

Review Draft

Resource Management Plan:



March 2002



REVIEW DRAFT

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Introduction

The Mississippi is one of the world's great rivers and one of the most complex ecosystems on the planet. It lies at the heart of what is American and is a recognized symbol of this nation. In recognition of its nationally significant historical, recreational, scenic, cultural, natural, economic and scientific resources, in November 1988, Congress designated a 72-mile stretch of the Upper Mississippi flowing through the Twin Cities metropolitan area as the "Mississippi National River and Recreation Area", a unit of the National Park System (Public Law 100-696).

Located near the confluence of three major ecoregions—the Great Plains, central hardwood forest, and northern pine forest—the Mississippi National River and Recreation Area (referred to locally as 'MISS' or MNRRA) contains significant natural resources. In this section of the Mississippi one finds the only gorge along the entire 2,348-mile Mississippi River, remnant native habitats, diverse flora and fauna, and many rare, threatened, and endangered species. As a major migration corridor for millions of birds, the Mississippi is essential to the ecological health of the North American continent. Regionally, the river corridor provides some of the most significant habitat in a highly populated urban area.

Culturally, the river is also of great significance. The MISS corridor possesses historic sites that document human occupation from the retreat of the glaciers some 12,000 years ago to recent past. Every context noted in the *Revision of the National Park Service's Thematic Framework* is represented. The variety and abundance of cultural resources in the MISS corridor is demonstrated by the presence of Paleo-Indian projectile point finds, petroglyphs and pictographs, rockshelters, burial mounds, contact-era Native American village sites, a Native American fortified site, fur trade posts, Fort Snelling military post, flour and saw mills, early settlements, brewery caves, bridges, locks and dams, historic houses and commercial buildings, potential sacred sites, and historic landscapes. The historic sites and people of MISS tell stories that mirror major themes of our nation's history: westward expansion and European settlement, loss of lifeways of native people, industrialization and the development of social and political institutions, development of a transportation network, and environmental transformation.

As the Mississippi River flows through the Twin Cities metropolitan area, it varies dramatically in character, with some places quite natural and others highly developed. River travelers pass through a range of landscapes (many of which are of historic significance), including high bluffs, wooded hillsides, floodplain forest, wetlands, cropland, residential neighborhoods, dense downtown areas with tall buildings, and industrial areas of factories, oil refineries and commercial navigation facilities.

Management through Partnerships

The Mississippi National River and Recreation Area is different from many other units of the National Park System, in that the National Park Service owns less than 50 of the 54,000 acres within the area's boundary. The large majority of land in the corridor is privately owned or is owned and managed by agencies other than the National Park

Service. Private owners control 64% of the land within the MISS corridor. Twenty-five municipalities are within the MISS boundary—and each of these has authority over local land use regulation, with approval of the Minnesota Department of Natural Resources. Five counties within the MISS also have some authority over activities in the corridor, as do a number of state agencies. The river itself, and activities on and in the river, are under the jurisdiction of local governments, several state agencies and other federal agencies. Table 1 lists agencies with management and regulatory authority in the MISS.

In this situation of multiple ownership and jurisdiction, the National Park Service must work in partnership with many others to carry out its responsibility to preserve, protect and enhance resources for the benefit of the people of the United States. The MISS Comprehensive Management Plan (CMP) specifies that NPS's role is that of coordination and facilitation among all agencies and levels of government with ability to implement the MISS CMP through their ongoing programs and activities. MISS's natural and cultural resource management activities are undertaken with many other local, state and federal agencies, Federally recognized tribes, business and industry, individual property owners, and private or nonprofit organizations. Table 2 lists many of the agencies and private organizations who are involved with the NPS in Mississippi River management.

Resource Management Objectives:

This Resources Management Plan is intended to provide a structure for implementation of the natural and cultural resource goals outlined in the Comprehensive Management Plan (CMP) for the Mississippi National River and Recreation Area. The enabling legislation for MISS specifies that National Park Service regulatory authority (*Code of Federal Regulations, 36 CFR*) only applies to lands that the NPS owns, which consists of 9 islands totaling less than 50 acres. The enabling legislation and CMP direct NPS to implement MISS through existing state and local authorities and programs—in partnership with state and local government. While the National Park Service owns less than 50 acres within MISS, it has responsibilities to cooperate with other landowners and managers to achieve a consistent, comprehensive approach to resource management of the entire 54,000-acre corridor.

Statements of Purpose that were identified through public processes to guide development of the MISS CMP also provide broad guidance for how the plan will be implemented through natural and cultural resource management activities. The Statements of Purpose, also the resource management goals, are to:

1. Preserve, enhance and interpret archeological, ethnographic and historic resources.
2. Enhance opportunities for public outdoor recreation, education and scenic enjoyment.
3. Preserve, enhance and interpret natural resources.

Table 1.

Permitting and Regulatory Authorities, Mississippi National River and Recreation Area	
Agency	Permits of Other Direct Regulatory Authority/Responsibility
FEDERAL AGENCIES	
Advisory Council on Historic Preservation	Provides comments to federal agencies on federally funded or permitted activities affecting historic resources under section 106 of the National Historic Preservation Act.
U.S. Army Corps of Engineers	The Corps of Engineers regulates work that could affect navigable waters, which are those bodies of water that have historically been used for commercial navigation. The agency issues permits for the placement of structures, dredging, and filling in navigable waters under section 10, Rivers and Harbors Act, 1899. They also regulate the discharge of dredged or other fill into all waters of the U.S. under section 404, Clean Water Act. No section 404 permit may be issued by the Corps of Engineers without a section 401 certification from the Minnesota Pollution Control Agency that the discharge of dredged or fill material will not violate state water quality standards.
National Park Service	The National Park Service was given the responsibility to work with the Mississippi River Coordinating Commission to create a comprehensive management plan for land and water use measures for the Mississippi National River and Recreation Area. Actual management or enforcement responsibilities are addressed in the plan. The MNRRA act mandates that the National Park Service review all federally funded or permitted activities in the corridor. The Park Service has no regulatory authority except over activities on the less than 5 acres of islands owned by NPS.
Federal Aviation Administration	The Federal Aviation Administration controls air traffic and regulates airport operations.
U.S. Coast Guard	The U.S. Coast Guard maintains the river channel buoy system and enforces safety standards, laws, and equipment vessels, barges, and floating plants. They enforce some pollution control laws, set bridge height standards, and inspect barges and recreational and commercial vessels.
U.S. Fish and Wildlife Service (USFWS)	The Fish and Wildlife Coordination Act of 1934 mandates all federal agencies to consult with the Fish and Wildlife Service to ensure that actions do not jeopardize endangered species.
Federal Energy Regulatory Commission	The Federal Energy Regulatory Com. has jurisdiction over all nonfederal hydroelectric power facilities that are located on or use water from a navigable stream, produce power that affects interstate or foreign commerce, are located on federal land, or use water impounded by a federal dam. The commission must issue a license before any such facility could be built.

Permitting and Regulatory Authorities, cont.

STATE AGENCIES	
Environmental Protection Agency	The Environmental Protection Agency establishes standards for water quality management, drinking water safety, solid and hazardous waste disposal, toxic substance management, air quality control, and general environmental quality review. Most enforcement is delegated to the states, although the agency retains oversight and could reassert its authority if it determines a state is not doing an adequate job. The agency may veto a 404 permit, and it may exercise the lead federal role for certain cases. In Minnesota the primary enforcement role for water quality is filled by the Minnesota Pollution Control Agency.
Environmental Quality Board	The Environmental Quality Board designates the routes for pipelines and transmission lines in the state and issues permits for their construction. The agency also determines power plant sites and issues certificates of site compatibility. Any state critical areas (the Mississippi River Corridor is the only active one) are recommended by the board. The agency writes standards for local critical area plans and reviews and approves all plans or amendments for compliance with the standards.
Minnesota Department of Agriculture	The Department of Agriculture enforces laws designed to protect the public health and enhance the environment. It adopts and enforces rules to clarify laws and to prevent fraud and deception in manufacture and distribution of foods, animal feeds, fertilizers, pesticides, and seeds. The department is the only state agency that speaks for and promotes the development of agriculture and agriculturally related industries in the state. It is the lead agency in soil and water conservation programs and other programs designed to protect agricultural land. The department administers several laws that prevent surface and groundwater pollution from agricultural practices, such as pesticide application.
Department of Natural Resources	The department has responsibility for issuing permits for many activities. These include any appropriation of surface or underground water, mining activities, and underground gas or liquid storage. The department issues licenses for utilities to cross state land or water. Most broadly, a permit is required for any activity that changes the course, current, or cross section of state waters, which includes filling, excavating, or placement of structures, including dams. The department establishes standards for shoreline protection through its regulations that must be adopted by local governments. The agency must approve local floodplain ordinances, which are mandated by state law, and also establishes zoning standards along state-designated wild and scenic rivers. The department also investigates fish kills and assesses damages from polluters.

Permitting and Regulatory Authorities, cont.

Minnesota State Historic Preservation Office	The Minnesota State Historic Preservation Office is responsible for preserving historic sites through nomination to the National Register of Historic Places. The office also comments on federally funded or permitted activities under section 106 of the National Historic Preservation Act. The State Historic Preservation Office is housed at the Minnesota Historical Society.
Minnesota Pollution Control Agency	The pollution control agency has responsibility for ensuring compliance with state and federal standards for all discharges into the air, land, or water. It exercises its regulatory authorities through an extensive list of permits as well as review processes. Air quality is protected through general air quality permits (for point source emissions), indirect source permits (e.g. parking ramps), and open burning permits. Waste disposal is regulated through solid waste facility permits as well as through permits for hazardous waste regulating storage, disposal, and treatment. Before any activity could proceed that could result in discharge into navigable waters of the state, the agency must issue a section 401 permit. Other permits include above-ground storage of liquids, a certificate of exemption for PCB users, animal feedlots, the discharge of municipal and industrial waste into state waters, a river dredging certificate, and a state disposal system permit for sanitary sewer systems. The National Pollutant Discharge Elimination System permit for any point source that discharges into waters of the U.S. is a federal permit, authority for which has been delegated to the agency. The agency also establishes standards for noise emissions and for general air quality.
Board of Water and Soil Resources	This board approves the establishment of special local tax districts, called watershed districts, which have regulatory authority over water management.

Permitting and Regulatory Authorities, cont.

REGIONAL AND LOCAL AGENCIES

Metropolitan Council	The Metropolitan Council was created by the state legislature to do long-range planning for the seven-county metropolitan area. The council reviews projects for consistency with its development guide for regional systems (highways, transit, airports, sewers, and parks) and approves local comprehensive plans. A number of commissions have been created to formulate and implement policies for these systems. Particularly relevant to lands in the Mississippi National River and Recreation Area are the Metropolitan Airports Commission, Metropolitan Parks and Open Space Commission, and the Metropolitan Waste Control Commission. The Metropolitan Airports Commission has broad authority over airports in the metropolitan area. It controls the international airport that abuts the Mississippi National River and Recreation Area near the confluence of the Minnesota River. Holman Field on the downtown St. Paul riverfront is also subject to MAC authorities over flight patterns and airport management. Through the Metropolitan Council, the airports commission is required to promulgate aircraft noise zones based on appropriate noise levels for each land use. Local governments are then required to incorporate these standards into local controls. This is the only instance where Metropolitan Council land use measures must be adopted by other bodies. The Parks and Open Space Commission has no regulatory powers. The Metropolitan Waste Control Commission is not a regulatory agency. However, the commission owns all the major municipal waste treatment systems and approximately 470 miles of the sewage collection system in the corridor and, through review, approval, and funding of local sewer management plans, serves in some ways as a de facto regulatory body.
Counties, Cities and Townships	There are 21 cities and 4 townships in the 5 Minnesota counties that encompass the MNRRA corridor. Local governments have broad planning and regulatory control over development in the corridor. Each of these political entities have regulatory power over land and water use through a variety of departments, agencies, commissions, etc. Minnesota state law gives these local governments primary authority over land use regulation. Local governments are often responsible for enforcement of standards written by state and county level agencies or the state legislature.

