LONG-RANGE IMPLEMENTATION STRATEGY

For the

Lake Sinissippi Improvement District

June 6, 2002

Prepared by Hey and Associates, Inc.

Project No. W01090

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INTRODUCTION

The Lake Sinissippi community has worked for the past several years to develop a consensus on a long-range management plan and vision for the lake. The Lake Sinissippi Improvement District has identified several long-range projects that they would like to implement in the next several years:

- Watershed management
- Dredging to improve navigation and aquatic habitat
- Fish and wildlife habitat improvement
- Fishery restoration
- Carp barrier at dam
- Aeration
- Fish rehearing facilities
- Purple loosestrife control
- Potential Winter drawdown
- Public education

To implement the above projects, the Improvement District has developed the following implementation strategy that identifies the following implementation components for each potential project:

- Needed feasibility studies
- Needed cooperating agencies
- Needed permits
- Potential sampling required
- Potential funding sources, application requirements, and dates
- Time schedules for each components

The following report will layout each of the potential projects in a logical sequence to prevent conflicts and maximize potential project success. Potential federal and state grants to implement the projects will be identified.

A BRIEF HISTORY OF LAKE SINISSIPPI

Sinissippi Lake is an impoundment of the Rock River created in 1845 when the dam was built in Hustisford. The scenic and historic Rock River, including Lake Sinissippi, draws recreational users for activities such as boating, fishing and hunting. Prior to the construction of the dam, the area was a flat, wetland basin through which the Rock River meandered. Soils in the basin were largely peat. The reservoir created by the dam was shallow with unstable, marshy shorelines that eroded rapidly. In 1939, the dam was raised 1.43 feet to its present elevation, adding to shoreline erosion. The size of the lake in 1939 was 2,300 acres; by 1971, the open water area had increased to 2,855 acres.

Stories repeated by "oldtimers" tell about the great northern pike (*Esox lucius*) fishing that they had on the marsh and Lake Sinissippi. The story changes, however, when carp (*Cyprinus carpio*) were introduced into the Rock River watershed during the 1880s. The carp populations rapidly increased in the shallow, fertile environment. Though carp were abundant in 1954, some bays on the lake were still covered with vegetation and the water was clear. By 1957, aquatic vegetation was sparse and the lake had heavy algae blooms. A very severe winter in 1959 is reported to have caused a winter fish kill of the remaining game fish, after which carp and bullhead quickly became the dominant fish species in the system. From 1941 to 1969, serious fish kills occurred 15 times, nearly every other year.

In 1969, the Rock River Reclamation Project was initiated with a goal of restoring sport fish populations and waterfowl habitat in the river system from the headwaters downstream to Lake Koshkonong. On November 19, 1971, the Hustisford Dam was opened to initiate drawdown of Lake Sinissippi, which was to be treated with fish toxicants to eradicate carp during the summer of 1972. The project could not be completed in 1972 because of heavy rains. The lake drawdown was continued through the summer of 1973, a two-year drawdown instead of the planned one-year drawdown. The treatment of the Rock River system above Hustisford Dam was completed August 27, 1973, and the dam was closed to refill the lake. The planned objective of the treatment upstream of Hustisford was to eliminate carp from the system. The eradication project killed 99.9 percent of the carp population in the river system, but did not eliminate carp from the Rock River headwaters.

Immediately following the carp eradication suspended sediments quickly settled. The water cleared, allowing sunlight to penetrate and aquatic plants to grow. This plant habitat attracted abundant wildlife, but interfered with boating on the lake. The dense plant growth led to the formation of Lake Sinissippi Harvestors, which began operation of a plant harvester to maintain navigational channels in the lake. Aquatic plant growth continued for about six years after the carp eradication. The two-year drawdown also allowed cattails to become established on the exposed lakebed. Cattail grew luxuriantly on the re-flooded lakebed for several years, eventually receding to shallow water fringe. During this time, attempts to reestablish the fishery were unsuccessful. Evaluation surveys found carp in the West Branch of the Rock River in September 1974. In August 1976, adults and a large number of young-of-year carp were found in the federal section of Horicon Marsh. Spot treatments of several large bay areas were conducted to try to control the carp in the marsh.

