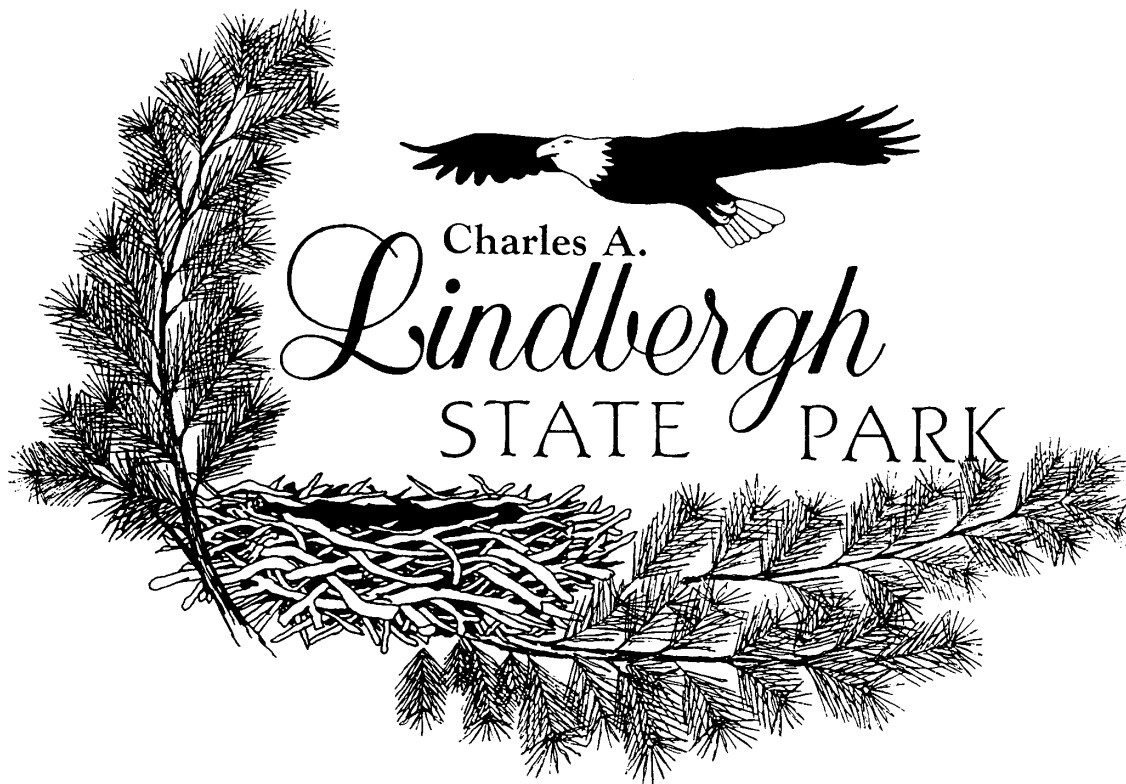


Charles A. Lindbergh State Park

Management Plan



June 1998



Acknowledgments

This management plan was prepared by the Minnesota Department of Natural Resources, Division of Parks and Recreation, in cooperation with the local community and various park stakeholders.

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A special thanks to the many local officials, civic leaders, school district staff, concerned citizens, and park users that provided valuable input throughout the planning process.

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Abbreviations Used in This Plan

CAC	Citizen Advisory Committee
CCC	Civilian Conservation Corps
CLF	City of Little Falls
DNR	Department of Natural Resources
EBM	Ecosystem Based Management
ECS	Ecological Classification System
GIS	Geographic Information System
GLO	General Land Office
IMA	Institute for Minnesota Archaeology
IRM	Integrated Resource Management
LF	Lindbergh Foundation
LFCVB	Little Falls Convention and Visitor’s Bureau
LEHP	Little Elk Heritage Preserve
LFHPC	Little Falls Heritage Preservation Commission
LFPB	Little Falls Park Board
MCC	Minnesota Conservation Corps
MCHS	Morrison County Historical Society
MHS	Minnesota Historical Society
NRHP	National Register of Historic Places
PRIM	Public Recreation Information Maps
SCSU	Saint Cloud State University
SCORP	Statewide Comprehensive Outdoor Recreation Planning
STS	Sentence to Service
WPA	Works Progress Administration

I. INTRODUCTION

Executive Summary

The following comprehensive management plan presents the park's mission, vision, and goals, along with the key issues identified during the planning process. This plan provides general management direction in the park, and is not intended to provide specific park development details. Site-specific, detailed development plans will be completed based on the concepts outlined in this plan. Contained in this plan is a detailed assessment of resources and recreational opportunities that provide data for use in making management decisions. Recommended future actions are presented at the end of each chapter. Extensive public involvement has resulted in the development of this integrated resource management plan. The DNR is committed to efficiently and innovatively managing the natural and cultural resources while serving recreational users.

The DNR seeks funding to complete facility improvements outlined in this plan and to initiate the next phases of natural and cultural resource management for the park.

Park Description/History

Charles A. Lindbergh State Park is a quiet 338-acre wooded park located in Morrison County in central Minnesota. The Mississippi River and Pike Creek are two of the park's most outstanding natural resources. They attract anglers and other park visitors to their shores and provide excellent wildlife habitat. Picturesque Pike Creek meanders through the center of the park and empties into the Mississippi River.



Pike Creek

The Mississippi River; wide, deep, and swift compared to Pike Creek; forms the eastern boundary of the park. Oak woods, aspen, pine and upland grasses are the major plant communities found in the park. They provide aesthetic diversity and habitat for a variety of wildlife. Scattered old growth white pines are found throughout the park.

The park lies within the city limits of Little Falls in central Morrison County. South Lindbergh Drive (County Road 52) provides access to the park from Little Falls. Trunk Highway 10 provides access to the park from the south and the northwest. TH 371 provides access from Brainerd and other locations north of the park, while TH 27 provides access from the east and west.

The park offers opportunities for picnicking, camping, fishing, hiking, canoeing, cross-country skiing, and snowshoeing. Six miles of hiking trails and five and one-half (5.5) miles of ski trails are presently maintained. The park's 38 campsites are widely separated with a buffer of native shrubs and trees, giving campers a feeling of being surrounded by the natural environment, even though downtown Little Falls is only 1.5 miles away. The park also offers visitors a quaint picnic area that includes a historic Works Progress Administration (WPA) picnic shelter, stone water tower, latrine, and water fountains. These features, along with Lindbergh's boyhood home, are on the National Register of Historic Places



