 55101-1479

Dear Mr. Kowalski:

The following are comments on the third draft of the Definite Project Report/Environmental Documentation for the Lake Onalaska EMP. We agree with the concept of the report, but since this version was completed there have been some major changes in the project design. At some point these changes should be incorporated into the plan.

The following are some of the latest project design features. The area between Rosebud Island and the smaller island north of Rosebud can be dredged to 40+ feet. A buffer zone of 100 feet should be maintained adjacent to the islands. Sand berms will be placed between the small island and Rosebud at the upstream and downstream ends of the "deep hole area." Effluent return water from the highway right-of-way may be placed in this containment area. Water would be decanted and discharged via an outlet pipe and a silt curtain would be placed around the outlet to isolate more of the fine material. A single channel at the upstream end of the channel will split into 2 channels upstream from the mouth of Halfway Creek. The channel depth can vary from 10 to 15 feet and the width can vary from 150-300 feet depending on location. Another project feature is a 100 X 200 feet stub off the habitat channel in the mouth of Halfway Creek.

As mentioned in previous comments and in light of the recent changes, a complete discussion of the methods and assumptions used to design the proposed channels needs to be included in the plan. In particular, methods used to estimate flow, velocity and cross sectional area in the proposed channels should be described. The difference in cross sectional area with and without 1.5 feet of ice cover should be calculated. The goal is to have a velocity of 0.5-foot per second in the lower ends of the habitat channels at the beginning of the winter in open water. We still need to know how the operation of the Onalaska spillway will effect the project area at low flow.

We will continue to try to fulfill the needs and interest of all agencies involved with the Lake Onalaska HREP project. However, we must finalize a plan in the very near future. Please let me know what needs to be done to meet this objective.

Sincerely,

Pamella A. Thiel

Pamella A. Thiel
Mississippi River Habitat Specialist

PAT:jd

cc: Keith Beseke - FWS
Dick Steinbach - FWS
Hannibal Bolton - FWS
James Gruendler - WDOT
Steve Johnson - MNDNR

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Western District Headquarters
1300 West Clairemont Avenue
Call Box 4001
Eau Claire, WI 54702-4001

Carroll D. Besadny
Secretary

August 15, 1988 File Ref: 3500

Mr. Louis Kowalski
Chief, Planning Division
Department of the Army
St. Paul District, Corps of Engineers
1421 U.S. Post Office & Custom House
St. Paul, MN 55101-1479

Dear Mr. Kowalski:

The Department of Natural Resources has examined the application of the Corps of Engineers for Water Quality Certification for the Lake Onalaska Dredge Cut and Island Creation Habitat Rehabilitation and Enhancement Project at pool 7 of the upper Mississippi River in La Crosse county.

The Department is granting water quality certification because there is reasonable assurance that the activity will be conducted in a manner that will not violate the standards enumerated in s. NR 299.05(1).

The certification is granted provided the following conditions are met:

1. Water quality limitations and monitoring requirement for carriage water discharges as described in tables 1 thru 6 (attached) shall be met.

2. At least five working days prior to the beginning of the discharge, the applicant shall notify the Department of intent to commence the discharge. Please notify Pam Thiel at La Crosse, WI (608) 785-9000).

3. Within five working days after the completion of the discharge, the applicant shall notify the Department of the completion. Please notify Pam Thiel at La Crosse, WI (608) 785-9000).

4. The applicant shall allow the Department reasonable entry and access to the discharge site in order to inspect the discharge for compliance with the certification and applicable laws.

5. The project shall be completed as designed and described.

Sincerely,

Edward J. Bourget
Water Management Supervisor

c: T. Moe
Pam Thiel - La Crosse

WZ6\EB008.ebm

Table 1. Water quality limitations and monitoring requirements for proposed carriage water discharge to Sand Lake Coulee Creek.