By 1983, rooted plant growth became sparse in the lake. As the plants began to die and decompose the amount of dissolved oxygen in the water dropped, leading to winter and summer fish kills. In 1984, carp were again abundant throughout the system and began to impact plant growth and muddy the water. As plant growth declined, wind action further suspended sediment in the lake causing decreased water clarity.

The nutrient rich water of Lake Sinissippi is what allowed carp to thrive when they were first introduced to the system. The water quality of the lake, like any other waterbody, is a sum of the physical, chemical and biological factors of the watershed. A lake watershed consists of the lake and all of the surrounding land that drains toward the lake. Any area of land within the watershed contributes water and associated pollutants to that lake. This watershed is comprised of residential development, agricultural cropland and undeveloped wetland areas.

LAKE PHYSICAL DESCRIPTION

Lake Sinissippi is a 2,854-acre impoundment (Figure 1). Table 1 outlines the general characteristics of the lake. The lake bottom is mainly composed of silt (material washed into the lake from the surrounding watershed) with the average water depth varying between 3 and 4 feet. The maximum water depth is 8 feet. Shorelines along the eastern shore, around the islands, and along shores with steep slopes have firm, gravelly substrates that are beneficial for fish spawning. Due to the large, shallow open water area and silt bottom, periods of high winds and wave action caused by boats re-suspend sediment resulting in murky or turbid water.

The Lake Sinissippi shoreline along the south and east is extensively developed with seasonal and permanent homes. In recent years many of the lower value properties have been improved or replaced by higher value homes. Condominium and apartment complexes have been developed within the Village of Hustisford on the south end of the lake. The undeveloped land that remains along the north and west shores is farmland, marsh and state conservancy. Sanitary sewer districts serve properties on Butternut Island, Sinissippi Point and Arrowhead Point and along the east shoreline. Lake front properties within the Village of Hustisford are served by the village sanitary sewer system.

The lake is heavily used for water-oriented recreation, particularly boating and water skiing. The marshy bays are used extensively for waterfowl hunting. Some fishing occurs on the lake, but is relatively light due to the poor condition of the fish population. Snowmobiling on the lake and river between Horicon and Hustisford is popular. Public boat access is provided by municipal facilities located in Horicon and Hustisford, as well as at several small town sites.

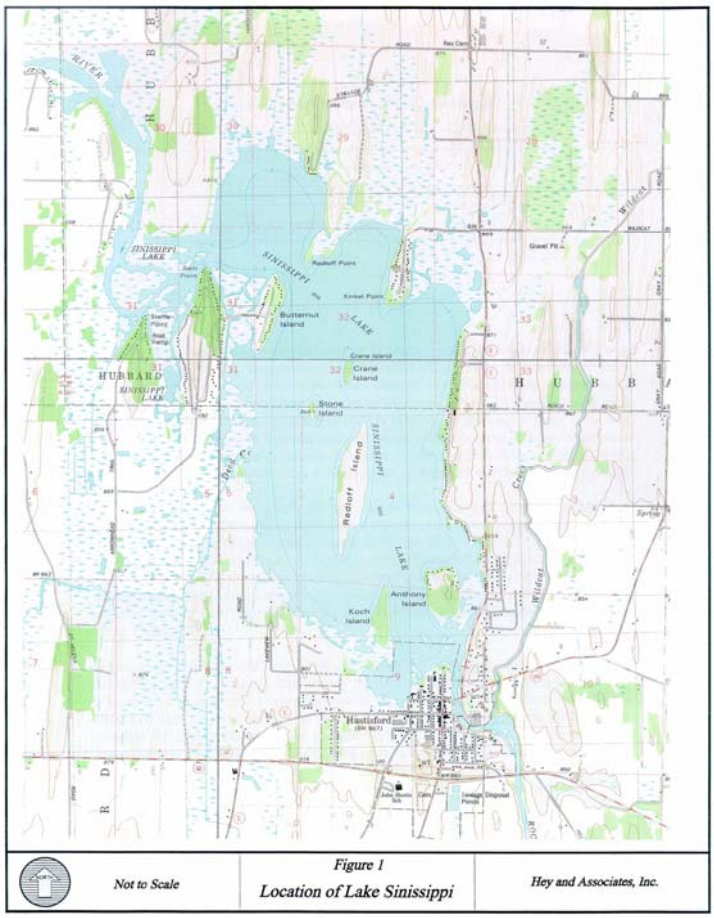


Table 1
Physical Characteristics of Lake Sinissippi

Size	2,854 acres
Watershed Area	511 sq. miles
Watershed Area/Lake Area	115:1
Maximum Depth	8 feet
Average Depth	4.5 feet
Lake Area Less Than 3 ft. Deep	20 percent