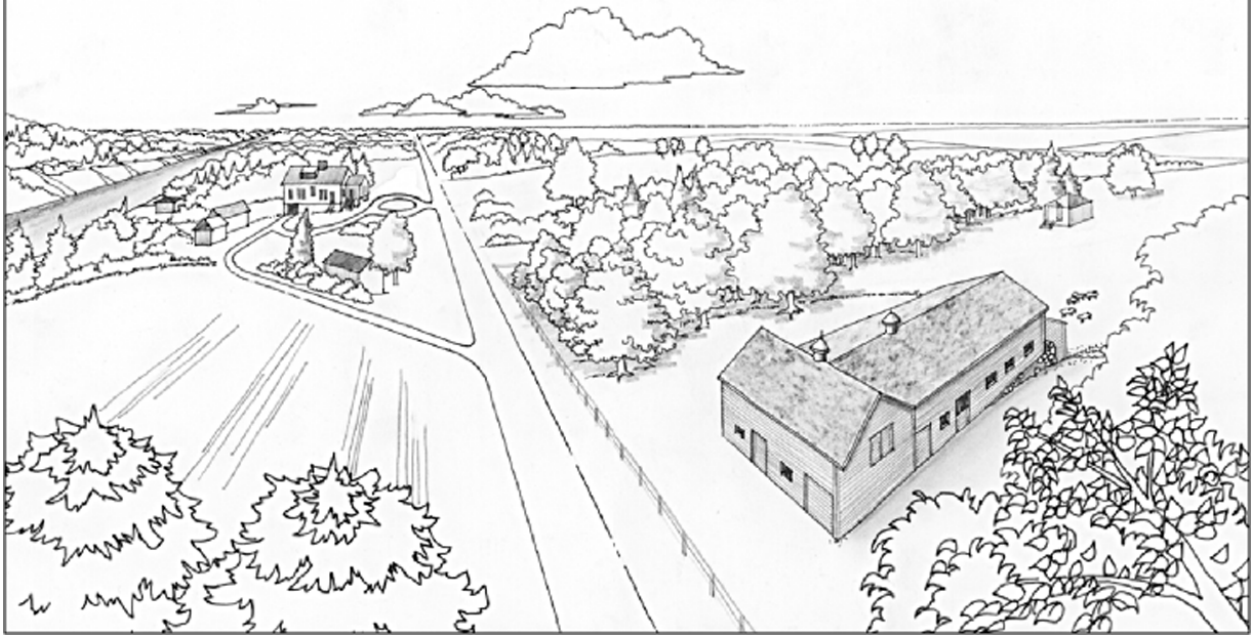
Picnic Shelter & Water Tower (circa 1998)

The original Lindbergh farmhouse was built by Charles, Sr., the park's namesake. The two-story house burned to the ground in 1905 and was rebuilt as a 1-½-story house on the original foundation. Charles, Sr., who was an U.S. Congressman from 1906-1916, lived here with his family primarily during the summer months, but Charles, Jr. ran the farm full time for two years before he left for college in 1920. After his nonstop solo flight across the Atlantic Ocean in 1927, worldwide attention was focused on the boyhood home of Charles, Jr.

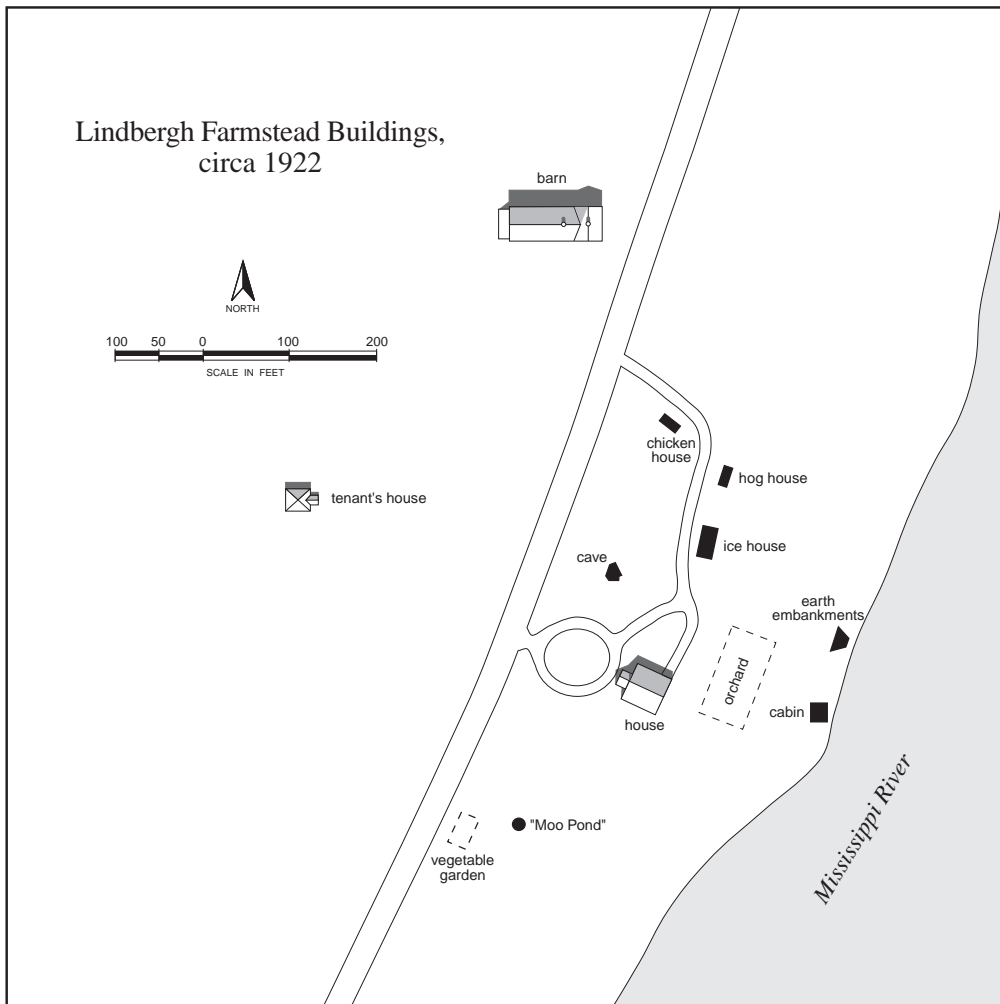


Lindbergh Home (circa 1940)

Charles A. Lindbergh Farmstead
(as it may have looked) circa 1922



Lindbergh Farmstead Buildings,
circa 1922



“If I had to choose between airplanes and birds, I would choose birds.”

Charles A. Lindbergh, Jr.

The original 110 acres of the park were donated to the state of Minnesota in memory of Charles A. Lindbergh, Sr., by his family in 1931. The farmhouse, icehouse, and tenant farmer’s house are the only original buildings remaining. The barn, which burned down in 1923, after Charles, Jr. left the farm, was never rebuilt. A history center constructed in 1972 contains photographs and memorabilia that document the family’s accomplishments and portray what life was like on the Lindbergh farm.

“I never deserted the farm as the ultimate goal of my return – and there is my home when I am home, for the farm unquestionably is the best of all places to live, and it affords the most independence.”

Charles A. Lindbergh, Sr.

Three different agencies, the Department of Natural Resources (DNR), the Minnesota Historical Society (MHS), and the Morrison County Historical Society (MCHS) all administer acreage within the statutory boundary of the park. The DNR administers all lands (except the water access site) on the west side of County Road 52, the MHS administers 17 acres on the east side, while the MCHS administers two acres in the southeastern corner of the park. The well-used public water access at the mouth of Pike Creek is also owned and administered by the county.

A trail along the Mississippi River connects the MHS History Center and the MCHS Weyerhaeuser Museum.