Period	Total NH3-N mg/l (weekly avg) Instream *	DO mg/l (daily min) Instream *	TSS mg/l (daily max) Carriage Water
April-May	1.0	5	100
June-August	0.54	5	100
Sept-October	1.0	5	100
November	2.0	5	100

* To be met in Sand Lake Coulee Creek below carriage water discharge to stream.

Monitoring Requirements For Periods of Discharge to Stream:

Location	Period	Parameter(s)	Frequency
Sand Lake Coulee Creek	April-Nov.	NH3-N, DO Temp, pH	3 / week
Carriage Water	April-Nov.	TSS	3 / week

Table 2. Water quality limitations and monitoring requirements for proposed carriage water discharge to Halfway Creek at Hwy ZN.

Period	Total NH3-N mg/l (weekly avg) Instream *	DO mg/l (daily min) Instream *	TSS mg/l (daily max) Carriage Water
April-May	1.0	5	200
June-August	0.54	5	200
Sept-October	1.0	5	200
November	2.0	5	200

* To be bet in Halfway Creek below carriage water discharge to stream.

Monitoring Requirements For Periods of Discharge to Stream:

Location	Period	Parameter(s)	Frequency
Halfway Creek	April-Nov.	NH3-N, DO Temp, pH	3 / week
Carriage Water	April-Nov.	TSS	3 / week

Table 3. Water quality limitations and monitoring requirements for proposed carriage water discharge to Lake Onalaska at Halfway Creek mouth at Hwy Z.

Period	Total NH_3-N mg/l (weekly avg) Carriage Water	TSS mg/l (daily max) Carriage Water
April-May	1.9	500
June-November	3.2	500

Monitoring Requirements For Periods of Discharge to Lake:

Location	Period	Parameter(s)	Frequency
Carriage Water	April-Nov.	NH_3-N, DO, TSS Temp, pH, NH_3-N	3 / week

Table 4. Water quality limitations and monitoring requirements for proposed carriage water discharge to Lake Onalaska at Culvert under Burlington Northern Railroad tracks southeast of Halfway Creek mouth.

Period	Total NH3-N mg/l (weekly avg) Carriage Water	TSS mg/l (daily max) Carriage Water	TSS mg/l (daily max) Lake*
April-May	7.2	500	80
June-August	1.9	500	80
Sept-October	5.1	500	80
November	8.0	500	80

* To be met in the Lake Onalaska at a point midway between the carriage water discharge at the railroad culvert and the Onalaska spillway. The sampling location shall be approved by the Department before discharge begins.

Monitoring Requirements For Periods of Discharge to Lake:

Location	Period	Parameter(s)	Frequency
Carriage Water	April-Nov.	DO, TSS Temp, pH	3 / week
Carriage Water	June-Aug.	NH3-N	3 / week
Lake Onalaska	April-Nov.	DO, TSS Temp, pH	3 / week
Lake Onalaska	June-Aug.	NH3-N	3 / week

Table 5. Water quality limitations and monitoring requirements for proposed carriage water discharge to Lake Onalaska for Islands Construction.

Period	Total NH3-N mg/l (weekly avg) Lake *	DO mg/l (daily min) Lake *	TSS mg/l (daily max) Lake *
April-May	8.2	5	1000
June-August	2.5	5	1000
Sept-October	8.1	5	1000
November	12.7	5	1000

* To be met at distances no greater than 500 ft from island construction sites. During periods of low DO due to background conditions, DO levels shall meet background concentrations.

Samples shall be representative of the carriage water discharge plume and collected at a point no greater than 500 ft from carriage water discharge location. Sampling procedures and locations shall be approved by the Department before discharge begins.

Monitoring Requirements For Periods of Discharge to Lake:

Location	Period	Parameter(s)	Frequency
Lake Onalaska	April-Nov.	DO, TSS Temp, pH	3 / week
Lake Onalaska	June-Aug.	NH3-N	3 / week

Table 6. Water quality limitations and monitoring requirements for proposed carriage water discharge to Lake Onalaska from in-water disposal basin(s) to be located in the area between Rosebud Island and Halfway Creek.