Source: WDNR

WATERSHED DESCRIPTION

Lake Sinissippi has a large watershed area of 511 square miles for a watershed/lake area ratio of 115:1 (Table 1). Impoundments with watershed/lake ratios greater than 10:1 are

generally very fertile and more difficult to manage. The Rock River watershed is intensively farmed for production of agricultural crops. Much of the once abundant wetlands in the watershed have been converted to cropland by ditching or tiling. The loss of wetlands, combined with exposed soils and intensive farming, contributes to sediment runoff reaching the lake during snowmelt or rain. Agricultural fertilizers, animal waste, eroded soil, and marsh sediment are major sources of nutrients entering the river system.

Prior to entering Lake Sinissippi, the Rock River flows through the Horicon Marsh. Dams on the Federal Dike and in Horicon at the outlet of the marsh control the water level in the marsh. The federal dam is operated by the U.S. Fish and Wildlife Service (USFWS); the Horicon dam by the Wisconsin Department of Natural Resources (WDNR); and the Hustisford Dam by the Village of Hustisford. The USFWS and WDNR manage Horicon Marsh as a wildlife refuge and waterfowl management area for ducks and geese. Due to the low river gradient, the Hustisford dam impounds water as far upstream as the Federal Dike.

Lakes, both natural and impoundments, undergo an aging process known as eutrophication. As lakes age, they slowly fill with sediment eroded off the land surface (Figure 2). The process of eutrophication is accelerated when the lake's watershed is developed and soils are bared. If nothing is done to slow the process, all lakes will someday fill to the point that they become wetlands and no longer function as lakes. Impoundments, such as Lake Sinissippi, are at greater risk from sedimentation. Impoundments generally have large watersheds, several tributaries, and steeply sloped shorelines, which result in higher sediment inputs. As stormwater slows upon entering a lake, much of the silt settles out and remains.

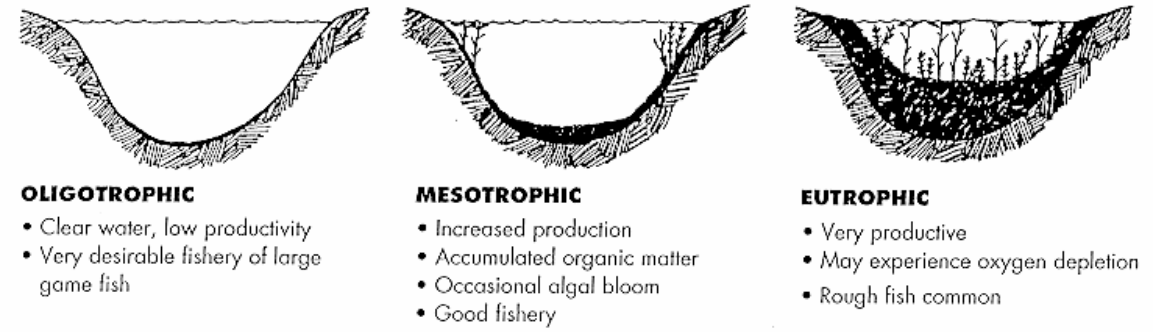
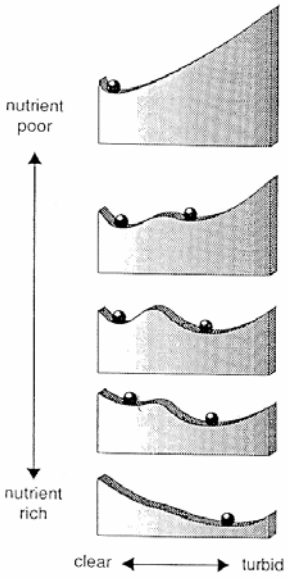


Figure 2 - Aging Stages of Lakes and their Attributes (adapted from Shaw, 1994)

The Horicon Marsh functions both as a filter and a source of nutrients and organic matter that flow into Lake Sinissippi. Lush plant and animal growth in the marsh produces high organic loading, which upon death and decomposition consumes oxygen from the water. This process results in oxygen depletion during ice and snow cover and occasionally during the open water season. Waterfowl using the marsh contribute some nutrient and organic loading to the marsh waters, but this source of loading is very minor compared to the nutrient load carried into the marsh from tributary streams. The U.S. Geological Survey (USGS) is currently conducting a study of sediment and nutrient transport into Lake Sinissippi. The monitoring project is being funded in part through a Wisconsin Lake Protection Grant.