Legislative History

The State Park was established in the memory of C.A. Lindbergh, Sr. in 1931. The statutory boundary was amended in 1965, 1967, 1969, 1993 and 1996. Administration and control of the land and buildings east of County road 52, was transferred to the Minnesota Historical Society in 1969 (MN Laws 1969, Ch.956 s.1 subd.3).

The Planning Process

In May, 1997, a public news release announced the beginning of the Charles A. Lindbergh State Park planning process. It noted that there would be several public “open houses” and the formation of a temporary Park Planning Citizen Advisory Committee. The committee structure included representation from the following:

City Park Board Officials	Farmers
Local Environmentalists	Local Government Officials
Recreation interests	Business Interests
Private, non-profit Interests	School Teachers
State & County Historical Society Interests	University Professors

Citizen Advisory Committee meetings (advertised and open to the public) were held to discuss major planning issues on the following dates:

May 21, 1997	August 28, 1997
June 24, 1997	September 29, 1997
July 24, 1997	October 30, 1997

In addition, public “Open Houses” were held on the following dates:

May 21, 1997,
November 20, 1997
April 16, 1998.

The Department of Natural Resources formed an Integrated Resource Management (IRM) team to assist in developing this park plan. This professional team included those listed on the acknowledgments page. The IRM team met formally on November 19, 1996 and October 21, 1997. These members also attended the Citizen Advisory Committee meetings that were appropriate to their discipline. Individual team members also meet informally to work on specific issues throughout the planning process.

The current plan is the second comprehensive management plan for the park, the first was approved in 1981. A “planning process file,” documenting the planning process and pertinent background information, will be available at the following locations:

- Lindbergh State Park, (Little Falls)
- DNR Region III Parks and Recreation (Brainerd)
- State Park Planning Section (St. Paul)

Copies of this park plan will also be located in the DNR Library in St. Paul and in the Little Falls and St. Cloud public libraries.

Park Mission, Vision, and Goals

Mission:

To preserve and manage the diverse natural, scenic, and cultural resources of Charles A. Lindbergh State Park for present and future generations while providing appropriate recreational and educational opportunities.

Vision:

- The park will be an area that provides natural, educational, recreational, and historical opportunities for generations to come.
- Functioning ecological communities and associated wildlife will be found in the park.
- Educational and interpretive programs will be developed for the park and the surrounding area.
- The aesthetic beauty of the park and historic site will be maintained and enhanced.

Goals:

- Maintain most of the park in a natural condition and cluster major use facility development, to reduce overall impact.
- Encourage tourism in the locality by being an active participant in tourism efforts with the communities of Morrison County.
- Provide a balance between natural environment, recreational, and cultural interests.
- Provide appropriate recreational opportunities such as: biking, cross-country skiing, snowshoeing, fishing, canoeing, wildlife viewing, environmental education, and unforeseen low impact uses. Place a strong emphasis on health - related recreation.
- Promote, interpret, and provide additional opportunities for wildlife observation, vegetation and ecosystem understanding.
- Provide a visitor contact station with appropriate interpretive displays.
- Improve park facilities (trails and buildings) to accommodate visitors of all ages and abilities.
- Provide low impact camping facilities and services for a variety of camping styles that complement the areas existing private facilities.
- Acquire private land within the park statutory boundary from willing sellers.
- Seek park statutory boundary changes that enhance future park opportunities.
- Cooperate with the state and county historical societies to interpret the area.

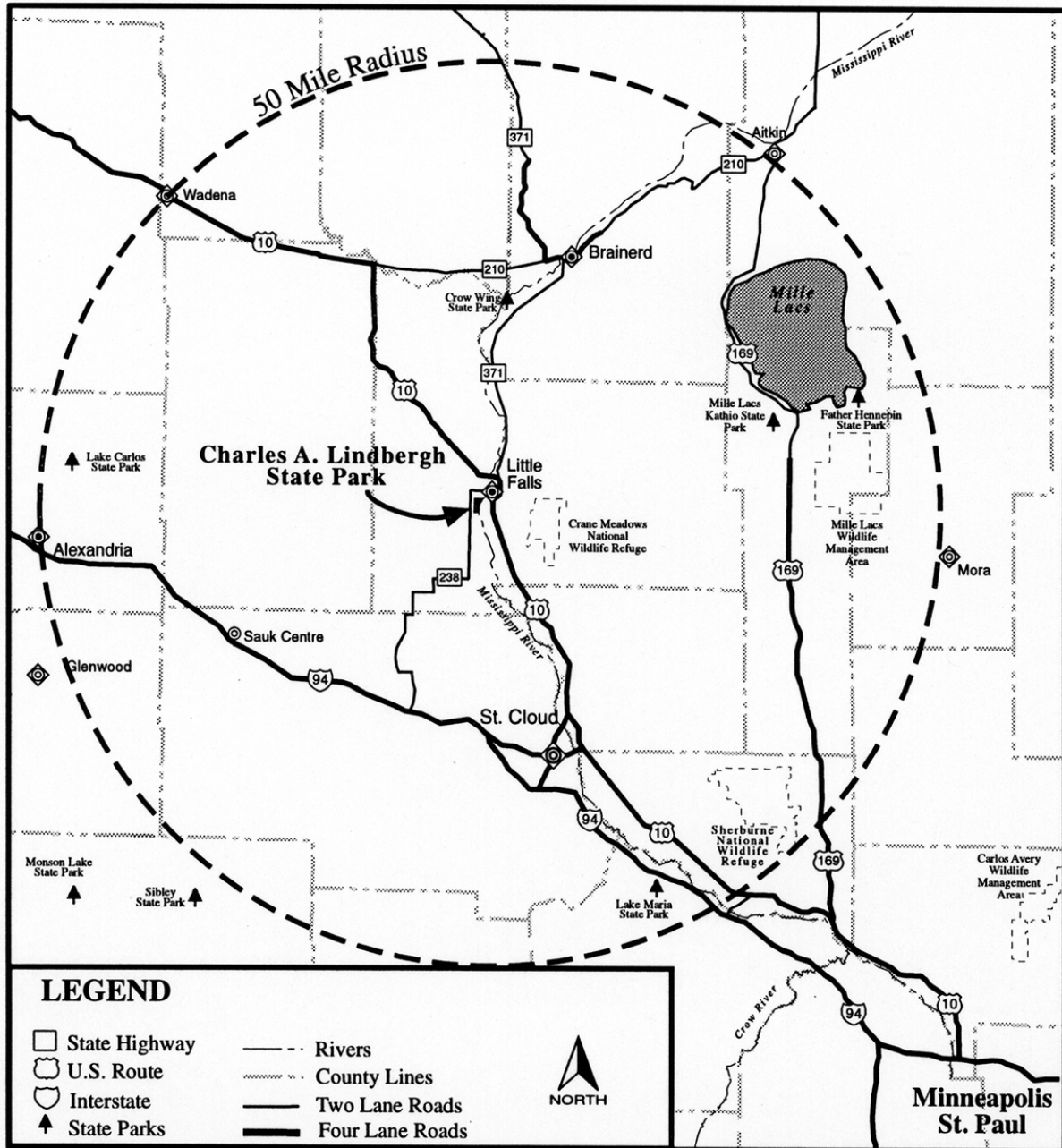
II. BEYOND PARK BOUNDARIES

Regional Context and Issues

The following section describes the regional population, tourism, supply and demand of recreational services, and the area's natural resources and landscape. Throughout this chapter, the plan will reference a 50 - mile radius from the park, which is approximately a one-hour drive.