Period	Total NH3-N mg (weekly avg) Basin Outlet	TSS mg/l (daily max) Basin Outlet	TSS (daily max) Lake*	DO (min) Lake*
April-May	7.2	1000	80	5
June-August	1.9	1000	80	5
Sept-October	5.1	1000	80	5
November	8.0	1000	80	5

* To be met in Lake Onalaska at two locations. One station shall be sampled adjacent to the northwestern tip of Rosebud Island in Lake Onalaska. A second station will be above the Onalaska spillway at a point midway between the Burlington Northern Railroad culvert (near Halfway Creek) and the spillway. Sampling procedures and locations shall be approved by the Department before discharge begins.

During periods of low DO due to background conditions, DO levels shall meet background concentrations.

Basin discharge samples shall be representative of the carriage water discharge plume no greater than 100 ft from the basin outlet. Sampling procedures and locations shall be approved by the Department before discharge begins.

Monitoring Requirements For Periods of Discharge to Lake:

Location	Period	Parameter(s)	Frequency
Basin Discharge	April-Nov.	DO, TSS Temp, pH	5 / week
Basin Discharge	June-Aug.	NH3-N	3 / week
Lake Onalaska (Two Sites)	April-Nov.	DO, TSS Temp, pH	3 / week

Wisconsin Department of Transportation

June 1, 1988

TRANSPORTATION DISTRICT 5
3550 Mormon Coulee Road
P.O. Box 337
La Crosse, WI 54602-0337

Colonel Joseph Briggs, District Engineer
DEPARTMENT OF THE ARMY
St. Paul District Corps of Engineers
1241 U.S. Post Office and Custom House
St. Paul, Minnesota 55101-1479

Subject: I.D. 1631-00-01
Onalaska-STH 93 Road
(Main St. - STH 35)
USH 53, La Crosse County

Dear Colonel Briggs:

For the past year we have been working with members of your staff to work out a methodology for construction coordination of the State's Highway 53 project with the Corps' Lake Onalaska Rehabilitation and Enhancement Project. It has been apparent for some time that the successful melding of these two efforts would be of mutual benefit to both parties. This is true not only from the standpoint of substantial dollar savings, but also because of the potential environmental benefits. It has been projected that project costs to both agencies could be reduced by about $1,670,000 with these two projects completed under one construction contract. In addition, the mining of fill for the highway from the same area as the Corps' channel dredging would eliminate the use of an upland site, thereby limiting environmental impacts to only one location.

Given the above factors, we are firmly committed to moving forward with construction of a combined State/Corps project. Because the greater share of this project (in terms of both construction complexity and dollar expenditures) rests within our portion of the work, we request that the Department of Transportation accomplish both projects. We understand that in order for us to do this, we must enter into a Section 215 Agreement with the Corps. We have reviewed the Corps draft Definite Project Report for Lake Onalaska, dated March 1988, as well as a draft Section 215 Agreement. Work done by us will be performed substantially as outlined in these documents.

Our department is currently in the final design phases of the Highway 53 project. The State is committed to a 2-year construction schedule, the first year of which must commence in 1989. Because of the length of time required to complete the proposed dredging operation, it is imperative that this construction contract be let very early in the year. Therefore,

...more...

advertisement for bid is presently scheduled for November 1988. This means that final design information from the Corps on their portion of the project must be to us no later than September 1, 1988. In order to assure that the above time frame is met, the Section 215 Agreement must be finalized as soon as possible.

For our part, we are moving forward with plans and specifications based on the assumption that the proposed combined project will become a reality. To date both my department and yours have committed time and money to this concept. We understand that no credit can be given to us for work done prior to the signing of the Section 215 agreement; however, we hope that this will be concluded as quickly as possible so that there can be an equitable sharing of expenses. We further understand that, even after the signing of this agreement, there will be no actual monetary payments made to us until work is completed and funds have been allocated, via the Federal budgetary process.