WATER QUALITY

Lake Sinissippi has high nutrient levels, low water clarity, a fishery dominated by carp, and a large watershed to lake ratio. Natural events and human impacts help determine the fate of a shallow lake to a greater degree than a deep lake. Figure 3 (to the right; adapted from Hosper and Meijer, 1992) shows alternative stable states in shallow lakes. Oligotrophic lakes have only the clear water state and tend to be dominated by aquatic plants, while on the other end of the scale, hypertrophic lakes have only the turbid water state and are often loaded with algae. Alternative states can exist in the middle of these two extremes. The marble in the illustration shows the difficulty in changing the state of a shallow lake if it reaches either extreme. The long-range management strategy should address all of these problems as one issue. By addressing only one problem, such as carp eradication, other nuisance conditions (excessive plant growth) may arise. Research has shown that biomanipulation (altering the fisheries, aquatic plants and other aquatic organisms) along with watershed management to reduce phosphorus concentrations in the lake to below 100 ug/l may be the only way to push the lake back to one of the middle stages. Currently the average concentration of phosphorus in Lake Sinissippi is 310 ug/l.



MANAGEMENT STRATEGY

The Lake Sinissippi Improvement District, in working with the Lake Sinissippi Association, local units of government, the Wisconsin Department of Natural Resources, and local residents have identified a series of management projects for potential implementation. The potential projects fall in the following broad categories:

- Watershed management
- Dredging
- Habitat restoration
- Fishery restoration

The following section will identify the following implementation components for each potential project:

- Needed feasibility studies
- Needed cooperating agencies
- Needed permits
- Potential sampling required
- Potential funding sources, application requirements, and dates
- Time schedules for each components

Watershed Management

Lake Sinissippi is characterized by high concentration of nitrogen and phosphorus, and has been experiencing a reduction in water depth due to increasing sediment deposits in shallow areas. To control the sediment and nutrient inputs to the lake, an active program of watershed management is proposed. The management strategy for watershed management will involve the following components:

1. Coordination with the Natural Resources Conservation Service (NRCS) and Dodge County Land Conservation Department to implement the Conservation Reserve Enhancement Program (CREP). The CREP program is a federal-state effort to acquire conservation buffers along streams and waterways. The Lake Sinissippi Improvement District, with the assistance of a Lake Planning Grant from the WDNR, is funding a part of a staff position for calendar year 2002 at the NRCS Juneau Service Center to coordinate implementation of the CREP program.

2. The Lake Sinissippi Improvement District will be working with local townships and municipalities to encourage the adoption of construction site erosion control ordinances to prevent sediment from entering the lake.

3. To educate local landowners as to what they can do individually to control nonpoint source pollution, from sources such as lawns and shorelines, the Lake Sinissippi Improvement District will be preparing a citizen handbook.

4. For the past two years the USGS in cooperation with the WDNR and Lake Sinissippi Association has been monitoring phosphorus and sediment inputs into Lake Sinissippi from the mainstem of the Rock River. Monitoring stations were operated at the outlets of the Horicon Marsh and Lake Sinissippi. To understand the importance of Dead Creek, a major tributary entering Lake Sinissippi from the west, a monitoring of the stream will take place in 2002. The results of the Dead Creek monitoring combined with previous monitoring of the Rock River will be used to develop a phosphorus and sediment budget for lake Sinissippi. The pollutant budgets will be used to guide future nonpoint source control efforts.

5. The Lake Sinissippi Improvement District will act as a citizen advocacy organization to work with local municipalities to assure that local land use and other regulatory decisions are made in light of protection of the quality of Lake Sinissippi.

6. The Lake Sinissippi Improvement District will participate with Rock River Headwaters, an organization of government agencies and citizen groups working to improve the quality of the Upper Rock River.

Needed Feasibility Studies

To better understand the sources of phosphorus and sediment entering Lake Sinissippi, a study to identify major sources of pollution is required. This effort is being conducted under Item 4 above. Based on the outcome of the phosphorus and sediment budget, follow-up feasibility studies on management alternatives may be necessary. Other watershed management items discussed above should not require needed feasibility studies.