Source: Mississippi National River and Recreation Area, Comprehensive Management Plan, 1995.

Table 2.

Partners in Management of the Mississippi National River and Recreation Area

Federal Agencies	National Park Service United States Fish and Wildlife Service United States Army Corp of Engineers	United States Coast Guard Federal Highway Administration U.S. Geological Survey
State Agencies	Minnesota Department of Natural Resources Metropolitan Council Minnesota State Historic Preservation Office/Minnesota Historical Society Minnesota Pollution Control Agency Minnesota Department of Transportation	
Local Governments	25 Municipalities: City councils or township boards, and departments of planning, parks, and public works. Anoka Brooklyn Center Brooklyn Park Champlin Coon Rapids Cottage Grove Dayton Denmark Township Fridley Grey Cloud Island Township Hastings Inver Grove Heights Lilydale Maplewood Mendota Mendota Heights Minneapolis Newport Nininger Township Ramsey Ravenna Township Rosemount South St. Paul St. Paul St. Paul Park 5 Counties: County boards, departments of planning, parks and transportation, and county historical societies. Anoka County Dakota County Hennepin County Ramsey County Washington County	
Non-profits	Great River Greening Trust for Public Land Friends of the Mississippi River Minnesota Parks and Trails Council	Friends of St. Paul and Ramsey Parks Friends of the Minnesota Valley Audubon Society Wilderness Inquiry
Federally-Recognized Indian Tribes	Lower Sioux Indian Community Prairie Island Indian Community Shakopee Mdewakanton Sioux Community Upper Sioux Indian Community	
Others	Science Museum of Minnesota County Conservation Districts (5) University of Minnesota	Watershed Districts (6) Watershed Organizations (13)

4. Provide for continued economic activity and development.
5. Improve the public's understanding of the river and promote public stewardship of resources.

These goals reflect the National Park Service Organic Act mandates "to conserve the scenery and the natural and historic objects and the wildlife therein." Specific projects and programs to achieve goals are described in greater detail in project statements, which are prepared annually for the National Park Service's "Project Management Information System" (PMIS), as a part of the agency's strategic planning and budgeting process.

At the time of this writing, no established groups are directly associated with this unit of the NPS, although MISS is exploring starting a new foundation, which would be a Committee of the National Park Foundation. The Committee would generate funds in support of the missions of MISS. As described above, due to the partnership nature of this unit of the National Park System, MISS cooperates with numerous entities and agencies on an ongoing basis.

How the Resource Management Plan has been Developed

The National Park Service initiated work on the Resource Management Plan (RMP) at a scoping session in 1995, soon after approval of the area's Comprehensive Management Plan. The scoping session was attended by NPS staff from MISS and the Midwest Region office, along with personnel from the Minnesota Department of Natural Resources and the University of Minnesota Cooperative Park Studies Unit (CPSU). As a result of that session, it was determined that for the immediate future, the CMP would serve as the RMP, due to the unique nature and minimal NPS land ownership of the area. Since 1995, NPS has carried out numerous natural and cultural resource studies, projects and activities in partnership with a variety of agencies, non-profits, and citizens to identify resources and to restore or protect significant natural and cultural areas within the corridor.

NPS is proceeding with the development of MISS's Resource Management Plan at this time for several reasons. One: the first six years of implementing the CMP have involved the start-up of key natural resource programs and activities, such as support for local land use planning and partnership projects to demonstrate how MISS can be implemented cooperatively at the local level. Also in this time, a Historic Resources Study was completed, which provides further guidance for cultural resource management. Having passed the "start-up" stage of CMP implementation, MISS now can benefit from a more specific Resource Management Plan that will help focus NPS and partner efforts to achieve long-term consistency with CMP goals. Second, as the NPS Strategic Planning and Budgeting processes evolve, it is necessary to have a Resource Management Plan as a reference for project funding requests.

MISS long-term strategic goals that are relevant to the RMP are as follows:

1. **Ia0-1**
By September 30, 2005, the nationally significant resources of the Mississippi National River and Recreation Area are better protected because all 25 cities and townships along the river maintain compliance with the State Mississippi River Critical Area land use requirements and 15 of the 25 are in conformance with additional, voluntary NPS resource protection guidelines outlined in the MISS Comprehensive Management Plan (CMP) and /or are engaged in activities that accomplish MISS CMP Goals.
2. **Ia0-2**
By September 30, 2005, the natural and cultural resources of 9 NPS-owned islands (less than 50 acres) within the MISS are better protected and managed through cooperative projects and activities with one or more partners, as provided in the Comprehensive Management Plan.
3. **Ia4**
By September 30, 2005, the Mississippi National River and Recreation Area has unimpaired water quality.
4. **Ib0-1**
By September 30, 2005, the natural and cultural resources of the Mississippi National River and Recreation Area are better managed within their broader ecosystem and cultural context using 5 new comprehensive GIS data layers developed for the 72-mile corridor and/or development of site-specific natural or cultural resource data for 5 project areas.
5. **1b2F**
By September 30, 2005, the Mississippi National River and Recreation Area's Historic Resource Study (HRS) and Administrative History (AH) are completed to professional standards, current (approved since 1980), and entered in CRBIB.
6. **1b3**
By September 30, 2005, the Mississippi National River and Recreation Area has identified its vital signs for natural resource monitoring.

7. IIa1
By September 30, 2005, 95% of park visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of facilities, services, and appropriate recreational opportunities.
8. IIb1
By September 30, 2005, 86% of park visitors and the general public understand and appreciate the preservation of parks and their resources for this and future generations.
9. Ivb1
By September 30, 2005, increase by 44.7% the number of volunteer hours [from 3.8 million hours in 1997 to 5.5 million hours].

Operations formulation system (OFS) and Project Management Information System (PMIS) statements are being updated for FY03 and FY04 and will be attached when completed.

Natural Resources

The following summarizes the status of natural resource information available for the Mississippi National River and Recreation Area, according to categories that all National Parks are to address in their Resource Management Plans in the interest of consistency of scientific knowledge for all units of the National Park System.

Baseline Information:

Natural resource baseline information for the MISS is limited (see Table 3). It is difficult to get comprehensive data because of the multiple management entities within the river corridor, the mix of public and private ownership (see Table 4), and the variety of land uses. To date, the National Park Service has completed two surveys: (1) landcover mapping, carried out in cooperation with numerous partners and completed in 1999, and (2) a survey of native mussel fauna in the river, carried out in cooperation with the Minnesota Department of Natural Resources and completed in Fall 2001. MISS's funding for the mussel survey was from the nationwide NPS Inventory and Monitoring Initiative.

Additional information has been compiled for NPSPECIES (a nationwide database for tracking species present in all National Parks in the country); however, this information is not comprehensive and the lists likely do not represent what could be expected for this segment of the Mississippi River. More work needs to be done on these lists before they can be considered to meet required minimal standards. The status of other natural resource data is as follows:

Historical Database

No comprehensive historical natural resource information is available for or stored in the park, other than photographs taken in the early 1990s, shortly after this park unit was established. Historic Army Corps of Engineers aerial photos from 1927 and 1937 of the corridor below St. Anthony Falls have been digitized by MISS, but these photos do not cover the entire corridor.

The Natural Resources Bibliography (NRBIB) was completed for MISS several years ago, but needs to be updated. At this time, the entries are over 80% complete.

Species Information

Lists of biota: The MISS has relatively complete threatened and endangered species information, via updated information provided by the MN DNR. Information on vertebrate animals is spotty, as is the list of vascular plants. Exotics are a major problem within the corridor and need to be more thoroughly documented in terms of species and extent. In addition, invertebrate species are key to monitoring river health and need to be added for the MISS. Freshwater mussels are a prime example of invertebrates for which we have a good, recent inventory.

Table 3.

Summary of Natural Resource Baseline Information, Mississippi National River and Recreation Area

INVENTORY COMPONENTS	MEETS	DOES NOT MEET	EXCEEDS
Historical Database		X	
Species Information		X	
Species List		X	
Biological Surveys (Species Field Inventories)		X	
Species Distribution		X	
Vegetation Maps		X	
Cartographic Maps	X		
Soils Map		X	
Geology Map		X	
Water Resources Inventory	X		
Water Quality Data*	X		
Air Quality Stations*	X		
Air Quality Data*	X		
Precip./Meteorological Data*	X		
Invertebrates		X	

** Note: In accordance with the MISS CMP, Agencies other than the National Park Service have the lead on data-gathering.*

Table 4.

**Ownership in the
Mississippi National River and Recreation Area**

Parcel Data		
Category	Percent of Total	Acreage
Public Land	23.1	12,400
Private Land	41.8	22,480
Public Water	23.7	12,720
Rights-of-Way and Miscellaneous Categories	11.5	6,170
Total	100.1	53,770

Surveys: Two surveys have been done for the MISS: the landcover mapping completed in 1999 and a 2000-2001 freshwater mussel inventory. Federal and state threatened and endangered species are updated every two years with GIS information from the Minnesota Department of Natural Resources.

Species status and distribution: As mentioned above, federal and state threatened and endangered species are updated every two years. Species of special concern, principally exotics/invasives, need much better status and distribution information, because they are a major problem within the MISS corridor.

Digital Maps of Vegetation Associations

The vegetation overstory (landcover) map of MISS was completed in 1999. This GIS data layer, developed with the Minnesota Land Cover Classification System (MLCCS) has been quality controlled and will soon be up on the NPS Clearinghouse website. MLCCS meets federal standards. Table 5 provides a breakdown of land cover types, based on the MLCCS data. There are no other corridor-wide maps of vegetation associations within MISS, although maps are available for small areas within MISS.

Digital Cartographic Data

MISS has a solid base of digital cartographic data and a good GIS program. The GIS data is kept updated, using recent aerial photography and data layers generated by partner agencies.

Digital Soils Maps

MISS has STATSGO data, but this data is at a very small-scale ~~data~~ and a more detailed soils map is needed.

Digital Geology Maps

MISS has no digital data for bedrock and surficial resources; these maps are needed.

Water Resources Inventory

Location: This information is available in digital format, with the exception of information on groundwater.

Water quality use classification: This information is available in both volume and digital format. It was compiled by the NPS in Fort Collins.

Table 5.

Land Cover in the Mississippi National River and Recreation Area

Land Cover Type	Percent of Total	Acreage
Open Water (rivers, lakes, ponds, etc.)	27.7	14,912
Developed with 4-25% Impervious	21.8	11,740
Developed with 25-100% Impervious	8.1	4,377
Cultural Vegetation (agriculture, lawns, etc.)	7.8	4,168
"Disturbed" Vegetation (some non-native veg.)	10.0	5,401
Not "Disturbed" Vegetation (native vegetation)	24.5	13,172*
TOTAL	99.9	53,770

**DNR Significant Biodiversity: 10,130 Acres, Not DNR Significant: 3,042 Acres.*

Source: Minnesota Land Cover Classification System, 1999.

Water Chemistry

Some of this data for MISS was compiled by the NPS in Fort Collins; however, more detailed information is needed on certain water bodies within the MISS boundaries, such as Pig's Eye Lake (which has a Superfund site draining into it, is a backwater of the Mississippi, and is the location of a large heron rookery).