We look forward to working with the Corps on this project and hope that this request for prompt approval of the Section 215 Agreement will be acted upon.

Sincerely,

THOMAS R. KINSEY, P.E.
District Director

TRK:DBD:os

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

PHONE NO.

Mississippi River System Management Team
Route 2, Box 230
Lake City, MN 55041-9015

FILE NO.

July 26, 1988

Colonel Roger Baldwin
District Engineer
St. Paul District, Corps of Engineers
1421 U.S. Post Office and Custom House
St. Paul, MN 55101-1479
Attn: CENCSPD-PF

Dear Colonel Baldwin:

RE: Draft Definite Project Report for Lake Onalaska Dredge Cut and Island Creation - Habitat Rehabilitation and Enhancement Project

The Minnesota Department of Natural Resources has reviewed the above report and has no specific comments at this time.

We commend the Corps for the extensive effort made to solicit input from all pertinent agencies and to coordinate the timing for the joint HREP-Wisconsin Department of Transportation highway improvement project. The Department has been involved in reviewing preliminary drafts of this report, as well as subsequent planning meetings, and we are encouraged by the cooperative effort.

We understand further changes have been made on the details of the HREP project, based on new sediment information, since the release of this DPR. Therefore, we offer our support for the basic HREP project concept presented in the Draft DPR, rather than the details, and continued involvement in future planning meetings and review efforts. We would like to note our concern, however, that the details of the project have been so volatile. We hope the plan begins to stabilize as we reach the next planning stage.

Thank you for the opportunity to comment. We look forward to continued cooperative efforts on Upper Mississippi River System projects.

Very truly yours,

Steven P. Johnson
Mississippi Team Coordinator

cc: Keith Beseke, USFWS
Louis Flynn, MPCA
Pam Thiel, WDNR

PROTECTION & REHABILITATION DISTRICT

CORRESPONDENCE:
UWEX Room 112 Courthouse
La Crosse, Wisconsin 54601
608-785-9593

October 30, 1987

Colonel Joseph Briggs
St. Paul District Corps of Engineers
1135 U. S. Post Office & Custom House
St. Paul, MN 55101

Dear Colonel Briggs:

We understand that the COE is in the process of making a policy decision on the scope of the Lake Onalaska Rosebud dredging project for fisheries habitat improvement. We urgently request that you make sure the project scope includes the use of dredge material from Lake Onalaska to build an approved freeway adjacent to the Lake.

The proposal for a combined project to improve the fisheries habitat, provide nearby island restoration and to supply dredged material to Wisconsin DOT for adjacent freeway construction has been publicized for several years. It has the support of Wisconsin DOT, Wisconsin DNR and the Fish and Wildlife Service, as well as local citizens and legislators.

Under such a combined project, there would be a doubling of the benefits, including aquatic habitat improvement, beneficial use of dredge material, cost-efficient dredging operation and improved River aesthetics. Working together, the involved agencies will experience a substantial savings for the overall benefit gained.

The Corps previously seemed to support a combined project, but at the October 14, 1987 meeting in La Crosse, we learned that the Corps seems to be leaning toward a much smaller project that does not include the material for freeway construction. We were shocked to find out that the Corps, while seeming to agree in principle to a combined road/lake project, has not been aggressively trying to accomplish this larger, more beneficial project. In fact, next year's budget does not even provide for engineering funds for the project.

The road project is scheduled for construction in 1989, and unless immediate aggressive steps are taken, the combined project opportunity will be lost.

The public, who have enthusiastically supported Federal EMP legislation, will not understand if such an opportunity is bungled and lost, especially since

all the agencies and public officials have spoken out in favor of the combined project.

We will appreciate your strong support of this combined project so that the opportunity is not lost.