Needed Cooperating Agencies

Watershed management by its nature requires the cooperation of many agencies and individuals. Pollution from watershed is predominantly nonpoint source in nature and is not generally regulated under existing regulations. Most nonpoint source pollution control is voluntary and requires the cooperation of local landowners. Implementation of many control measures is the result of public education and state and federal financial incentives in the form of grants or other payments. To implement a successful watershed management program the following organizations need to participate in a cooperating manner:

- Lake management districts
- Local townships
- Local municipalities
- Dodge County
- Wisconsin Department of Natural Resources (WDNR)
- Wisconsin Department of Agricultural, Trade and Consumer Protection (DATCP)
- U. S. Department of Agriculture
- Property owners associations
- Farm Bureau
- Sportsman clubs
- Environment advocacy organizations
- Intergovernmental cooperating agencies such as the Rock River Headwaters
- Land trusts
- Private citizens

Needed Permits

All of the above activities involve predominantly public education, studies and advocacy efforts and at this time will not require regulatory permits. Some future structural nonpoint source control activities may require permits from the local units of government, WDNR and the U. S. Army Corps of Engineers.

Potential Sampling Required

To better understand the importance of Dead Creek as a source of pollution additional sampling is required. Item 4 above will address this issue. To understand the importance of other tributaries to the lake additional sampling may be required in the future.

Potential Funding Sources, Application Requirements, and Dates

Potential funding sources for nonpoint source planning and implementation include:

Funding Source	Funding Rate	Application Date
Nonpoint Source and Stormwater Grants	70% technical assistance, 50% project cost to maximum of $150,000	May 1, 2002
Targeted Runoff Management Grants	50% project cost to maximum of $150,000	May 1
Lake Protection Grants	75%project costs	May 1
River Protection Grants	75%project costs to maximum of $50,000	May 1
Stewardship Grants (land acquisition)	50% land acquisition	No deadline
Conservation Reserve Enhancement Program (CREP)	Cost share based on state formula by county	No deadline

Time Schedules for Each Components

The time schedule for each of the above watershed management activities is outlined in Appendix A.

Project Costs

Project costs for the above activities are outlined in Appendix B.

Dredging

As an impoundment, Lake Sinissippi is by nature shallow. Even minimal sediment deposits can result in impediments to navigation. Sediment deposits in many historic channel areas have impacted navigation. Sediment deposits in environmentally sensitive areas, such as fish spawning and nursery areas, have damaged wildlife habitat. Major sources of sediment include watershed runoff, shoreline deterioration, and erosion of riparian marsh areas, caused by changes in lake water quality and increased abundance of carp.

To undo the damages of past sediment deposits, the Lake Sinissippi Improvement District would like to undertake a series of dredging projects. The purpose of the dredging would be to improve navigational access, and improve fish and wildlife habitat. Six areas have been chosen for potential dredging, these areas are illustrated on Figure 4.