The region's economy is based heavily on travel and tourism. These economic impacts are dependent upon maintaining good water quality, fisheries, wildlife, aesthetic, cultural, and historic attributes of the region.

Regional Context



Regional Environmental Issues:

- Protecting both groundwater and surface water resources, including protection of shore topography, vegetation and bluff impact zones.
- Protecting the region's streams, rivers, and wetlands while minimizing activities that change drainage patterns.
- Providing a high quality sustainable fishery in the region's lakes and rivers, with emphasis on the Mississippi River.
- Controlling the spread of nuisance exotic species.
- Identifying and managing unique natural and cultural resources.
- Maintaining a balance between natural resource management and strong local/regional economy.
- Maximizing biological diversity and minimizing fragmentation of natural habitats.

Geography

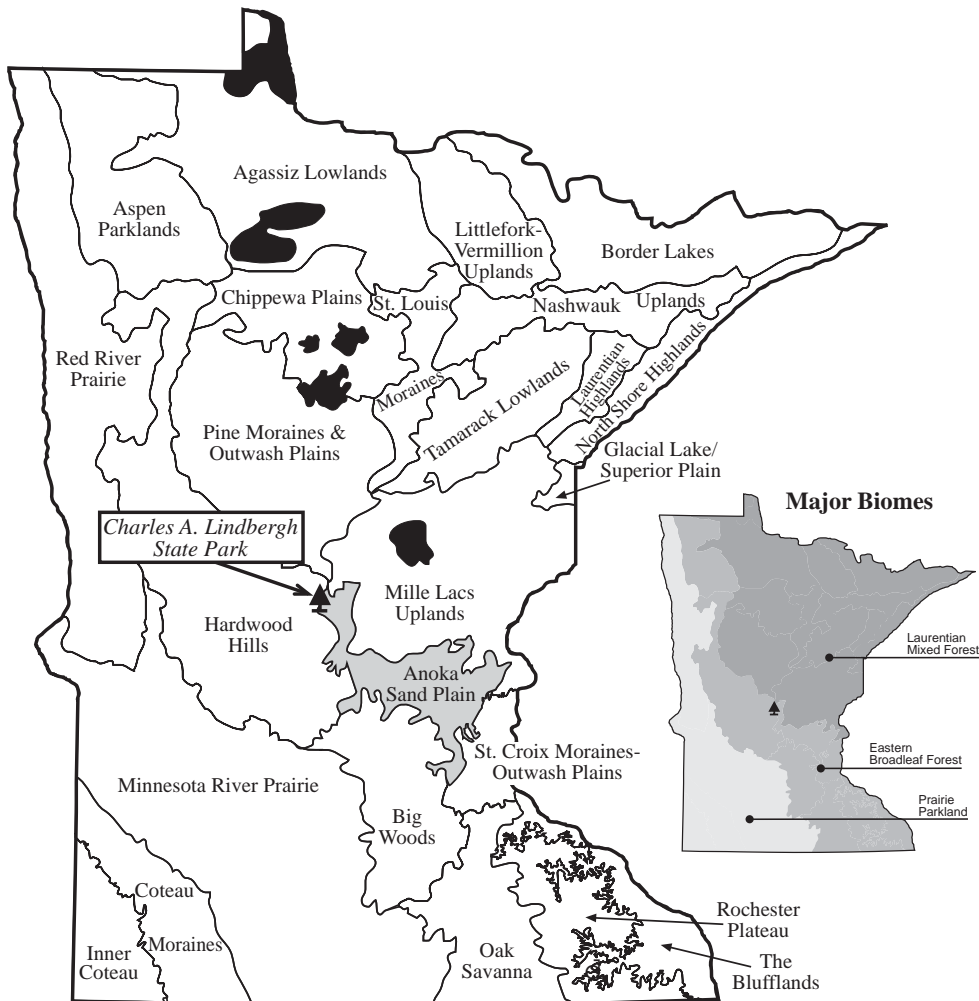
- Morrison County (719,593 acres) extends 41 miles from east to west.
- The county has 31 townships, with 14 on the West Side of the Mississippi River and 17 on the east side.
- Besides the Mississippi River (and the Crow Wing River that borders the NW side of the county), Morrison County has the following rivers and streams: Platte, Little Elk, Swan, North and south Two Rivers. Creeks or Brooks include: Rice, Skunk, Buckman, Little Rock, Pike, Hay and Spunk.
- Major lakes within the county include: Alexander, Fish Trap, Shamineau, Platte, Sullivan, Rice, Skunk, Green Prairie Fish, Pierz Fish, Lake Beauty, Cedar, Pine and Round Lakes.
- The county is serviced by one major railroad line: Burlington Northern RR (includes old Northern Pacific).
- U.S. Highways 10 and 371, and State Highways 25, 27, 28, and 238 are the major roads.
- Little Falls is the county seat. Other villages, towns, or cities are Bowlus, Buckman, Cushing, Elmdale, Flensburg, Freedhem, Genola, Harding, Hillman, Lastrup, Little Rock, Morrill, Motley, Pierz, Ramey, Randall, Royalton, Sobieski, Swanville, and Upsala.

Ecological Classification System

Minnesota's Ecological Classification System (ECS) is a means of separating and describing units of a landscape. This approach stresses the interrelationships and the results of interactions among components of the ecosystem. These components include climate, geology, geomorphology, parent material, soil, vegetation, hydrology, and land history. The ECS approach handles each component in relation to the others, rather than treating each one separately (Hargrave, 1992).

The state of Minnesota is divided into 23 distinct units called subsections. The park is located in the northwest corner of the Anoka Sand Plain landscape subsection. Consequently it may contain elements present in the Hardwood Hills, the Pine Moraines and Outwash Plains Subsections.

ECOLOGICAL CLASSIFICATION SYSTEM (ECS) Subsection Map of Minnesota



Anoka Sand Plain Landscape Subsection

Little Falls	Morrison	7,232	within city limits
Brainerd/Baxter	Crow Wing	16,048	31
St. Cloud	Stearns	48,812	33
Alexandria	Douglas	7,838	50
Twin Cities	various (7)	2.4 million	100

Population estimates are from the 1990 U.S. Census.

Although the 50-mile radius surrounding the park is fairly heavily populated, the towns in the immediate area of the park are quite small. The countryside is sparsely populated with large areas of lakes and wetlands. Since this region contains a high percentage of seasonal residences, the regional population increases significantly during the summer months.