Ambient Air Quality Monitoring; Air Quality Values and Visibility Goals

Agencies other than the National Park Service have responsibility for air quality monitoring and the NPS does not maintain monitoring stations. Other agencies do monitor air at places within and near the corridor, and can provide data should the need arise. MISS does not maintain an independent list of air quality-related values and visibility goals specific to the Mississippi National River and Recreation Area. The CMP outlines a goal to encourage pollution prevention and compliance with existing air quality standards. MISS staff do review new permit applications where federal funding is involved, and coordinate with the Minnesota Pollution Control Agency, Environmental Protection Agency and other agencies and NPS offices as appropriate in such reviews.

Precipitation and Meteorological Data

Agencies other than the National Park Service collect this data and can provide it if necessary.

Long-Term Monitoring Needs

Long-term monitoring needs and opportunities are beginning to emerge as the National Park Service and partners learn more about natural resources within the MISS corridor. Initially, we need to monitor freshwater mussel populations to follow up on baseline inventory work done through the Inventory and Monitoring Program, and to track the success of Higgins Eye reintroductions by the Minnesota Department of Natural Resources, U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers. Monitoring of land cover changes over the long term may also be a good indicator of the ecological health of the river corridor.

As part of the National Park Service Inventory and Monitoring Initiative, the MISS will be hosting a Vital Signs Scoping Session in March, 2002, to identify long-term monitoring needs. MISS will submit funding requests to monitor those vital signs identified at the scoping workshop.

Natural Resources Management Program

The current natural resources management program for the park is based on the National Park Service role for the Mississippi National River and Recreation Area, as defined in the enabling legislation and 1995 Comprehensive Management Plan. During

the planning process for the CMP, there was widespread public agreement that the National Park Service should not overlay another level of regulation over management of the river corridor, but rather, should support the existing authorities of federal, state and local agencies. Virtually all management activities are undertaken in partnership with other agencies, communities and nonprofit partners. The NPS actively seeks partnerships to implement programs and projects that further the goals and visions contained in the CMP. We work closely with the 25 local communities and 5 counties within the corridor, as well as with the various state and federal agencies who administer programs affecting local natural resource management. The goals for this portion of the Resources Management Program are those included in the MISS CMP.

MISS's Natural Resource Program is managed out of the "Stewardship and Community Assistance Team". Cultural resources management, which is discussed in a separate section, is also based with the Stewardship Team. Staffing of this Team (or division, as is commonly the term used in many parks) is discussed in greater detail later in this section, along with the relationship to other MISS teams (divisions).

It is important to note that the MISS CMP emphasizes the need for "balanced" and "integrated" management that considers economic and recreational values, along with natural, cultural, scenic, and scientific values.

The foundation for natural resource management within the MISS is the State of Minnesota's Mississippi River Critical Area Program, along with other applicable federal, state, and local laws and regulatory requirements. Since the 1970s, the Mississippi River corridor through the Twin Cities Metropolitan Area has been designated a state "Critical Area", a designation which includes state land use regulations. The boundaries of the federally-designated MISS were established to correspond exactly with the state-designated Mississippi River Critical Area boundaries. The Minnesota Department of Natural Resource has approval authority over the Critical Area plans and ordinances of local governments, but the local governments implement and enforce the regulations. The Metropolitan Council, a regional planning agency, also has a role: it reviews local plans for conformance with regional policies and makes recommendations regarding Critical Area approval to the Minnesota Department of Natural Resources.

Land Use Management

The Critical Area program provides land use standards that address resource management concerns such as maintaining or improving water quality; and protecting and restoring habitat, bluffs, shoreline, and places of historic and cultural significance. The MISS CMP incorporates by reference the Critical Area standards and outlines additional, voluntary National Park Service policies with which each local jurisdiction is encouraged to comply in order to achieve greater protection for its stretch of river.

The local Critical Area Plans, which are specific to the Mississippi River corridor, relate to larger, metro-wide, state and regional ecosystem and land use management laws and initiatives, such as the state's Metropolitan Land Planning Act; regional park and

open space plans; DNR programs such as Floodplain Management, Shoreland Management, and Metro Greenways; the Metropolitan Council's Smart Growth and Pool 2 Initiatives, and the Army Corps of Engineers' Environmental Management Program.

Consistent with direction in its enabling legislation and CMP, the MISS has entered into cooperative agreements with the Department of Natural Resources and the Metropolitan Council to provide Critical Area planning support (funding and technical assistance) to more than 25 municipalities and 5 counties along the river. These local governments are adopting and enforcing land use policies and ordinances that meet state Critical Area requirements and incorporate additional, voluntary MISS resource protection and enhancement guidelines. Each community has its own river corridor planning schedule, and corridor-wide accomplishments reflect completion and local implementation of plans by an increasing number of communities over time.

MISS's investment in local natural resource management through the Critical Area Program has been substantial in the initial years of CMP implementation: more than \$1 million of the Area's operating funds have been directed to the Metropolitan Council, Department of Natural Resources and local governments to update the local Critical Area plans and reinvigorate the Critical Area Program through public education and active enforcement of river corridor land use regulations.

Cooperative Resource Management Projects

The enabling legislation authorizes a matching grants program to support implementation of the MISS CMP at the local level. The intent is for NPS to provide matching funds for projects that help communities realize their individual visions for the river corridor, if the local projects are consistent with goals of the MISS CMP. To date, there has been no Congressional appropriation for a local grants program. Thus, there is a lack of incentive to conform to the MISS CMP.

Despite the absence of an appropriation for implementation grants, MISS was able to initiate a modest grant program using operating funds in 1999, 2000 and 2001. Over this 3-year period NPS/MISS awarded a total \$450,000 for "Resource Protection and Enhancement Grants" to communities. The grants (which also included NPS staff support) have funded local projects such as removal of exotic species, restoration of native habitats, trail rehabilitation, interpretation of natural resources, and access to public open space. This NPS investment in turn leveraged matching contributions, resulting in projects with a value of \$900,000. However, MISS was not able to fund the program from its operating budget in 2002 and does not expect to be able to do so in the future without an appropriation for this purpose.

In addition to the grants, funded from the operating budget, MISS staff have supplemented natural resource dollars by successfully competing for natural resource funding from a variety of sources available through the National Park Service Midwest Region and Washington Office for natural resource projects—and by assisting local partners in preparing grant requests to foundations, state agencies and other sources. Thus, the Natural Resource Preservation Program (NRPP) funds, Challenge Cost Share

Funds, and other NPS funding sources are key to MISS's natural resource program. To date, these have helped fund on-the-ground projects such as exotics removal and native habitat restoration, and corridor-wide inventories, such as a land cover inventory and a survey of native mussels. In most cases, the natural resources funding is directed to local governments or nonprofit partners through cooperative agreements, to encourage and support partners work to implement MISS through existing authorities.

The grants and cooperative agreements are the cornerstone of MISS's resource management program—the primary vehicle through which we can accomplish projects on lands owned and managed by other agencies. At the time of this writing, MISS is administering 13 grants and cooperative agreements for natural resource projects.

Natural Resource Partnerships and Initiatives

With the variety of agencies and organizations involved in management of the Mississippi River through the greater Twin Cities metropolitan area, there are opportunities for NPS/MISS staff to both lead and participate in a variety of natural resource initiatives. A few of the partnerships active at the time of this writing are discussed below:

1. Metro Mississippi Trails and Open Space Partnership, a 35-member ad-hoc group, led by the NPS/MISS, that is cooperating to identify trail and open space opportunities, and establish an interconnected network of open space within and connecting to MISS.
2. Big River Partners, facilitated by Great River Greening, a nonprofit partner, to coordinate the restoration efforts of various agencies and nonprofit organizations involved in restoration projects along the river. This group cooperated to develop and jointly fund and carry out an inventory of land cover in the MISS corridor.
3. Metro Greenways, a DNR-led group working to protect open space corridors in the metropolitan area. This group is currently identifying natural resource protection opportunities, including those in the MISS corridor.
4. River Resources Forum, a consortium of federal and state agencies with Mississippi River management responsibilities. This group, facilitated by the Corps of Engineers, meets regularly to discuss and resolve issues related to commercial navigation, operation of the lock and dam system, and the Corp's Environmental Management Program.
5. Fish and Wildlife Workgroup, a subcommittee of the River Resources Forum which is convening local river management and

nonprofit partners to identify "desired futures" for habitat in Pools 1 and 2 of the Mississippi, both of which are within MISS.

Natural Resources Education and Interpretation

Because of NPS's limited direct management role in MISS, education on natural resource issues and interpretation of natural resources are key elements of the resource management program, for both natural and cultural resources. Most natural resource projects contain an interpretation and/or education element(s), such as use of volunteer labor for plantings or exotics removal, and development and installation of interpretive signage or brochures. In 1999, MISS initiated a "Stewardship Series", now in its fourth year, for the purpose of providing opportunities to learn about a variety of resources throughout the MISS corridor. Stewardship Series sessions are offered in a variety of locations throughout the 72-mile corridor, and include a variety of topics designed to appeal to a broad cross-section of the public and river corridor residents, whose use of their property affects the river corridor. Among the topics: landscaping with native plants, best management practices to control erosion and runoff, a range of history subjects, birds of the Mississippi, native mussels, and large-scale habitat restoration opportunities.

Island Management

The National Park Service has management jurisdictions of the 9 islands (less than 50 acres) it owns within the MISS. The CMP specifies that these islands are to be managed primarily for their natural resource values. Over the last few years, during start-up of CMP implementation, efforts have focused on inventorying the resources of the islands. A 1999 Island Study documented island vegetation and condition, and identified adjacent public landowners with potential to be management partners. As a result of this study, NPS/MISS has entered into a cooperative agreement with the Minnesota Department of Natural Resources-Fort Snelling State Park, to remove exotics on one island (108-01). In 2001, an overview of archeological potential of all islands within MISS was completed. MISS staff are currently working to establish a volunteer exotics management team that will permit more active management of the NPS islands. In the future, we will study recreational use of the NPS islands to provide additional information on management needs.

Compliance

The MISS enabling legislation mandates that the National Park Service will review any federally funded or permitted project in the area. This review is primarily to determine compliance with the voluntary policies of the MISS Comprehensive Management Plan and to support compliance with the state's Critical Area requirements and other applicable laws and regulations. If the project is initiated by the National Park Service or other federal agency and is within the MISS boundary, the reviews also address compliance with the National Environmental Policy Act, the Endangered Species Act, the National Historic Preservation Act, Integrated Pest Management policies, and other applicable laws and policies.

In addition, local partners sometimes request that NPS staff review development projects that don't involve federal funding, but which the local government or individual residents want to have evaluated for compliance with Critical Area standards and voluntary MISS CMP policies. NPS also reviews and comments on applications for hydropower licenses being handled by the Federal Energy Regulatory Commission (FERC). At the time of this writing, four FERC projects are active: Northern States Power Company (Xcel Energy), Crown Hydroelectric, Ford Motor Hydropower Facility at Lock and Dam 2, and a new proposal for a Lower St. Anthony Hydropower station. The FERC projects are generally handled as a "controlled review" within the Department of Interior, with either the National Park Service or the U.S. Fish and Wildlife Service in the lead role. Because facilities along this 72-mile stretch of the Mississippi are within a designated National Park unit, the agency reviews must address conformance with the state Critical Area requirements and voluntary MISS CMP policies, in addition to satisfying other NPS requirements, such as those of the National Environmental Policy Act, National Historic Preservation Act, and Threatened and Endangered Species Act. MISS staff submit comments regarding conformance with the MISS CMP to be incorporated with other comments from Department of Interior agencies for the controlled review.

In all compliance activities, staff coordinate the NPS/MISS comments with those of other National Park Service offices and programs, and other federal and state agencies, in order to communicate a consistent message and make efficient use of staff expertise. Generally, NPS staff carry out 40 – 60 project reviews per year, and state, local and other federal agencies with regulatory authority review many more. The nature of the projects and developments being reviewed varies greatly, and includes: new and reconstructed highways and river bridge crossings, light rail lines and bus transit corridor, energy generating facilities, transmission lines, petroleum refineries, barge navigation facilities, locks and dams, commercial developments and multi-unit or individual residential developments.