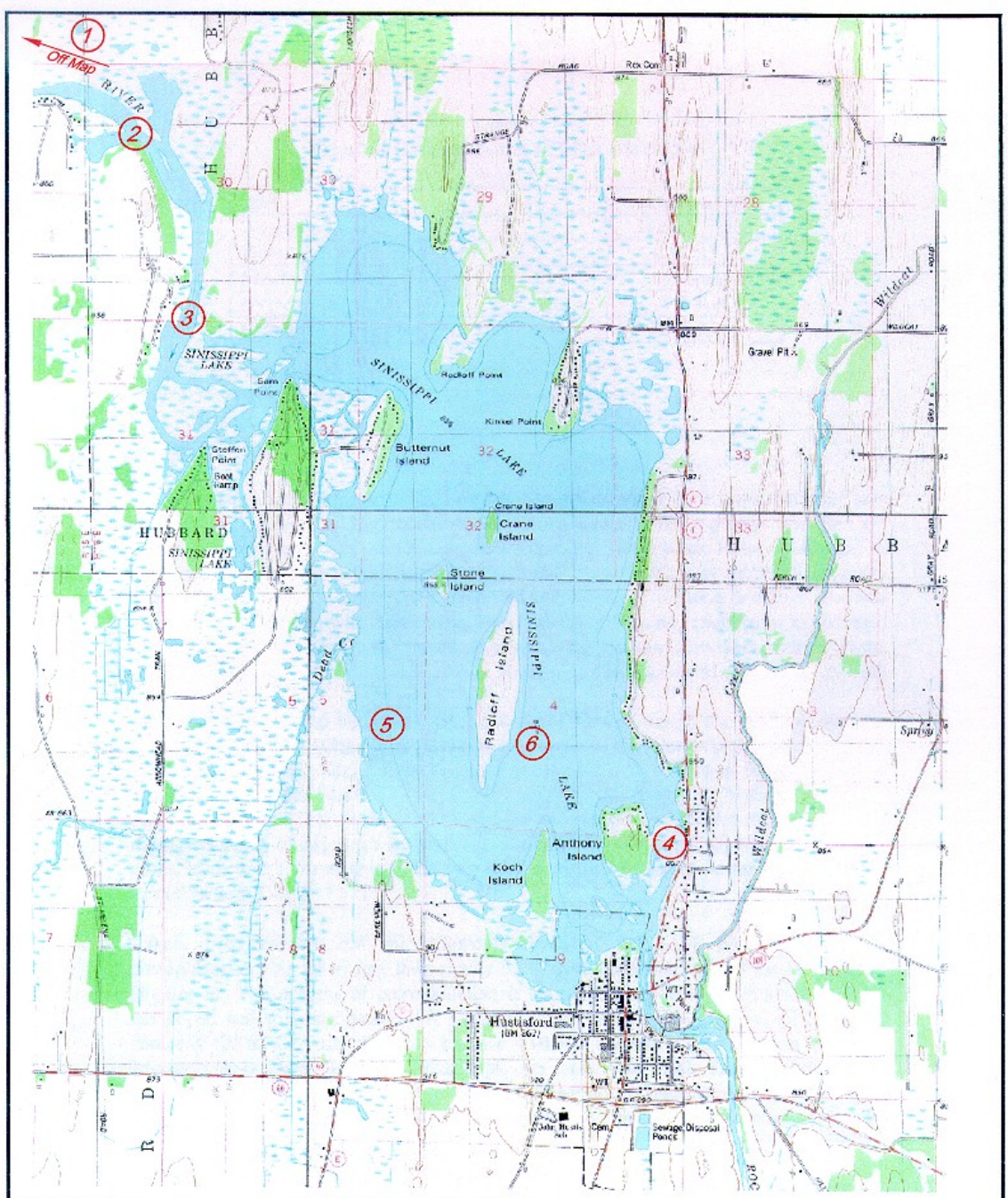
Needed Feasibility Studies

Prior to undertaking a dredging project, an engineering feasibility study is needed. The study needs to identify areas to be considered for dredging, determination of the quantity and quality of the material to be removed, cost and methods of dredging, potential disposal sites and methods of disposal, and potential environmental impacts of the project. A first major step of a dredging feasibility study is a mapping of the lake bottom contours to identify current lakebed characteristics. This mapping would also be used for analysis of habitat restoration to be discussed latter in this report.

Needed Cooperating Agencies

To undertake a dredging project permits will be required from several local, state and federal agencies. Due to potential size of the project outside funding in the form of grants will likely be required. The above activities will require the cooperation of several agencies. Agencies that will need to participate in the project include the following:

Agency	Role
Wisconsin Department of Natural Resources (WDNR)	Chapter 30 Permits, potential funding source through Lake Protection Grant Program
U.S. Army Corps of Engineers (USACOE)	404 permit
U.S. Fish and Wildlife Service	Commenting agency on 404 permit
Dodge County	Potential permits for disposal sites
Local townships	Potential permits for disposal sites


1
Off Map
2
3
4
5
6
RIVER
SINISSIPPI LAKE
SINISSIPPI
Redcliff Point
Kinkel Point
Butternut Island
LAKE
Crane Island
Stone Island
HUBBARD
SINISSIPPI LAKE
Dead Cr
Radcliff Island
SINISSIPPI
LAKE
Anthony Island
Koch Island
Hustisford
Gravel Pits
Wildcat
Spring
Sewage Disposal Ponds
Not to Scale
Figure 4
Location of Potential Dredging
Hey and Associates, Inc.

Needed Permits

Dredging projects will require permits from the WDNR (Chapter 30), USACOE (404 permit), Dodge County and local units of government.