The Minnesota Population Projections 1990-2020 report shows a slight increase for Morrison County by the year 2020. Projected populations are as follows:

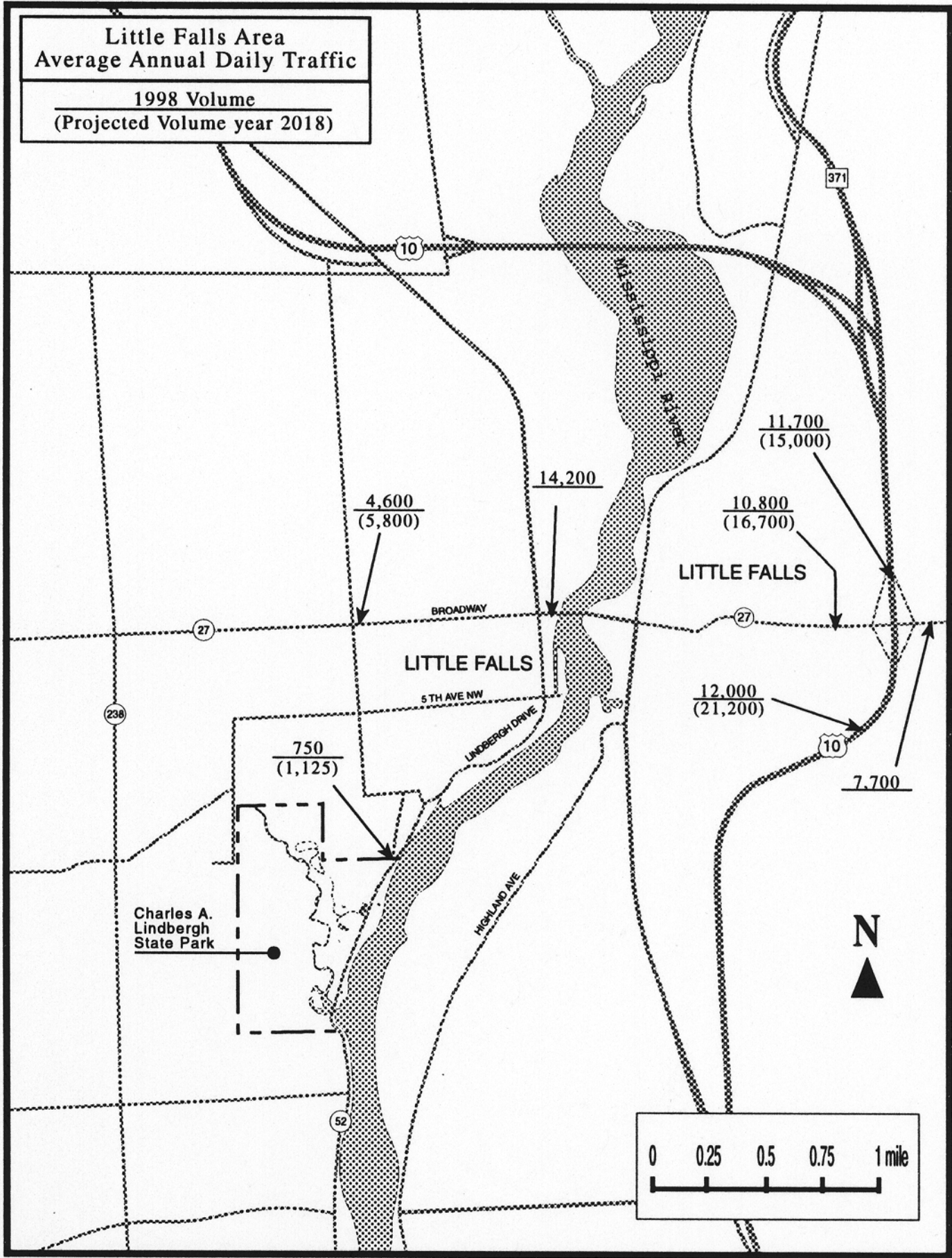
Year	1990	1995	2000	2010	2015	2020
Morrison County Population	29,604	29,770	29,720	29,770	30,010	30,570

Morrison County experienced a 2.3% increase in per capita income from 1994-1995 compared to a statewide increase of 4.5%. Overall, from 1990-1995, Morrison County's per capita income had a 21.7% increase, while the statewide increase was 23.6% .

Per Capita Income

Year	Morrison County	Statewide
1990	\$ 12,645	\$ 19,373
1994	\$ 15,043	\$ 22,912
1995	\$ 15,388	\$ 23,937

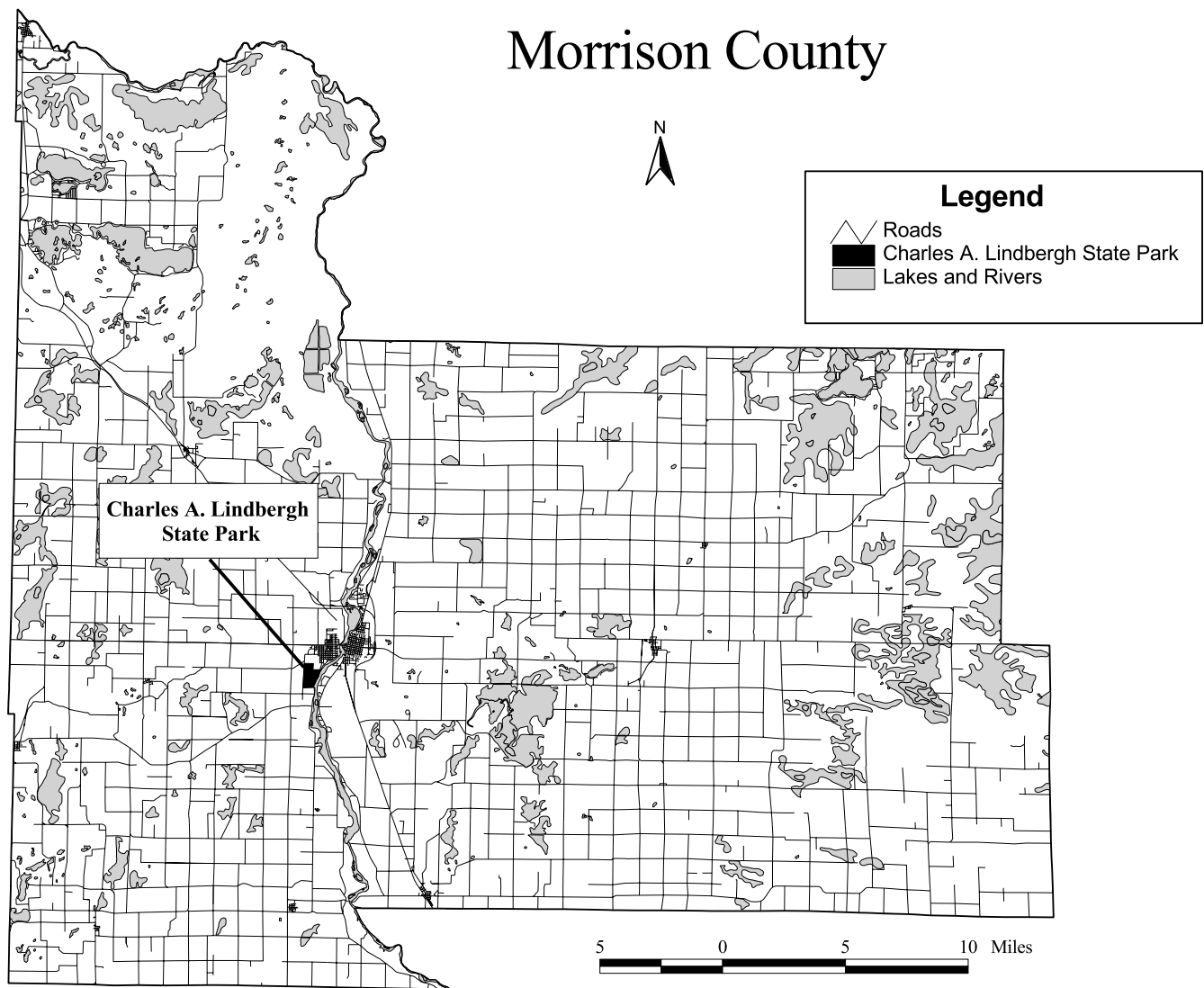
In Minnesota, the median age rose from 29.2 years in 1980 to 32.5 in 1990. This follows a nationwide trend of aging of the "baby boom" generation.