Natural Resource Program Staffing and MISS Organization

Currently the MISS Stewardship Team has 5 permanent staff and one term staff person. The five permanent staff consist of 3 outdoor recreation planners (the team leader, a recreation specialist, and a compliance/GIS specialist), a natural resource specialist, and a historian (who serves as the cultural resource specialist). The term position is geared towards outreach and education for cooperative projects.

R-MAP, which was done in 1994, concluded that MISS needs an additional 12 FTEs for natural resource management. Since that time, MISS has added 2 permanent FTEs to the Stewardship Team (a GS-7 outdoor recreation planner and a GS-12 historian), and, depending on annual budgets, is sometimes able to employ a term or temporary GS-7 outdoor recreation planner. Our most immediate needs for future staff are: a hydrologist or water resources specialist, a grants and cooperative agreements manager, and a restoration ecologist.

The remainder of the MISS organization includes; the Superintendent, Administration Team (the administrative manager, a personnel specialist and a procurement officer) and the Education Team (team manager, 1 education specialist, 4 permanent and 4 temporary/seasonal interpretive rangers and a computer specialist with two student intern assistants). There are no enforcement or maintenance staff at MISS.

The Stewardship Team has the lead on land use and cooperative natural resource management, which involves cooperative activities with 25 local governments, 5 counties and other federal and state agencies with land management responsibilities. Staff identify project opportunities, partners and funding—and respond to partner requests for involvement in projects. This team is responsible for managing NPS-owned islands, developing and managing natural resource project grants and cooperative agreements with partners, meeting compliance requirements, providing technical assistance, tracking project progress and use of funds, implementation of the CMP through local plans, and for preparing project reports and documentation. Stewardship staff manage the Area's Inventory and Monitoring activities, represent MISS on the Great Lakes parks Inventory and Monitoring program subcommittees and workshops, and maintain NPSPECIES and NRBIB lists. Team members facilitate NPS-initiated partnership initiatives and represent the NPS/MISS on numerous other partnership groups whose goals and activities are consistent with the MISS CMP. Staff develop and maintain GIS databases for the MISS, and increasingly, serve as the source for corridor-specific information. This team also develops natural resource project statements for the NPS Project Management Information System (PMIS), prepares reports on projects and monitors grants, cooperative agreement workplans and expenditure of funds by grantees and cooperators. In the last several years, staff have also served as the liason between NPS-MWRO grants staff and local recipients of Federal Land and Water Conservation Fund grants included in the MISS budget by Congress, but intended as a pass-through to the local government. At present, there are 2 LWCF pass-through grants for land acquisitions in MISS totaling over \$2 million.

The Stewardship and Education teams frequently cooperate in projects, particularly those involving volunteer labor, signage, educational programs and materials, and research. Natural resource projects are led by the Stewardship Team, with the Education Team providing support. The Education Team and Stewardship Team communicate regularly, at staff meetings and through project-specific meetings, to discuss opportunities to incorporate information about current stewardship projects and current research results into interpretive programs and materials. The interaction between these two divisions is strengthening with the upcoming opening of the Mississippi River National Center at the Science Museum of Minnesota. This will serve as MISS's primary visitor contact point, and the teams are cooperating to ensure that current stewardship messages are integrated into exhibits, and that natural resource information in exhibits is scientifically correct. The Education Team develops and maintains the MISS web site, which includes information on natural resource projects and MISS studies and research.

The Administration Team coordinates the MISS budget and Annual Performance Plan, Performance Reports, the 5-year Strategic Plan, and the MISS Project Management Information System (PMIS). In addition, this team handles contracts and procurements and, with Midwest Region staff, approves and monitors expenditure of funds from MISS grants and cooperative agreements.

Project Funding

As mentioned above, funding for natural resource projects and activities comes from available ONPS base funds, natural resource funding obtained competitively through the NPS Midwest Region and the Washington Office, partner matches, grants from foundations, and private contributions. At present, MISS's number-one priority for an operating increase is funding for the grants program. Anticipating that a grants program might not be funded in the immediate future, MISS also has submitted a 2-year funding request that would enable continuation of the grants program on a short-term basis without an operating increase.

It is significant that, in most cases, MISS funding for projects leverages additional funding. For example, as mentioned above, the Resource Protection and Enhancement grants awarded between 1999 and 2001 have brought an additional \$450,000 funding to corridor projects—the match to NPS's \$450,000 contribution. The natural resources funding received from the Midwest Region and Washington Office has been more than matched by partners such as the Minnesota Department of Natural Resources, Great River Greening, and local communities.

Natural Resource Management Needs

The most important natural resource problems identified to date are:

1. A lack of good baseline information on natural resources within the MISS boundaries, including species data, geological information on caves and unusual formations, and research information.
2. Large populations of exotic/invasive plant species throughout the corridor.
3. Preservation of key resources threatened by development (particularly floodplain, and bluffland) and adoption of best management practices in developing areas.

Though not a natural resource problem per se, the NPS's lack of jurisdiction over management in more than 99 percent of the corridor poses significant management challenges. Because the NPS owns very little land within the corridor, the strategy for accomplishing the goals of the CMP and this RMP differ from those of more traditional units of the NPS. The mixed ownership of land within the MISS (see Table 4) can limit project scope and connectivity, and frequently requires up-front time to identify shared

goals, define roles and establish trust among multiple management partners. In this partnership environment, planning and management of individual projects and activities can be more time-consuming than it would be with a single management entity, and it is challenging to have the funding components from all partners in place at the needed time.

Long-term strategies planned to address the primary resource problems involve working through partnerships with a variety of organizations and groups to accomplish goals as opportunities and funding become available. Primary goals include:

1. Support state and local land use regulatory programs for the river corridor.
2. Monitor mussel populations in the river.
3. Protect existing high-quality natural areas.
4. Control exotic species.
5. Restore degraded areas that are key connective greenway sections.
6. Monitor changes in landcover and development patterns over time.
7. Provide educational programs about the key resources in the corridor and what can be done to protect them, and how current regulations address resource protection.
8. Provide technical/financial support to local communities and nonprofit partners within the corridor who are engaged in activities that help implement the MSS CMP.

In the short-term, MISS is working with a variety of partners to:

1. Increase scientific knowledge of MISS resources.
2. Bring a corridor-wide focus to understanding and managing resources.
3. Identify projects and potential funding sources and assist local governments and other partners with MISS CMP implementation. In particular, the smaller local governments within MISS need NPS assistance because they do not have the expertise or staff resources of Minneapolis, St. Paul and some of the other, larger communities within the Area.

4. Encourage enforcement of existing federal and state laws and regulations affecting river corridor management and adoption of voluntary best management practices.
5. Expand partnerships to address the exotic plant problem.
6. Incorporate educational themes into our ongoing projects.

Unfunded Operational Needs:

The most urgent unfunded operational need is for the Matching Grant Program to serve as an incentive and support for implementation of the MISS CMP through local projects. At present, this is among MISS's priority requests for an Operating Fund increase. Consultation with the Midwest Region Grants Program staff, as well as other granting programs, indicates that it is not cost-effective to initiate a grants program for less than \$350,000/year. A much larger grants program is needed, considering the expense of land protection in urban and developing areas (such as acquisition or easement costs) and the number of management partners (25 municipalities, 5 counties, state agencies, and nonprofits).

Funding for the Grants Program is particularly critical to the success of MISS's resource management program at this time for the following reasons:

1. MISS's CMP identified a NPS Grants Program as the incentive for local governments and other land management agencies to implement the MISS CMP on lands under their jurisdiction.
2. For more than five years, MISS communities have been working to update their plans and ordinances to be consistent with the MISS CMP, and most are now finished with their plans.

The CMP specifies that the local implementation Matching Grants are to be available to communities with river corridor plans that meet state Critical Area standards and that incorporate additional, voluntary MISS CMP policies. NPS/MISS has made every effort to honor this intent by directing all available operating funds and supplemental NPS funds (such as NRPP, NRSS) to partners through grants and cooperative agreements. As mentioned previously, in FY00, 01 and 02, it was possible to piece together the funding for grants totaling \$100,000 to \$200,000 per year. However, these funds were available because of salary savings from unfilled positions and from success in competing for supplemental funding. This is not a reliable source upon which a grant program can be developed, and in FY02 MISS does not have the resources to continue the grants program.

The promise of NPS matching funds for local CMP implementation has been the "carrot on a stick" held out to local governments as incentive and encouragement to bring their river corridor plans into conformance with the MISS CMP and to be a partner in

implementing the MISS CMP. To a large extent, NPS's credibility in resource management is tied to its ability to follow through with this intent. And to a large extent, local communities' ability to finance local projects is dependent on NPS's ability to be a funding partner. The local governments face many demands for limited funding, but experience with the pilot grants we have been able to award to date has demonstrated that having partial funding in place is often a deciding factor in a city deciding to proceed with a project. In addition, communities who have a commitment of NPS funding find it easier to raise matching funds from other sources, such as state programs or private foundations, the business community and individual donors.

MISS's Operating Increase Request for the Grants Program includes 1 FTE for a grants program manager. As mentioned previously, the other two high-priority unfunded staff needs are a hydrologist or water resources specialist, and a restoration ecologist. Both of these positions are intended to increase NPS's capacity to offer greater expertise and technical assistance.

Cultural Resources

On about March 19, 1680, one hundred and twenty Dakota warriors beached their canoes at the mouth of Phalen Creek, just below downtown St. Paul. Daytons Bluff, with its large, ancient burial mounds, loomed above them to their right. To their left rose the hills and lowlands on which downtown St. Paul rests today. By 1900 Phalen creek would become the bed of a dense railyard. The Dakota had sallied far down the Mississippi River to attack the Miami Indians of Illinois. They returned not with Indian prisoners but three Frenchmen: Michael Accault, Antoine Auguelle and Father Louis Hennepin. The captives had been traveling up the Mississippi hoping to be the first Europeans to discover the river's source and the fabled Northwest Passage, the all-water route to the Far East. They were part of an expedition headed by the explorer Robert Cavelier, Sieur de la Salle. De la Salle, however, had been called back from his base camp near Peoria, Illinois, to Montreal, Canada. The Dakota did not give the Frenchmen time to contemplate their landing site, as they destroyed the explorers' canoes and hurried overland to their villages around Mille Lacs Lake.

The encounter between the Dakota and the French marked a new epoch in the history of the upper Mississippi and in the history of what is now the Twin Cities metropolitan area. For 12,000 years Native Americans had the river to themselves. From March 1680 forward, Europeans and then Americans would increasingly define human interaction and the river's physical and ecological character. The Dakota and their predecessors left many historically important archeological sites telling of their presence. Europeans and Americans would begin adding their own historic sites. Transformed though it is, the place below Daytons Bluff where Hennepin, Accault and Auguelle landed is the first of these and deeply historic.

The MISS corridor possesses historic sites that document human occupation from the retreat of the glaciers some 12,000 years ago to recent past. Every context noted in the Revision of the National Park Service's Thematic Framework is represented. The presence of Paleo-Indian projectile point finds, petroglyphs and pictographs, rockshelters, contact-era Native American village sites, a Native American fortified site, fur trade posts, Fort Snelling, flour and saw mills, early squatter settlements, brewery caves, bridges, locks and dams, port facilities, historic houses and commercial buildings, potential sacred sites, and historic landscapes demonstrate the variety and abundance of cultural resources in the MISS corridor. While we know of many sites, many more have not been located and/or evaluated. Many need interpretation. Table 6 summarizes cultural resource documentation status for the MISS.