Potential Sampling Required

As part of the Chapter 30 permit process, sampling of the sediment for potential contaminants is required under Wisconsin Administrative Code NR 347.

Under Wisconsin Statute 289.01(33), dredge spoils can be a solid waste, requiring the disposal site to meet the requirements of a licensed landfill. To determine the potential for groundwater contamination, sampling of the soils in the disposal area may be required. The degree of sampling will be dependent on the site location, and degree of sediment contamination.

Potential Funding Sources, Application Requirements, and Dates

Funding Source	Funding Rate	Application Date
Lake Protection Grants	75%project costs	May 1
Recreational Boating Facilities Program Grants	50%project costs for navigation channel	Quarterly

Time Schedules for Each Components

The time schedule for each of the above dredging activities is outlined in Appendix A.

Project Costs

Project costs for the above activities are outlined in Appendix B.

Habitat Restoration

Aquatic and wildlife habitat has been declining on Lake Sinissippi for the past several decades. The decline of aquatic plant, fish and wildlife habitat has been documented in the following studies.

- Northern Environmental - Aquatic Macrophyte Inventory, Sinissippi Lake, Dodge County, Wisconsin, 1994.

- State of Wisconsin Department of Natural Resources - A Fishery Survey of Lake Sinissippi, 1994.

- Waterfowl/Wildlife Biodiversity Monitoring, Lake Sinissippi – Poole, William R. September 1994.

Four species of waterfowl have been confirmed breeders within the lake area: mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), blue-winged teal (*Anas discors*) and Canadian geese. Lake Sinissippi also supports foraging and loafing opportunities for a relatively large number of great blue herons (*Ardea herodias*), and to a lesser degree, green herons (*Butorides striatus*), double-crested cormorants (*Phalacrocorax auritus*), and American white pelican (*Pelecanus erythrorhynchos*)

A pair of American bald eagles (*Haliaeetus leucocephalus*) has been observed nesting on one of the lakes islands for the past several years.

The present fish population in Lake Sinissippi is dominated by bottom feeding carp and bullheads (*Ameiurus* spp.). At present, the sport fishery for species other than walleye and northern pike is almost non-existent.

To improve the fish and wildlife habitat, the Lake Sinissippi Improvement District would like to undertake a series of habitat restoration projects. The field of habitat restoration is relatively new and the specific projects that would benefit Lake Sinissippi are not known at this time. To guide the habitat restoration effort a feasibility study of potential options is the first needed step. As part of the feasibility study characterization of the current conditions is needed. To provide a point of reference for the feasibility study a review of historic records will be conducted.

Needed Feasibility Studies

Fish and wildlife habitat restoration is an involved and detailed process that will require detailed pre-planning to be successful. A feasibility study to identify which management techniques will have the greatest potential for success is needed. Some data exists on the current fish and waterfowl populations. Past studies have identified that a lack of aquatic vegetation is a major obstacle to establishment of a quality fish and wildlife population. To understand potential opportunities for re-establishment of needed aquatic plants a better understanding of the water depths and sediment characteristics is needed. A mapping project to identify current water depth is proposed.

Needed Cooperating Agencies

Development of a fish and wildlife management plan will require the cooperation of the following agencies:

Agency	Role
Wisconsin Department of Natural Resources (WDNR)	Technical assistance, potential funding
U.S. Army Corps of Engineers (USACOE)	404 permit
U.S. Fish and Wildlife Service	Technical assistance, potential funding
Conservation organizations	Technical assistance, potential funding, potential labor

Needed Permits

Activities that involve habitat restoration within the lake or adjacent wetlands will require permits from the WDNR and USACOE. Many habitat restoration projects are eligible for nationwide general permits, which streamline the permit process. Specific permits required are unknown at this time.

Potential Sampling Required

To better under the potential for restoring needed aquatic plants in sensitive habitat areas, a study of current water depths is needed. This study would be the first step in preparing a habitat restoration plan. Follow up studies on sediment characteristic and available in-place seed banks may be required.

Potential Funding Sources, Application Requirements, and Dates

Funding Source	Funding Rate	Application Date
Lake Protection Grants	75%project costs	May 1
Fish and hunting licenses and stamps	-	Administered internally through WDNR
Sports Fish Restoration Federal Aid	-	Administered internally through WDNR
Pittman Robertson Federal Wildlife Aid	-	Administered internally through WDNR

Time Schedules for Each Components

The time schedule for each of the above habitat restoration activities is outlined in Appendix A.