Regional Business and Industry

The topographical landscape of Morrison County was the key to the success of a wide variety of businesses and industries throughout its history. The Mississippi River runs through the center of the county and was harnessed by early settlers for its power. Nichols Headlight, published in November 1899 praised other geographical features of the county.

“To the west and southwest of these forests and mines lie the great fertile plains which have become the wonder and admiration of the world. But of all the vast area, in natural resources, Morrison County stands unsurpassed. Its climate is perfect, its surface mildly undulating, and while for the width of two or three miles along the track of the Northern Pacific Railway, the soil is light and sandy, throughout the county as a whole, it is most fertile. Fully three-fourths of it has been heavily wooded, the trees being of many kinds, sugar maple and oak predominating.”



Agricultural, logging and fur trading were primary industries in the early years of Morrison County's history.

In order to accommodate the needs of a growing population, which was attracted to Morrison County by its beautifully diverse landscape, a wide variety of business and industries sprang to life. Some of these have survived to the present time, while many have succumbed to the onward march of societal change.

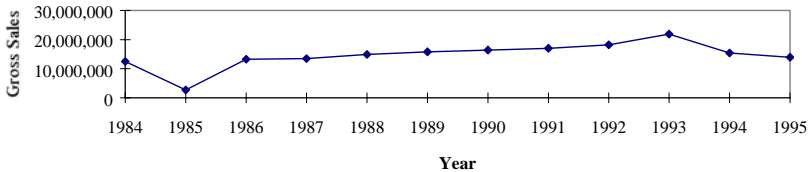
Little Falls, the county seat, straddles the river and is the most populated city in the county. Today, two boat factories and a paper mill are but a few of the industries of Morrison County. The cordwood industry plays a significant economic role in the county.

Agriculture directly led to settlement of rural Morrison County. Approximately 60% of the county's gross income are from agricultural production. Currently, Morrison County has between 3,200 and 3,300 farms.

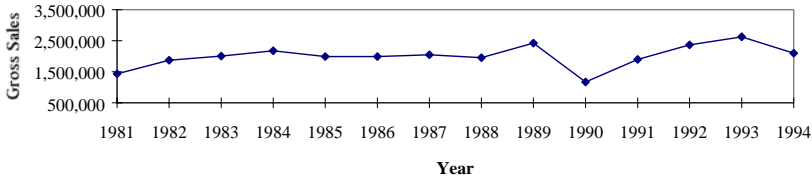
The graphs on the following page provide information regarding gross sales from the travel, hospitality and recreation industries on both a county and city level.

Morrison County Sales Data

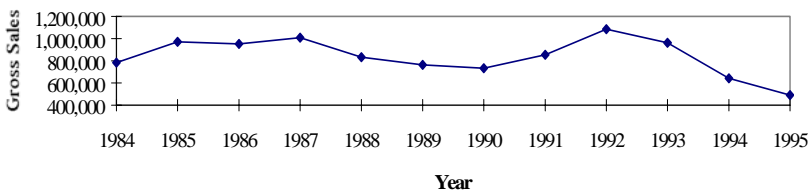
Gross Sales from Eating & Drinking Businesses



Gross Sales from Hotels, Motels, and Resorts

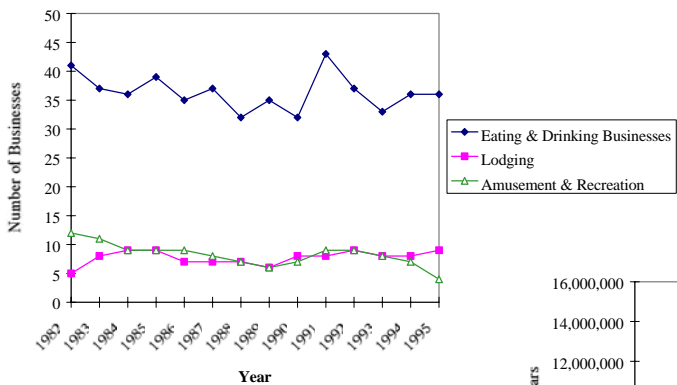


Gross Sales from Amusement and Recreation Industry

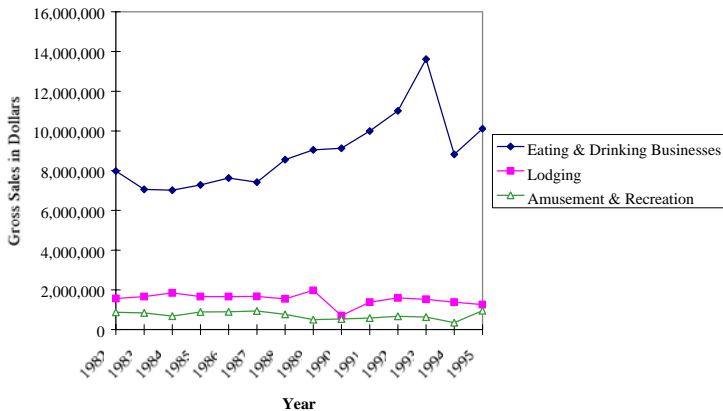


City of Little Falls Industry Data

Number of Businesses by Year



Gross Sales by Individual Industries



Listed below are examples of past and present businesses and industries from the past in Morrison County.