Table 6.

Cultural Resource Documentation Checklist

TITLE	CURRENT AND APPROVED	INCOMPLETE; NEEDS REVISION OR UPDATING	NEEDED
SERVICEWIDE INVENTORIES, LISTS, CATALOGS AND REGISTERS			
Cultural Resources Management Bib. (CRBIB)		X	
Cultural Sites Inventory (CSI)		X	
List of Classified Structures (LSI)			N/A ¹
National Catalog of Museum Objects			N/A
Cultural Landscapes Inventory (CLI)			N/A ¹
National Register of Historic Places		X ²	
BASIC CULTURAL RESOURCES DOCUMENTS			
Archeological Overview and Assessment	X		
Archeological Identification Studies		X ³	
Archeological Evaluation Studies			X ³
Rapid Ethnogr. Assess. Procedures (REAP)			X
Cultural Affiliation Study			X
Ethnographic Landscape Study			? ⁴
Ethnographic Overview & Assessment			X
Ethnographic Oral Histories & Life Histories			? ⁴
Ethnographic Program			? ⁴
Historic Resource Study		X	
Historic Base Map		X ⁵	
Park Administrative History			X
Scope of Collection Statement			N/A

Cultural Resource Documentation Checklist, cont.

TITLE	CURRENT AND APPROVED	INCOMPLETE; NEEDS REVISION OR UPDATING	NEEDED
SPECIAL RESOURCE STUDIES & PLANS			
Archeological & Ethno. Collections Studies			N/A
Archeological Data Recovery Studies			X
Collection Management Plan			N/A
Collection Storage Plan			N/A
Collection Condition Survey			N/A
Cultural Landscape Report (LCR)			X
Ethnohistory			X
Exhibit Plan			X
Historic Furnishing Report			N/A
Historic Structure Report (HSR)			X
Inventory & Condition Assess. Report (ICAP)			X
Social Impact Study			X
Special History Study			X
Traditional Use Study			X
Other			

1. These are sites for which the NPS "has or plans to acquire any legal interest."

2. MISS has no known properties on its land that would qualify for the National Register. Hundreds of properties exist in the corridor, however. Many sites are already listed on the National Register or have been determined eligible. MISS needs to keep working on identifying, evaluating and listing sites that qualify for the National Register, even if not on MISS land.

3. We have completed a study of the islands of the MISS corridor, including the 35 acres of islands MISS holds in fee-title. The probability of archeological sites on these islands is small, but other islands hold a significant potential for significant sites. The Archeological Identification and Evaluation reports are listed as one report under the Cultural Resource Management Guideline for the RMP.

4. While these studies appear on the Checklist as baseline studies, they are not listed in under Baseline Research Reports in the Cultural Resource Management Guideline for the RMP.

5. The Archeological Overview and Assessment and the Historic Resources Study yielded site maps.

The cultural resources inventory conducted for the *Historic Resources Study* found 143 properties listed on the National Register of Historic Places (National Register or NRHP). However, a count of the number of sites recorded as listed in the inventory yields 191 and the total number of sites in the inventory is 337. These properties, listed individually or in multiple, are almost exclusively historic or architectural. Formal NRHP determinations of eligibility exist for nine properties, and the State Historic Preservation Office considers an additional 17 eligible. A further 111 properties, mostly archaeological, remain unevaluated for National Register potential. *An Archeological Overview and Assessment of the Mississippi National River and Recreation Area, Minneapolis and St. Paul, Minnesota*, by Fred Finney, listed 106 archeological sites recorded in the State Historic Preservation Office and State Archeologist files. Although the cultural resources inventory for the Historic Resources Study (HRS) documents 25 different property types and 25 different historic contexts, many precontact and contact era contexts are under-represented in comparison with post-contact historic contexts.¹ The *Archeological Overview and Assessment* listed nine potential Traditional Cultural Properties but none have been officially evaluated as such. The HRS found eight cultural landscapes. No ethnographic resources have been identified or evaluated. While a number of institutions within the MISS corridor hold artifact collections containing objects found in the corridor, MISS has no collections of its own and does not plan on holding a collection.

The population of known sites is skewed toward historic and architectural sites within and around the Minneapolis and St. Paul metropolitan areas. The immediate conclusion is that MISS should focus on archeological, ethnographic and cultural landscape surveys and evaluations. While these are important, other considerations must weigh in. These will become clear later.

The cultural resources of the MISS corridor could be summarized using three structures: time, reach or county. Each way would emphasize different needs. As the cultural resources inventory for the HRS looked at the cultural resources by reach and the Archeological Overview reviewed them by county, we try to provide a view from all three perspectives.

Role of National Park Service, State Historic Preservation Office, and Local Governments in Historic Preservation:

MISS is responsible for complying with Section 106 of the National Historic Preservation Act for all actions it initiates, funds, or for some other reason has the lead role in. MISS also reviews projects by other federal agencies to ensure cultural resources in the MISS corridor are adequately considered. MISS, however, works closely with the Minnesota State Historic Preservation Office (SHPO) and local communities.

¹Many of the sites that appear in these categories could fall within two or more contexts defined in the Revision of the National Park Service's Thematic Framework. We will need to determine how the historic contexts used in the HRS and the Archeological Assessment and Overview fit with the NPS Thematic Framework.

Under the Mississippi National River and Recreation Area Comprehensive Management Plan (CMP), the SHPO has a "central role in protecting the cultural resources in the MISS corridor." According to the CMP, "the state historic preservation office will:

1. Continue its central role in protecting cultural resources.
2. Promote the enactment of new local historic preservation ordinances.
3. Offer technical assistance to communities in establishing local preservation programs and reviewing critical area plans.
4. Work with local preservation commissions to integrate MNRRA policies and objectives into local preservation plans.
5. Help fund local historic preservation survey and planning efforts through the certified local government grants program.
6. Continue its section 106 of the National Historic Preservation Act review responsibilities.
7. Work with local units of government to integrate cultural resource concerns into community plans and ordinances.

In addition, the CMP "supports a strong emphasis on historic preservation efforts at the community level," and it says, "The state's 'certified local government' program will be emphasized." The CMP anticipates that "Cities will also play a key role in the designation and protection of historic properties, with an emphasis on local heritage preservation ordinances."

Archeological Resources of the MISS Corridor

Table 7 summarizes prehistoric and historic archeological resources in the MISS corridor. A short, narrative summary of these resources is in the following text, along with a list of the sites within each type, with brief notations on future study needs.

Table 7.

Summary of Site Types from Finney's *Archeological Overview and Assessment*

	Anoka	Hennepin	Ramsey	Dakota	Washington	Total
Historic Archeological	6	23	12	7	5	53
Prehistoric Archeological	1	3	2	8	3	17
Both P & H Archeological	1		1		1	3
Mound*	1	2	7	17	5	32

* This category includes sites that contain single or multiple mounds or simply a burial.

Anoka County

Anoka County has only nine known archeological sites, the least of any county. Six of these are historic archeological sites and another has a historic component. Only three sites have prehistoric components. All six historic archeological sites are associated with the fur trade and/or the early settlement of Anoka County. These sites could provide interpretive information about Native American life, the fur trade, American settlement, milling and general economic development. The Winnebago Enclosure site, one of the few Winnebago or Ho-Chunk sites in Minnesota and one of the few fortified sites, should receive special attention. Any archeological work or preservation efforts would involve developing a good relationship with the landowners on whose property the sites lie. The possible mill site could be part of a larger study of milling outside the St. Anthony Falls area. One site (21AN140) revealed evidence of a prehistoric camp and an early 19th century occupation. This site could be grouped with the other historic archeological sites for further work.

These Anoka County historic archeological sites are especially important, as no known historic archeological sites lie along the river in northern part of the corridor in northern Ramsey or northern Hennepin counties. All the known Hennepin County historical archeological sites lie near St. Anthony Falls or Ft. Snelling, and those in Ramsey County extend from near Ft. Snelling to just below downtown St. Paul. Why no historic archeological sites have been identified for northern Hennepin and Ramsey counties needs to be assessed.

Other than the multi-component site mentioned above, there are only two other known prehistoric archeological sites in Anoka County. One (21AN134) was identified based on an isolated projectile point found at the Coon Rapids Dam Regional Park. Follow-up testing found nothing else. The other is the Anoka Bridge Mound. The status of this mound is uncertain. The reasons for such a paucity of known prehistoric archeological sites along the Mississippi in Anoka County also should be assessed.

The lack of prehistoric archeological sites in the whole northern corridor raises questions about whether further research is needed to identify sites. In Hennepin County, only three prehistoric archeological sites lie in the northern corridor. Two are the Champlin Mounds (21HE85) and the Dayton Mounds (21HE90). In the northern part of Ramsey County, no known prehistoric archeological sites exist along the river. Clearly, the northern corridor needs a Phase I archeological survey.

Historic Archeological Sites: (6)

1. Winnebago Enclosure (21An44) - Very important Winnebago or Ho-Chunk site. Needs study, preservation, and interpretation as possible, given all in private ownership.

2. Belanger Rum River Post (21ANg) - 1840s post; possible posts as far back as 1805. Needs further research, testing and, if extant, evaluation.
3. Big Island Post (21ANh) (Kings Island) - Late 1840s post/homestead; needs further research, testing and, if extant, evaluation.
4. 21ANi - a mill ruin - Needs further research, testing and, if extant, evaluation.
5. Manomin Townsite (21ANr) - Needs further research, testing and, if extant, evaluation.
6. Itasca Townsite (21ANu) - Needs further research, testing and, if extant, evaluation.

Prehistoric Archeological Site: (1)

1. 21AN134 is the only known prehistoric archeological site in Anoka County. Needs more study.

Prehistoric and Historic Archeological Multi-Component site: (1)

1. 21AN140 revealed evidence of a prehistoric camp and an early 19th century occupation. Needs evaluation.

Mound: (1)

1. Anoka Bridge Mound (21ANg) - needs field check.

Hennepin County

Hennepin County possesses two major, nationally significant site areas: Fort Snelling and St. Anthony Falls. Nearly all the sites listed below are within the St. Anthony Falls Historic District. Many have been the subject of extensive study and interpretation, and they will be receiving even more in the near future. MISS is working closely with the Minnesota Historical Society, Hennepin County and Minneapolis to interpret these sites. The Bohemian Flats and the Heinrich Brewery sites offer important educational opportunities. The Bohemian Flats site was the home of immigrant squatters, who often could not afford to buy land above the floodplain. This site could be studied as part of a larger study of floodplain settlements in the MISS corridor. Likewise, the Heinrich Brewery should be examined as part of a broader study of brewing in the corridor.

Three of the five known prehistoric archeological sites in Hennepin County do not merit further work. One has been found ineligible and the other, the Washington Ave. site, is the site of a single artifact. No other artifacts were found at the Washington Ave. site. The University of Minnesota East Bank (21HEw) site is an unverified site and testing would be necessary to locate it and determine its condition. The only two mound groups, Champlin Mounds (21HE85) and the Dayton Mounds (21HE90), lie at the northern end of Hennepin County. One of two of the Champlin mounds may still be visible, but no trace of the Dayton mounds remains. The latter may have been destroyed by highway construction. The State Historic Preservation Office (SHPO) found the third prehistoric archeological site ineligible for listing on the National Register.