Sincerely,

William Steinmetz

William Steinmetz
Chairman
Lake Onalaska Protection & Rehabilitation District

WS/lg
cc: Steve Gunderson
Brian Rude
William Proxmire
Robert Kasten
John Medinger
Virgil Roberts

November 10, 1987

Plan Formulation
Planning

Mr. William Steinmetz
Chairman
Lake Onalaska Protection & Rehabilitation District
UWEX Room 112 Courthouse
La Crosse, Wisconsin 54601

Dear Mr. Steinmetz:

Your letter of October 30, 1987, encouraged the use of dredged material from the Lake Onalaska Environmental Management Program (EMP) project to build a freeway adjacent to the lake. We agree that both the Wisconsin Department of Transportation (DOT) and the Corps of Engineers could obtain benefits by linking construction of the freeway project with the proposed Lake Onalaska EMP project. We are currently working to meet this goal. However, linking or combining the projects is a difficult task because of different funding sources and levels of project development. There are certain procedures that must be used in order to implement a link between the projects.

As explained by Mr. Don Powell at the October 14, 1987, public meeting, the schedule and budget for the Lake Onalaska EMP project were developed and submitted to higher authority prior to our knowledge of the critical need for material and the construction schedule of the freeway project. The President's budget for fiscal year 1988 does not include funds specifically for the Lake Onalaska EMP project because of other perceived program priorities at the time of budget development. However, it is the desire of the Corps to maintain flexibility in funding of EMP habitat projects. If a project is ready to proceed or demonstrates a real need for funds, attempts will be made to reprogram available funds to meet these project needs.

At a coordination meeting held in July 1987 between the Wisconsin Department of Natural Resources (DNR), the DOT, and the Corps, it was agreed that the current Lake Onalaska EMP project schedule (construction funding in fiscal year 1989) would be acceptable for the linking of the two projects. Recent communications with the Wisconsin DNR confirm that this would still be acceptable. Therefore, we are diligently proceeding on the Lake Onalaska EMP project with the intention of linking the projects. We will continue to maintain close communications with the Wisconsin DNR and the DOT as appropriate.

It must also be recognized that the Lake Onalaska EMP project is of smaller magnitude than the freeway project and much of the material within the EMP project limits may not be suitable for highway embankment construction. The EMP project will not provide a means of sharing the cost for the entire amount of material needed for the freeway project. The freeway project will have to bear the full cost of obtaining material needed that exceeds the limits of the EMP project.

If you have any additional concerns, please contact me.

Sincerely,

Joseph Briggs
Colonel, Corps of Engineers
District Engineer

Attachment 6

Distribution List

This Definite Project Report/Environmental Documentation was sent to the following agencies and interests:

Federal
Department of Transportation (Chicago*, Kansas City*)
Environmental Protection Agency
U.S. Coast Guard*
U.S. Fish and Wildlife Service (La Crosse, St. Paul, Winona, Twin Cities, Rock Island*)
U.S. Geological Survey (St. Paul, Madison*)
National Park Service*
Soil Conservation Service (Madison*)
Advisory Council on Historic Preservation*

State of Iowa
Department of Natural Resources

State of Minnesota
Department of Energy, Planning, and Development*
Department of Agriculture*
Department of Health*
Department of Natural Resources (St. Paul*, Lake City*, Frontenac)
Department of Transportation*
State Historic Preservation Officer
State Archeologist*
Pollution Control Agency
Water and Soil Resources Board*

State of Wisconsin
Department of Administration*
Department of Agriculture*
Department of Health and Social Services*
Department of Natural Resources (Madison, La Crosse, Eau Claire*)
Department of Transportation (La Crosse)
State Historic Preservation Officer
State Archeologist

Local and Other Interests
La Crosse County Commissioners
La Crosse County Engineer
Village of Onalaska
City of La Crosse
Lake Onalaska Rehabilitation District
Minnesota-Wisconsin Boundary Area Commission
Onalaska Post Office*
La Crosse Post Office*
La Crosse Public Library*
Sierra Club*
Izaak Walton League*
La Crosse Tribune*
National Audubon Society*
Upper Mississippi River Basin Association*
Approximately 25 individuals

*Public Notice Only

Attachment 7

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