Past

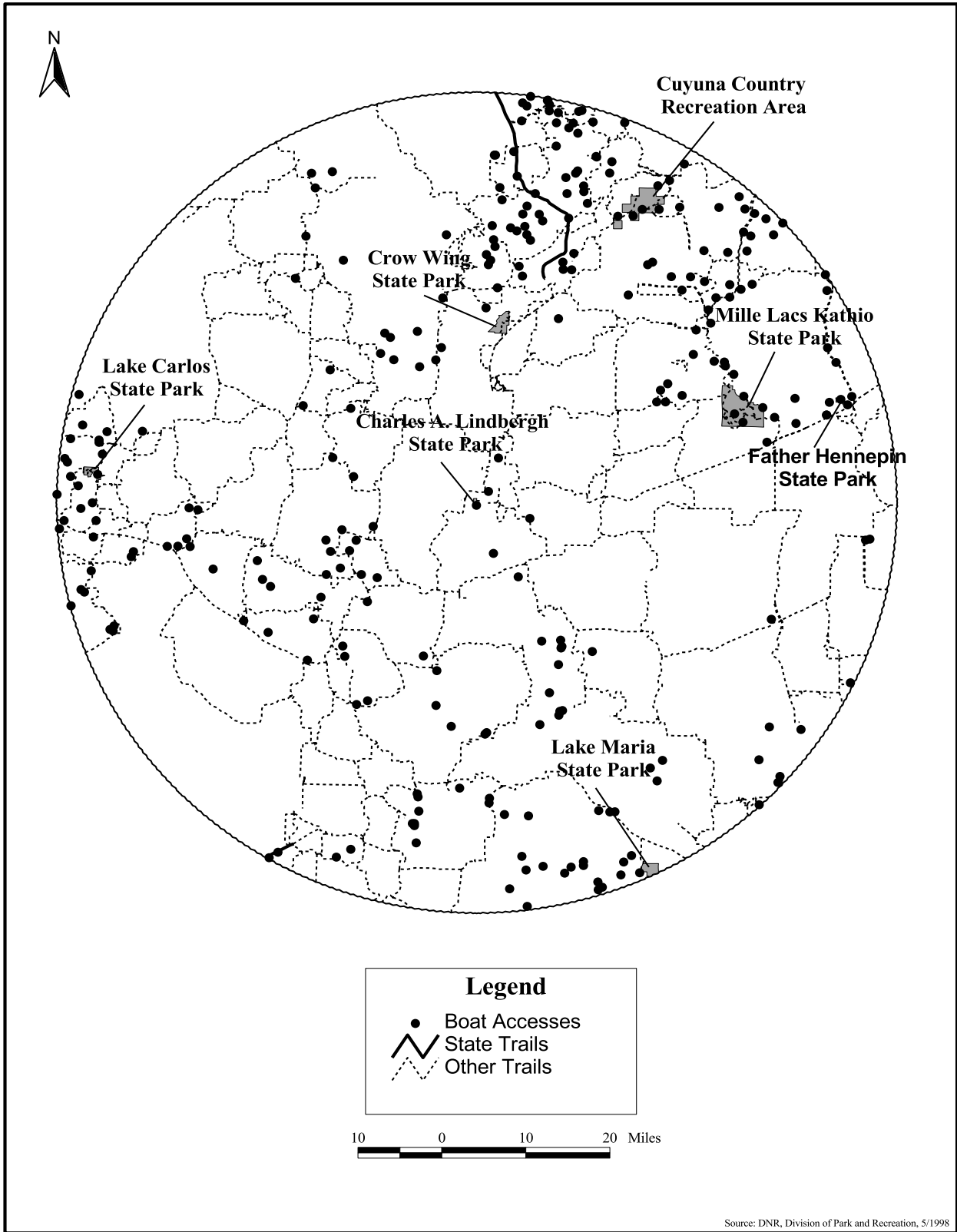
- Logging
- Agriculture/Farming
- Creameries
- Fur Trading
- Grain Elevators & Feed Mills
- Milling (Flour & Lumber)
- Brewery
- Mercantile (Dry Goods & General Merchandise)
- Black Smithing
- Brick Manufacturing
- Granite Quarrying
- Sash & Door Factory
- Iron Works
- Sleigh Manufacturing
- Carriage Manufacturing
- Harness & Saddlery Manufacturing
- Cigar Factory
- Livery
- Millinery Shops
- Confectionery (Candies & Ice Cream)
- Wild Ricing
- Agricultural Implement Dealers
- Land Agents/Developers
- Little Falls Business College
& School of Penmanship
& Shorthand

Present

- Tourism
- Agriculture/Farming
- Boat Manufacturing
- Granite Finishing
- Machining/Metal Working
- Snow Plow Manufacturing
- Paper Mill
- Hospital
- Mail Distributing
- Agricultural Implement Dealers
- Plastics Production
- Headwear Manufacturing
- Automobile Dealers & Repairs
- Milk Product Processing
- Printing
- Woodworking Shops
- Landscaping/Greenhouses
- Seafood Processing
- Camp Ripley (Military & Law Enforcement Training Center)
- Airport
- Building Construction
- Meat Processing
- Recreation & Sporting Goods
- Computer Networking
- Land Agents/Developers

“The county is dotted with beautiful lakes of varying size, which are full of the best fish. Running water is abundant, stagnant water unknown. Rivers and creeks are numerous, and among them is the Father of Waters, which runs through county from north to south, dividing it into nearly equal portions.”

Nichol’s Headlight, 1899



Source: DNR, Division of Park and Recreation, 5/1998

**Regional Recreation Facilities
(Within 50 miles of Little Falls)**

Morrison County Recreational Facilities

With a past that is as rich and varied as its landscape, Morrison County has many cultural, natural, and recreational assets to attract visitors to the area. These sites are listed below.

Cultural Sites

- Agram Quarry
- Axel Borgstrom House
- Belle Prairie Park
- Blanchard Dam
- Burton-Rosemeier House
- Camp Ripley
- Carnegie Library
- Cass Gilbert Depot
- Lindbergh House and History Center
- The Charles A Weyerhaeuser Memorial Museum
- Dewey Radke Home
- Fishing Museum (potential)
- Freedhem Quarry
- Hallberg Property
- Hole-in-the-Day Bluff
- Lincoln Lakes Area
- Little Elk Heritage Preserve (MO-20 site)
- Little Falls/Morrison County Airport
- McDougall Homestead
- Minnesota Military Museum
- Minnesota State Veterans Cemetery
- Mississippi River & Dam
- Morrison County Courthouse
- Musser-Weyerhaeuser Houses
- Paul Larson Memorial Museum
- Primeval Pine Grove Park & Zoo
- St. Francis Center

Parks & Recreational Facilities

- Bingo Park
- Charles A. Lindbergh State Park
- Cliff Beebe Lions Park
- Columbia Playground
- Cushing Community Park
- Exchange Arena
- Fairgrounds/Entertainment Center
- Green Prairie Fish Lake Public Beach
- James Green Park
- Jaycee park
- Kiwanis Ballfield
- Kiwanis Park
- LeBourget Park
- Little Falls Golf Course
- Maple Island Park
- Memorial Park
- Pierz Golf Course
- Pine Tee Park
- Pine Ridge Golf Course
- Snowmobile Trails