Historic Archeological Sites: (23)

1. Fort Snelling (21HE99)
2. Heinrich Brewery (21HE111)
3. Omaha Railroad Roundtable (21HE1120)
4. North Star Sawmill (21HE113)
5. West Side Power (21HE114)
6. Pacific Sawmill (21HE115)
7. Hennepin Avenue Bridge 21HE116)
8. Gateway Residential District (21HE117)
9. Old City Waterworks (21HE118)
10. First Street Canal Gates (21HE119)
11. King Midas/Pillsbury B Grain Elevator (21HE127)
12. North Star Ironworks (21HE195)
13. Bridgehead B (21HE196)
14. Pettit Flour Mill/Northwestern Consolidated Elevator B (21HE272)
15. Zenith Flour Mill/Northwestern Consolidated Mill E (21HE273)
16. Alaska Flour Mill/Pillsbury B Mill (21HE274)
17. Minneapolis Company Water Power Canal (21HE275)
18. Minneapolis Gas Light Company (21HE 276)
19. Minneapolis Blocks 97 and 107 (21HE279)
20. Palisade Mill (21HE283)
21. Bohemian Flats (21HE285). Research and interpretation?
Excavation for interpretation?
22. West Washington Ave Bridge Neighborhood (21HE286)
23. 19th Avenue/2½ Street (21HE287)

Prehistoric Archeological Sites: (3)

1. Cloquet Island Overlook - not eligible
2. University of Minnesota East Bank (21HEw) - unverified site;
potential habitation site.
3. Washington Avenue Bridge (21HEy) - single find spot.

Mound/Mound Groups/Burials: (2)

1. Champlin Mounds (21HE85) - 1 of 2 mounds may still be visible.
2. Dayton Mounds (21HE90) - no trace of mounds left.

Ramsey County

Ramsey County has a diverse assortment of very important historic archeological sites that deserve research, archeological testing and interpretation. These include Kaposia I, Harriet Island, Pike Island, Pig's Eye Village, Rum Town, Fountain Cave and the North Mississippi Brewery Caves. Most are associated with the earliest phases of settlement. The Dakota occupied Kaposia I until the Treaty of 1837, after which they moved across the river to establish Kaposia II. As with Kaposia II, this site has suffered extensive disturbance, but archeological testing should be conducted to determine if anything remains.

Of the other historic archeological sites, four merit a substantial effort. Pike Island (21RAe3) lies at the confluence of the Mississippi and Minnesota Rivers. The potential for Native American and early European and American sites is high. A systematic survey effort on Pike Island would likely document precontact, contact, and postcontact sites in numerous contexts, and would, because the island is already in a National Register District and a state park, benefit the public and the resources immeasurably. In addition to extensive records searches, significant fieldwork components would be necessary for these projects.

Some remnants may exist of Pig's Eye Village (21RAj) and Rum Town (21RAk), which are among the first Minnesota settlements. Historical research and archeological testing are needed at both sites. Early explorers discovered Fountain Cave (21RAr), which the Dakota, it appears, did not know existed. It has some historic significance, but access may not be possible given ownership and safety issues. It could be interpreted. Finally, the North Mississippi Brewery Caves (21RAs) have great potential for interpretation. They should be evaluated as part of a broader study of brewing in the MISS corridor.

One known, multi-component, prehistoric and historic archeological site rests in Ramsey County. Carver's Cave (21RA27) once held petroglyphs and was well-known by the Dakota by the 1760s. British explorer Jonathan Carver attended an intra-tribal gathering at the cave in 1766. Much of the cave has been destroyed. While portions remain, access would be unlikely given safety and access concerns. The cave should be evaluated for the National Register as a potential Traditional Cultural Property for the Dakota. This cave and other sites on and around the base of Daytons Bluff should be studied and interpreted together. As a result of a Memorandum of Agreement negotiated for a National Park Service Land and Water Conservation Fund (LWCF) grant (Phalen Creek LWCF project), the City of St. Paul has agreed to study Carver's Cave and other potential historic sites at the base of Daytons Bluff in Phalen Creek. The outcome of this work may determine what role the MISS should play in future study and interpretation.

Two known prehistoric archeological sites—other than mounds—exist in Ramsey County and both are important. Dayton's Bluff cave once held important petroglyphs and could ethnographically significant. The cave is not accessible but could be interpreted. Future work at this site will depend upon activities conducted under the MOA signed for the Phalen Creek LWCF project. The Fish Hatchery site lies below Dayton's Bluff/Mounds Park and, if portions are still intact, could yield important data. As noted above, the sites around this area should be part of an overall study and interpretive plan.

The seven mound/burial sites have varying needs but should be addressed by an overall program or policy to deal with burial sites in the corridor. Any work with mounds and other burials would require close coordination with the Native American tribes affiliated with the history of the MISS corridor.

Historic Archeological Sites: (12)

1. Chicago, Milwaukee, St. Paul, and Pacific Freight House (21RA14). Not eligible.
2. Kaposia (21RA17). High priority to determine if anything remains.
3. Diamond Joe Freight House/Depot (21RA20). Deeply buried.
4. Washington Street Residential District (21RA32). Destroyed.
5. St. Paul Glass Company Paint Warehouse (21RA35) Ineligible
6. Osborn Foundry/Old Brewery (21RA37). Buried. On land leased to Science Museum.
7. Harriet Island (21RA45). Thoroughly surveyed. Interpretive opportunities.
8. Pike Island (21RAe3). Highly important. Needs thorough archeological survey.
9. Pig's Eye Village (21RAj). Possible remnants of this very important site.
10. Rum Town (21RAk). Important early settlement site with archeological potential.
11. Fountain Cave (21RAr). Access may not be possible but interpretation is.
12. North Mississippi Brewery Caves (21RAs). Great potential for interpretation. Should be part of a broader study of brewing in the MISS corridor.

Prehistoric Archeological Sites: (2)

1. Dayton's Bluff Cave (21RA28). Access questionable. Important interpretive opportunity.
2. Fish Hatchery (21RAn). Needs testing. Any site in this area important.

Prehistoric and Historic, Multi-Component Site: (1)

1. Carver's Cave (21RA27) - Mostly destroyed and is now closed off. A potential traditional cultural property.

Mound/Mound Groups/Burials: (7)

1. Pig's Eye Lake Mounds (21RA1) - 2 mounds. In a rest area on Hwy 61.
2. Red Rock Mound (21RA3) - 1 mound; repeatedly plowed.
3. West St. Paul Mound Group (21RA4) - 16 mounds. Leveled, possibly destroyed.
4. Daytons Bluff Mound Group (21RA5) - Considerable disturbance. Recognized and protected by the City of St. Paul now.
5. Indian Mounds Park (21RA10) - Part of the Daytons Bluff Mound Group. Significant disturbance also.
6. Battle Creek Mandible (21RA44) - Single mandible. No affiliation.
7. Crooked Tree (21RAc) - Possible mound. Needs verification.

Dakota County

The known historic archeological sites in Dakota County present an interesting mix. Two are nationally significant and listed on the National Register (Cantonment New Hope and the Sibley House/American Fur Company site). Two are ghost towns that need research and field study. Two others relate to early pioneer settlement: one a mill and the other a farmstead. These sites also deserve some research and field study. Kaposia II, the village occupied by the Dakota chief Little Crow until the Treaty of Mendota in 1851, is an extremely significant site. (The Dakota remained until 1854, but American settlers increasingly took over the site). While much of this site may be destroyed, portions may still exist. A thorough archeological survey is needed.

The known archeological sites in Dakota County all merit further or initial testing. Most are very important sites from which important documentation has already been recovered. All should be reevaluated for their National Register eligibility, through Phase II testing.

A large number of mounds once existed in Dakota County. Most have been leveled. The major task is to identify whether subsurface burials or other features remain.

Historic Archeological Sites: (7)

1. Cantonment New Hope. National Register Listed.
2. Sibley House/American Fur Company. National Register Listed.
3. Samuelson Farm (21DK58). ca. 1870-1940 farmstead.

4. Nininger Mill (21DKh). Needs to be field checked.
5. Kaposia II. (21DKI). Needs survey to try find intact portions.
6. Merrimack Townsite (21DKt). Needs research and field exam.
Ghost town.
7. Wescott Townsite (21DKv). Needs research and field exam.
Ghost town.

Prehistoric Archeological Sites: (8)

1. Sorg (21DK1). - Revisit and reevaluate.
2. Lee Mill Cave (21KD2) - Revisit and reevaluate.
3. Hamm (21DK3) - Revisit and reevaluate.
4. Ranelius (21DK4) - Revisit and reevaluate.
5. Bremer Village (21DK6) - Revisit and reevaluate.
6. Williams Pipeline (21K34) - Phase II testing.
7. Bud Josephs (21DK43) - Phase II testing.
8. 21DKak - based on unconfirmed prehistoric artifact. Field check.

Mound/Mound Groups/Burials: (17)

1. Bremer Mound Group (21DK5) - Excavated; reburied remains; merits further evaluation.
2. Nininger Mounds (21DK7) - Reduced to ground level by plowing. Submound pits?
3. Kaposia Mounds (21DK9) - Largely destroyed and evaluated as ineligible.
4. Grand Avenue Mound Group (21DK10) - Largely destroyed by urban development.
5. South St. Paul Mound Group (21DK11) - Destroyed by urban development. Submound pits?
6. Buron Lane Mound (21DK12) - Destroyed by urban development. Submound pits?
7. Exchange Building Mound (21DK13) - Most likely destroyed by urban development.
8. Pig's Eye Mound (21DK14) - Needs study to determine whether destroyed.
9. Silk Mounds (21DK16) - Largely destroyed. One possible remnant.
10. Mendota Mound Group I (21DK17) - One of eight mounds still remains; submound pits may exist for some of the others.
11. Mendota Mound Group II (21DK18) - Probably destroyed; needs verification.
12. Bluff Mounds (21DK19) - Destroyed by urban development. Submound pits?
13. Lot 3 Mound Group (21DK20) - Probably destroyed; needs verification.

14. Freitag Mounds (21DK27) - Some survive. Potted. Needs evaluation.
15. Stewart Lane Linear Mound (21DKu) - Potted. Needs evaluation.
16. Andrus Gravel Pit Burials (21DKy) - Needs evaluation.
17. Etter Ridge Mound (21DKal) - Unverified report. Needs verification.

Washington County

Three of the five historic archeological sites in Washington County deserve early attention. Platted in 1856, the Grey Cloud Island Townsite (21WA48) is suffering from extensive shoreline erosion. The archeological assessment and overview recommends additional archival research, an analysis of existing artifact collections, and the production of a site report. A site visit and possible additional test should also be conducted, so this site can be evaluated for the National Register. The Point Douglas Townsite (21WA54) is important, but for the most part, may lie outside the MISS corridor. The Upper Grey Cloud Post (21WAp) dates to 1838-39. This site needs extensive research and a field survey to locate. The two remaining sites are not high priorities at this time. One is the site of a potential dug-out or sod house and the other consists of four quarry pits. Testing around the dug-out site did not produce much.

The Point Douglas Townsite (21WA54) has a prehistoric component that is National Register eligible. This site merits further research, testing, evaluation and interpretation, MISS would need to work out the issues related to the large portion outside the corridor.

Of the three prehistoric archeological sites that are not mounds, one, the Schilling Archeological District (21WA1), is National Register listed. The other two are the Larson Plant Floodplain (21WA23) site, believed to be a late prehistoric camp, and 21WAe site, which received a site number based on a single quartz projectile point. Both sites could use Phase I testing.

Most of the mounds in the five mound groups have been destroyed. However two mound groups may still have an important number remaining. One site that had burial components and early historic elements has been destroyed by gravel mining.

As with the northern corridor, more testing is needed to locate prehistoric sites in the southern corridor.

Historic Archeological Sites: (5)

1. Grey Cloud Island Townsite (21WA48) - Needs a National Register evaluation.
2. Rick Lewis (21WA55) - 3 possible dug-out or sod house foundations. Further research done but not much turned up. Not a high priority.