Project Costs

Project costs for the above activities are outlined in Appendix B.

Fishery Restoration

The present fish population in Lake Sinissippi is dominated by bottom feeding carp. Walleye (*Stizostedion vitreum*) is the dominant predator species and a small northern pike population is present. Crappie and perch are present, but populations of these species are so low that the angler catch rate would be unacceptable. At present, the sport fishery for species other than walleye and northern pike is almost non-existent.

To restore the fishery on Lake Sinissippi the first step is to determine the type of fishery and habitat the lake can support. As a nutrient rich shallow lake, Lake Sinissippi is in a turbid state dominated by free floating algae. Today algae and carp dominate the lake. Control of the rough fish may clear up the turbid water conditions, allowing rooted aquatic plants to grow, and creating habitat necessary for game fish populations.

During the next year the Lake Sinissippi Improvement District will work with the WDNR to prepare a fishery restoration feasibility study. The study will layout the pros and cons of several management options. The results will be presented to the public for review and making of the final decision as to which plan to proceed with. In addition to evaluation of review of fishery restoration efforts, the lake district will also evaluate measures to sustain a restored fishery. Maintenance activities that will be explored include establishment of local fish rehearing facilities to provide fish stock for the lake, installation of an aeration system to prevent winterkill, and re-installation of the carp barrier on the lake outlet.

Needed Feasibility Studies

As outlined above, a feasibility study to determine the most practicable and community acceptable management plan is needed. The feasibility study will determine the type of fishery(s) that is possible considering the water quality constraints of the Upper Rock River, and that meet the needs of the local community. The feasibility study may involve a survey of public perceptions to balance the needs of the diverse lake community.

Needed Cooperating Agencies

Needed cooperating agencies and organizations for a successful fishery restoration project include:

Agency/Organization	Role
Wisconsin Department of Natural Resources (WDNR)	Technical assistance, potential funding
U.S. Fish and Wildlife Service	Technical assistance, potential funding
University of Wisconsin-Extension	Facilitation of public education and public perception surveys
Lake Sinissippi Association	Technical assistance, potential funding, potential labor
Conservation organizations	Technical assistance, potential funding, potential labor

Needed Permits

Permits would be required for the following activities that may be associated with a fishery restoration project:

- Lake drawdown (Chapter 30 permit)
- Aeration system (Chapter 30 permit)
- Eradication of rough fish (NR107)
- Private fish hatchery license (Chapter 29.52)

Projects sponsored by the WDNR are exempt from state permits, however must meet the intent of the regulations and follow the environmental review process outlined in Wisconsin Administrative Code NR 150.

Potential Sampling Required

Additional sampling of the fish population maybe necessary to assess current conditions, and the effects of management efforts. Pilot studies may be necessary to assess the applicability of any unique management strategies.

Potential Funding Sources, Application Requirements, and Dates

Funding Source	Funding Rate	Application Date
Lake Protection Grants	75%project costs	May 1
Fish and hunting licenses and stamps	-	Administered internally through WDNR
Sports Fish Restoration Federal Aid	-	Administered internally through WDNR

Time Schedules for Each Components

The time schedule for each of the above fishery restoration activities is outlined in Appendix A.

Project Costs

Project costs for the above activities are outlined in Appendix B.

Aquatic Plant Control

Implementation of management efforts that will improve water clarity, such as eradication of rough fish, may result in increased populations of rooted aquatic vegetation. While this vegetation is important for the ecological health of the fish and wildlife of the area, in excess quantities aquatic plants can interfere with recreational boating on the lake. As a contingency in case aquatic plants become a nuisance in areas of the lake, the Lake Sinissippi Improvement District believes that an aquatic plant control plan should be in-place. The plan envisions cooperation with Lake Sinissippi Harvesters and Sanitary District #2, with contracted services on an as needed basis.

COSTS

Many of the strategy elements outlined above are in a development state. Many elements involve conducting feasibility studies, planning and development of community consensus. Therefore, many of the long-term cost are unknown. Based on these uncertainties, the cost outlined in Appendix B are only for calendar year 2002.

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Appendix A
Schedule of Proposed Management Activities
2001 through 2006

Appendix B
Estimated Project Costs for 2002