3. River Oaks (21WA56) - 4 limestone quarry pits. Interpretive potential.
4. Douglas Post (21WAo) - Early 19th century fur post. Exact location not known. More likely out of corridor and within St. Croix National Scenic Riverway.
5. Upper Grey Cloud Post (21WAp) - ca. 1838-39. Needs extensive research and a field survey to locate.

Prehistoric Archeological Sites: (3)

1. Schilling Archeological District (21WA1) - National Register Listed District.
2. Larson Plant Floodplain (21WA23) - Late prehistoric camp. Needs to be relocated and evaluated.
3. 21WAe - Lone projectile point find spot. Needs further testing and evaluation.

Prehistoric and Historic, Multi-Component Sites: (1)

1. Point Douglas Townsite (21WA54) - Partially in the corridor. Historic and prehistoric archeological components. Prehistoric component is National Register eligible.

Mound/Mound Groups/Burials: (5)

1. Michaud-Koukal Mound Group (21WA2) - 5 mounds remain in Koukal group and Michaud may have held 19; not clear how many left.
2. 21WA6 - 6 mounds; all destroyed.
3. 21WA7 - 9 mounds; most destroyed or disturbed.
4. Curry Mound Group (21WA8) - Once 24 mounds; could not be relocated; significant farming over them and some residential development.
5. Grey Cloud Mound Group (21WA9) - At one time nearly 60 mounds; 40 still evident in 1971 survey.

Mound/Historic Multi-Component Site: (1)

1. Robinsons Rocks (21WA88) - destroyed.

Historic Standing Structures and Architectural Sites of the MISS Corridor

Historical research and survey is much better represented throughout the project area than archeological research and survey. The most important sources on the historic and architectural cultural resources of the corridor are the large-scale county inventory projects of the 1970s and 1980s. Their extent and thoroughness are consistently of high

quality. For each of these surveys, the preparers examined previous literature searches, archives, maps, local and regional histories, newspapers, and census data. They prepared technical reports that are available at the SHPO.

A simple tabulation of the number of sites listed, determined eligible, considered eligible or unevaluated is presented in Table 8. Given the level of documentation available in the studies we have, we can say little about the specific historic structures presented in this inventory. A detailed summary would require more information about each site, ranging from its origin to its current condition and use. For the most part, the background documentation needed should be at the SHPO, but information about current use and conditions will probably require a survey.

Table 8

Summary of Standing Structures from the HRS Cultural Resources Inventory

	Anoka	Hennepin	Ramsey	Dakota	Washington	Total
Listed	5	108	43	35		191
Determined Eligible			9		1	10
Considered Eligible		6	2	5		13
Unevaluated		2		17	5	24
Total	5	116	54	57	6	238

Notes: One-hundred and two of the listed sites for Hennepin County fall within one of six historic districts. The districts are: Fort Snelling, St. Anthony Falls, Minneapolis Warehouse, University of Minnesota Old Campus, Minnehaha, and Minnesota Soldier's Home. Thirty-four of the listed sites in Ramsey County are in one of three historic districts: Irvine Park, the St. Paul Seminary and the West Summit Avenue Residential. The latter two overlap. Twenty-six of the listed sites in Dakota County are in the East Second Street Commercial District or the West Second Street Residential District in Hastings.

Table 8 shows that the great majority of standing structures or architectural historic sites occur in the heart of the Twin Cities metropolitan area. Washington County, at the southern end, and Anoka County, at the northern end, have only a total of 11 sites together, and no standing structure in the MISS corridor in Washington County has been listed on the National Register. Only two sites made the inventory for northern Hennepin County, and neither has been evaluated. The exception to this geographic bias is Hastings, which lies at the southern end of the corridor, in Dakota County. It has 26 listed sites in two historic districts. The bias in the inventory is largely due to the pace, timing, and level of urban growth and economic development in the communities of the MISS corridor. The northern portion grew much slower than the central or southern sections of the corridor. At the southern end, Hastings was the only large city. Washington County had no large urban areas on the Mississippi until recent decades.

Of the 191 structures presented in the list of historic sites, 168 lie within historic districts. While the number of sites within historic districts is not odd, the lack of sites outside the historic districts needs some explanation. It may be, as discussed above, that certain early residential, industrial and commercial centers grew faster and more densely. However, the NPS and its partners need to consider the possibility that many historic standing structures outside these early centers may have been overlooked in the county by county, standing structure surveys.

This summary suggests the need to reexamine the northern and southern portions of the corridor for historic standing structures. Unlike the central corridor, we are more likely to find individual structures as opposed to entire historic districts, although the potential of overlooked historic districts should be evaluated as well.

Tables 9 and 10 offer more insight on the variety, nature and biases of the existing inventory of known sites. They represent the entire inventory of cultural resources presented in the cultural resources inventory for the HRS. **Table 9** lists the number of each type of site to better show relative representation. The table indicates that there are a wide variety of cultural resources represented in the inventory but that historic sites dominate.

Table 9.

Site Type Tallies	
Site Type	Count
Building	139
<i>Mound</i>	34
<i>Native American Habitation</i>	19
Bridge	18
Railroad	18
Cemetery	17
Industrial Site	14
Mill	11
<i>Lithic Scatter</i>	7
Ghost Town	8
Historic Landscape	8
Fur Trade Post	7
Historic Refuse	6
Monuments	5
Cave	4
Water	3
<i>Petroglyph/Pictograph</i>	2
Navigation Facility	2
Electrical	2
Unknown	2
Farmstead	1
Quarry	1
Dugouts	1
Kiln	1

Note: The clearly prehistoric sites are in italics.

The cultural context types given in Table 10 were taken from the SHPO, which requires that sites be placed into these categories. Many of the sites that appear in these categories could fall within two or more contexts defined in the *Revision of the National Park Service's Thematic Framework*. The background of each known site needs to be reviewed and each site categorized within the NPS framework.

A wide variety of historical contexts is apparent from the results presented in the Cultural Context Table. As in Table 9, the contexts are listed in order of greatest number and the prehistoric contexts are in italics. As discussed earlier, the great majority of sites are historic sites associated with the economic and residential development of the Twin Cities metropolitan area.

Table 10.

Cultural Context Tallies

Context	Count
Urban	120
Early Agriculture and River Settlement	53
Railroad and Agricultural Development	40
<i>Woodland</i>	32
<i>Precontact</i>	9
<i>Havana Related</i>	8
Eastern Dakota	8
<i>Late Woodland</i>	6
Initial U.S.	5
Unknown	4
<i>Archaic</i>	3
<i>Early Woodland</i>	3
Contact	3
Tourism and Recreation	2
Indian Communities and Reservations	2
Saint Croix Triangle Lumbering	2
<i>Blue Earth</i>	2
<i>Oneota</i>	2
Southeastern Minnesota Late Woodland	2
Middle Woodland	2
<i>Paleoindian</i>	1
Clovis	1
Brainerd	1
Winnebago	1

Previous Research and General Discussion of Cultural Resources

The distribution and degree of archaeological research and survey in the MISS corridor is uneven, despite a long history of archaeological interest in the area. While certain archaeological site types seem to have been well-studied, this is more a result of the visibility of those resources, the presence of people, and accidental or incidental discovery, rather than a result of systematic or intellectually-driven inquiry. In his *Archeological Overview and Assessment*, Finney thoroughly reviews the historiography of archeological work in the corridor. The Cultural Resources Inventory for this Historic Resources Study (HRS) also contains a detailed discussion of the methodological issues involved in pulling together all the known sites for the MISS corridor.

On a coarse level, there are two basic types of literature pertinent here: academic work and contract and compliance work. Of the two, contract and compliance work forms the bulk of the more recent literature relevant to the MISS corridor, while academic work tends to be more dated and less extensive. For standing structures, the county by county inventories and assessments represent an exception to this norm.

Archaeological or historic/architectural sites or structures found not eligible for the National Register or that had not been previously evaluated were included in the HRS inventory. A number of archaeological sites included the HRS inventory have been previously stated to be ineligible, but SHPO policy is that archaeological sites that were found ineligible in informal investigations or before the establishment of guiding criteria, are not actually determined ineligible until a formal determination is made in a complete Phase II evaluation.

Examples of this situation are plentiful, if complex, and are directly relevant to MISS. Virtually all of the mound groups in Ramsey and Dakota Counties have been subjected to some sort of disturbance and are frequently thought of as burial places. Because burial places are protected by other laws, they are generally not considered to be eligible for the National Register, although this assumption is erroneous. Numerous past investigators have recorded mounds as having been determined ineligible for National Register protection. Yet clearly this is not the case. The vast majority of archaeological sites in Minnesota and in the MISS corridor have not received formal evaluations. Indeed, for cultural resource management purposes, sites where human remains might be expected are never fully dismissed even if previously determined ineligible. Sites that have had formal determinations of ineligibility were not included in the HRS inventory. Sites whose ineligibility status was unsupported were included as unevaluated.

A similar situation pertains to archaeological sites that have been suggested to be eligible. The opinion of an investigator of the eligibility of a site must be affirmed by SHPO staff before any recommended status will be assigned. Further, an effort to confirm the status of a site suggested to be eligible is dependent on a specific reason for requesting such a determination from the SHPO staff. Mere mention in a report that a site is likely to be eligible does not constitute grounds for assuming a SHPO Considered Eligible Find (CEF) or for assuming that the site is probably or potentially eligible. As

an example, Robert Vogel provides an extensive review of Native American Earthworks on Grey Cloud Island in Washington County, Minnesota, and concludes that the Michaud-Koukal mound group and the Grey Cloud mound group are eligible for the National Register under both Criteria A and D. However, there has been no significant threat to these sites and hence no pressing reason to formally evaluate and recommend a status. Such sites, therefore, qualified as unevaluated resources for the purposes of the inventory.

In contrast to archaeological sites, there are very few truly unevaluated historic/architectural properties in the corridor. Between the late 1970s and mid 1980s, a state-wide program, coordinated at the county level among the Minnesota Historical Society, county historical societies, and interested public, resulted in a virtually complete inventory of all of the historic and architectural properties in the state. One of the goals of the state's massive historic inventory project was to identify all historic and architectural properties that were eligible or potentially eligible for listing on the National Register. County-wide surveys yielded recommendations made to the SHPO, and the SHPO followed through with either nominations for the historic and architectural properties or recommendations for future nominations. Properties not nominated or recommended for nomination are thus in one sense both evaluated and unevaluated, but are treated by the SHPO as likely to be ineligible, since there has already been one assessment of their significance. We cannot assume, however, that all historic sites have been identified. In the 20 years or so since these studies, many more structures have passed over the 50-year threshold for National Register eligibility.

Just as with archaeological sites, the SHPO reserves comment on any investigator's eligibility opinion as expressed in reports, unless there is a formal Phase II evaluation or a specific and compelling reason to make a determination. Hence when E. Goetze, et al., recommended that several structures within the MISS corridor are potentially eligible for the National Register, the lack of a compelling reason to issue a judgment and the previously evaluated nature of the structures, combined to outweigh the investigation team's opinion. As before, these structures are, therefore, assumed to lack eligibility potential and were not inventoried. These types of sites should be identified and reviewed, however.

In very few cases, properties were left unevaluated in the HRS due to insufficient knowledge at the time of initial investigation; these sites were registered as unevaluated. Although there may be more of these than discovered in the HRS, a significant effort was directed toward the examination of each county's roster of properties. The roster numbers in the thousands for each county, and a thorough search of this type represents a possible future goal of a major research effort. The vast majority of historic/architectural locations in the MISS corridor have been at least implicitly determined to be ineligible for the National Register, and were not included in the HRS inventory. This group of sites may require reevaluation at some point. At a minimum, they should come up for review under any federal projects but many could be lost without such review.

Another issue regarding inclusion was encountered in situations where the MISS corridor encompasses either part or all of a National Register Historic District. There are several cases of both situations, and this led to a number of associated problems involving the inventorying of properties and the tallying of represented types and contexts for interpretive reasons. Examples of these problems include:

1. instances where an accurate inventory of properties included in a Historic District does not exist (the St. Anthony Falls Historic District);
2. instances where the borders of a district have changed several times and their precise relationship to neighboring areas is unclear (the St. Anthony Falls Historic District and the Minneapolis Warehouse Historic District);
3. instances of clearly intersecting districts and cross-listed properties (the St. Anthony Falls Historic District intersecting the Minneapolis Warehouse Historic District, and the St. Paul Seminary Historic District intersecting the West Summit Avenue Historic District);
4. instances of contributing and noncontributing properties as described on the original nomination forms (all of the Historic Districts involved here);
5. instances where only part of a district falls within the project area (the Fort Snelling Historic District, the Irvine Park Historic District, the West 2nd Street Residential District, and the East 2nd Street Commercial District).

In order to resolve these problems, the delineation of the MISS corridor was interpreted to be an exact border, within which only the relevant properties and outside of which no properties were to be entered into the resulting database. Using this approach, the resolutions to the above stated problems can be elucidated:

1. contained or intersected districts are always included in the inventory, although depending on the extent of inclusion, their full constituents may not be completely specified (in at least one case - St. Anthony Falls - the complete constituents have not been systematically established, and are not available for full inventory);
2. only elements listed as contributing to the respective districts have been recorded in this inventory;
3. where an entire district falls within the boundary only the district itself is counted in the tallying, and its profile is an amalgam of the

characteristics of its components, which are not counted in the tally;

4. where only part of a district is included, the district itself is not tallied, but the respective included properties are;
5. individual properties within a district that are either covered by independent nominations or which have been entered into the state database are listed singly and their district membership noted in parentheses;
6. where a district contains properties on two sides of a street that is bisected by the border, only the properties inside of the boundary are inventoried;
7. properties that are cross-listed are only counted once in tallies, but are listed under each episode of inclusion in a relevant district if the constituents of that district are detailed.

It may be noted that the St. Anthony Falls Historic District is associated with a number of different types of inventory problems. These problems arise because the district was nominated and listed before detailed and precise definitions and boundaries were required for historic properties. Despite several National Register Continuation Sheet projects aimed at providing a more sound basis and integrated analysis of the St. Anthony Falls Historic District, a single comprehensive project directed at a full exposition and documentation of the entire district would serve the SHPO and the District well.

Area Surveyed

NPS owns less than 50 acres, on 9 islands, within the MISS corridor. In a report entitled "A Cultural History of the Islands of the Mississippi National River and Recreation Area, Minnesota," the Institute for Minnesota Archeology Consulting, Inc., conducted a literature and records search focused on all the corridor's islands, including especially MISS's 35 acres.

The study concluded that only Island 102.01 had much potential for archeological remains. Nevertheless, archeological testing may be useful at a number of islands to verify the results of the literature search and Island 102.01 should be tested. Overall, other than Grey Cloud and Harriet Islands, little or no archeological testing has been conducted on the corridor's islands.

Archeological Sites Management Information System (AMIS)

No data has been entered into the Archeological Sites Management Information System (AMIS) database. In the *Archeological Assessment and Overview*, Finney (p. 97)

says that "Known sites and survey coverage are marked on a set of USGS quadrangles and entered in a GIS database." These maps are at the Midwest Archeological Center. The cultural resources inventory for the HRS also produced a set of maps showing all the known sites in the MISS corridor. More recently, the Island Study mapped all the known sites on the corridor's islands.

Estimate of other historic resources projected to be in the park

Given the density of settlement along the MISS corridor from prehistoric times to the present, the potential for sites representing every era and many different types exist. Where agriculture and urban expansion have not altered the land surface, the potential for prehistoric archeological resources is high. Given that many large islands in the corridor, especially on the northern end, have not been extensively disturbed, the potential for prehistoric and historic archeological sites on these islands should be good. In areas along the riverfront where filling rather than excavation has occurred, prehistoric and historic sites could be moderately to deeply buried. Most historic buildings dating to the 19th and early 20th centuries have probably been identified, but no systematic assessment of buildings passing the 50-year threshold for the National Register has been conducted for over 20 years.

Ethnographic Resources

No known natural and cultural resources sites of long-standing, non-recreational use exist in the corridor. Sites that once held sacred or cultural significance to the Dakota and other tribes fall within the corridor but have not been used for some time. Such sites include Red Rock, Carvers Cave, Minnehaha Falls, the confluence of the Mississippi and Minnesota rivers and St. Anthony Falls. Where historically sacred sites exist, the Dakota are most often affiliated. The Mendota Mdewakanton (an unrecognized Dakota group) and some individuals have identified Coldwater Spring on the former Bureau of Mines property, near Fort Snelling, as a sacred site. The spring is on the site of Camp Coldwater, the base from which soldiers built the fort. The Mendota and some individuals are conducting ceremonies and tours at the spring. The Department of Interior, which now oversees the former Bureau of Mines property, is providing limited access but has been authorized by Congress to sell the property.

Cultural Contexts/Themes

As discussed above, the HRS used the SHPO's historic contexts definitions. These contexts overlap and fit under the *Revision of the National Park Service's Thematic Framework*, the sites in the corridor need reevaluation to determine how they fall under the NPS framework.

Narrative on Objects

MISS has no objects. The October 19, 2001, Collections Management Report from the Midwest Archeological Center, which curates MISS's museum property, shows that the entire collection consists of 1,000 archived items. The Minnesota Historical Society and local historical societies have collections relating to the Mississippi River.

Threats to Sites

MISS's cultural resources face threats from a number of sources, most of human origin. Agriculture and urban expansion have been the greatest threats. In recent decades especially, urban expansion has become the primary threat. The Twin Cities metropolitan area is experiencing one of the fastest rates of urban sprawl in the country, and as the Mississippi riverfront has become prime property for development and redevelopment. Undeveloped agricultural areas in the northern and southern portions of the MISS corridor are receiving some of the heaviest development pressure in the 7-county metropolitan area, and in some cases publicly-owned park land has been sold and developed for private residential uses. In other places, development projects are being proposed for parcels targeted in local planning documents for public ownership and future park and open space.

Due to navigation and hydropower developments, the Mississippi through most of the MISS corridor, has been segmented into a series of reservoirs. The reservoirs do not raise the river above normal high water stages, but they do not allow the river to fall to its low water stages. As a result, any low-lying sites have been permanently inundated. Some sites at the margin of reservoir fluctuation are experiencing erosion from wave action or undercutting by the current. A shoreline survey of the entire corridor could help identify such sites.

Short- and Long-Term Goals

Unlike a traditional park unit, studies in MISS have been conducted, are being conducted and will be conducted that have not, are not and will not be initiated or controlled by the NPS. One major goal is to develop stronger relationships with the communities and agencies that conduct (directly or indirectly) cultural resources studies in order to share information and develop a comprehensive program for managing the corridor's cultural resources.

The major difference, the major opportunity, MISS can bring to cultural resources in the corridor is its mandate and desire to take a systematic, comprehensive approach to research and management. The *HRS* and the *Archeological Overview and Assessment* show that most of the cultural resources management work in the corridor has been piecemeal. No overarching strategy guides what work is done where and toward what end. The RMP, as well as individual cultural studies and projects, could help identify corridor-wide needs and strategies to address those needs.

This document provides an overview of priority work needed for the MISS corridor's cultural resources, but in this partnership area, many factors outside the purview of the NPS influence the ability to achieve goals and the timing of individual projects. One of the greatest challenges to undertaking archeological, ethnographic and historic surveys and to conducting preservation and interpretation is the amount of land in private ownership. MISS will have to patiently develop partnerships with the corridor's many public and private land owners. All MISS's recommendations must consider this issue.

Northern Corridor (above downtown Minneapolis; Anoka County and the northern portions of Hennepin and Ramsey Counties).

Opportunities and needs exist in the northern part of the corridor. Phase II work at the known historic archeological sites represents an opportunity to more clearly identify and evaluate a group of cultural resources that hold stories essential to the earliest settlements in the metro area. In general, historic archeological sites are poorly represented in the cultural resources inventories of the MISS corridor. These sites have great potential to provide knowledge about post contact Native American history, the fur trade, early pioneer settlements and early economic activities such as milling and brewing. These sites could be part of thematic study projects for the whole corridor. Phase I surveys along the northern river should be conducted to identify archeological and historic sites that have been overlooked. Both types of sites are poorly represented in the northern corridor.

Middle Corridor (the urban core, downtown Minneapolis to downtown St. Paul).

The well-known historic sites in this reach (St. Anthony, Fort Snelling and other historic districts) have received considerable research and interpretation compared to sites in other areas. MISS should continue to work with the local interests that are interpreting these resources.

The principal needs concern the less well-known sites, such as early settlements, floodplain communities, saw and flour milling sites outside of St. Anthony, and breweries. Most of these sites are known, but need Phase II evaluations and initial or more substantive interpretation.

Southern Corridor (below downtown St. Paul).

Key prehistoric archeological sites need Phase II evaluations. Kaposia I and II and other post-contact Native American sites in this part of the corridor need surveys to determine what might remain. Early historic settlements such as the Grey Cloud Townsite, Upper Grey Cloud Post, and the Point Douglas Townsite could be studied together and as part of a broader examination of early settlements in the MISS corridor. Finally, a Phase I archeological survey of the southern MISS corridor is needed. Like the northern corridor, there are few known archeological sites in this section of the river. The possibility of intact sites is much greater outside the urban core, but development pressure is threatening any potential sites.

Islands (nine NPS-owned islands plus the others).

Work on the corridor's islands is important because the only land MISS owns is on nine islands. Many of the corridor's islands have not experienced the same level of disturbance as found on the corridor's shorelines. Historic records indicate regular use of the islands by the Dakota, fur traders and, more recently, by recreationists. In a few cases, the U.S. Army Corps of Engineers has used islands dredged material storage, and the navigation industry has used some for barge fleeting. Phase I, and where justified, Phase II surveys of MISS's islands that have the potential for archeological remains should be conducted. Phase I and, where justified, Phase II surveys should be conducted on all the islands that have the potential for archeological remains, other than the ones that have had significant work already.

Historic Standing Structures

Historic buildings and other structures are the best represented in the corridor's cultural resources inventory. This does not mean that we can put work on such sites out of mind. We need to assess what types of structures and what eras are not well represented and develop a program to identify, evaluate, preserve and interpret these. Also, we need look at geographic areas and site types that might have been overlooked by earlier studies.

Sites threatened by development

Important sites that are in immediate danger of being compromised or lost should receive immediate attention. One such site is the St. Paul Municipal Elevator and Sackhouse, which is being considered for demolition. It is the last structure on the St. Paul riverfront directly tied to St. Paul's port city history. MISS is working with the City of St. Paul and others to try save this site. Many other sites exist now and will come up as urban sprawl and redevelopment continues.

Sites that represent important interpretive and historic preservation opportunities

As the historic sites inventory demonstrates, many sites in the MISS corridor offer interpretive and historic preservation opportunities. Working with cities and neighborhood associations, MISS could build important relationships and protect and interpret nationally significant cultural resources that have been overlooked or simply have not had the funding or initiative needed to bring their stories to the public.

Ethnographic Study

MISS needs to complete its basic Ethnographic Inventory. It is essential to identify these kinds of sites, so that MISS can begin working with its partners to protect, preserve and interpret these types of sites.

Eight Historic Landscapes

The eight historic landscapes that exist are well-known sites. No systematic study of the corridor to consider what other historic landscapes exist has not been conducted. A systematic study is needed, so that MISS can begin a program to protect, preserve and interpret these sites.