Park Visitor Analysis

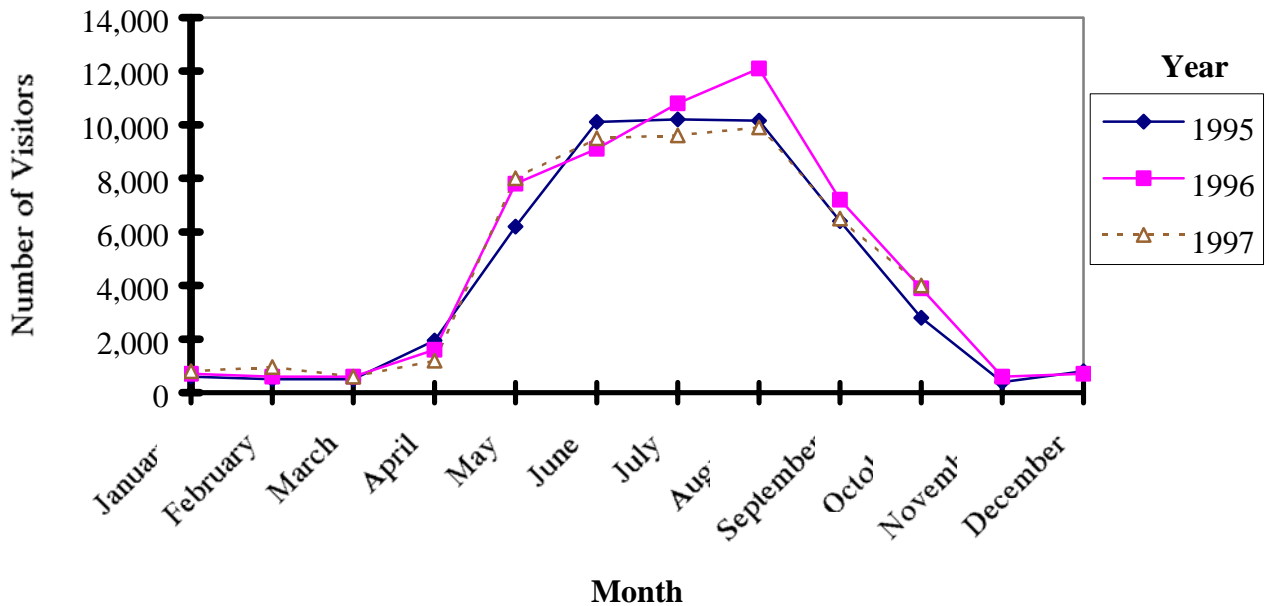
The past 8 years have seen a modest increase in total visits to the park. The most popular day-use recreational activities are picnicking, hiking, fall color sight - seeing, and wildlife observation. During the summer months, visitor use is heaviest on weekends. Many of the visitors using the park also visit the nearby Lindbergh house and Weyerhaeuser Museum. The majority of park visits occur between mid-April and mid-September.

Cross-country ski use in the park continues to be a popular activity. Snowshoes are now available for rent at the park office. The picnic shelter has been modified to serve as a warming shelter during the winter.

Park Use – 1990 - 1997

	1990	1991	1992	1993	1994	1995	1996	1997
Vehicles	9,604	11,625	13,104	12,207	14,090	13,751	13,378	13,378
Visitors by Vehicles (Day Use)	42,831	46,318	48,553	42,169	49,053	43,977	46,902	43,670
Other	10,204	9,113	7,285	3,238	3,984	3,850	4,860	5,070
Overnight Visitors	5,368	5,499	5,387	4,291	5,642	5,413	5,711	5,348
Total Visitors	48,199	51,817	53,940	46,460	54,695	53,240	57,473	54,088
Campsites Occupied	1,679	1,790	1,717	1,466	1,816	1,851	1,959	1,869
Campers	4,940	5,390	5,205	4,115	5,438	5,138	5,559	5,137
Group sites Occupied	24	11	15	20	17	21	12	19
Group Campers	428	109	182	196	204	275	152	211
Skiers	486	1,460	850	2,191	1,511	1,679	2,012	1,433

Monthly Visitor Count



Camping, which is a major activity at the park, continues to steadily increase. The semi-modern campground is usually filled to capacity on holiday weekends and near to capacity during July and August weekends, and during peak fall color weekends it can also be near capacity.

Group camp occupancy has dropped slightly in recent years.

Tourism, Marketing, Partnerships, and Volunteer Actions

There is considerable local interest in providing a “Teacher’s Guide” to the 3 sites (Lindbergh House and History Center, Lindbergh State Park, and the Charles A. Weyerhaeuser), which are all located within ¼ mile of each other. If teachers had this tool, they would be more likely to use one or all of these sites. The Teacher’s Guide could be a result of a collaborative effort of the three agencies, school district, and selected volunteers.

Directional signage to the three sites should be made more readable and consistent. Signing for the State Park, the Lindbergh House, and the County Historical Museum could all be on one directional sign. This sign could be used in a number of locations around town. Signing efforts need to be coordinated through MNDOT and the city of Little Falls.

In order to promote the park and the surrounding attractions, a combined marketing approach by the three agencies may be of benefit. Often times a visitor using one of the facilities does not take the opportunity to visit the other two. An open house event sponsored by all three agencies could enhance overall visitor numbers. State parks typically have their annual open house the first weekend in June. Providing more guided tours on the three different properties would enhance the overall visitor experience.

Tourism and Volunteer Actions

- ◆ *Promote special events in the park during non-peak times.*
- ◆ *Partner with resorts and city park staff to provide nature hikes with volunteers, resort naturalists, and interns.*
- ◆ *Once a year, organize a tour of the three sites for resort owners and businesses. This could be a cooperative project with the Little Falls Visitors and Convention Bureau. Highlight future events.*
- ◆ *Develop a joint brochure/flyer with MHS and Morrison County Historical Society. Conduct joint programming and an “open house” for all three sites.*
- ◆ *Work with Linden Hill (Little Falls Conference Center & Elder Hostel) on programming opportunities.*
- ◆ *Work with the St. Cloud Audubon Club to develop a bird watching special event in the park. Develop a comprehensive species checklist for the park.*
- ◆ *Develop a “Friends of Charles A. Lindbergh State Park” group to assist with park promotion and enhancement.*
- ◆ *Seek corporate/business sponsors for park projects. The park and the “Friends” group could then continue to maintain a wish list of park projects.*
- ◆ *Develop literature on the park to hand out to visitors and to distribute to resorts, chambers, and at special events.*
- ◆ *Work with appropriate groups promoting annual bike and hiking events.*

III. NATURAL AND CULTURAL RESOURCES

Historic Sites within the Park

Presently, two sites occur within the park that are on the National Register of Historic Places (NRHP). They are the **Charles A. Lindbergh Home** and the **CCC/WPA/Rustic Style Historic Resources**. The **Lindbergh Home** is also a National Historic Landmark whose designation occurred on December 8, 1976.

The WPA structures, which lie west of County Road 52, include the picnic shelter, water tower, latrine, drinking fountains, and retaining wall on the east bank of Pike Creek

The **Picnic Shelter**, built in 1938, is a T-shaped structure constructed with peeled logs with saddle-notched corners resting on a stone-faced concrete foundation. The interior features a massive stone fireplace, four original cast iron wood cook stoves, and the original sink.



Picnic Shelter

The main section of the **Water Tower**, built in 1938, is constructed with native stone rising 23' 6" with a 6" batter. The hip roof rises above a log-faced section that conceals the 5,000-gallon steel water tank.



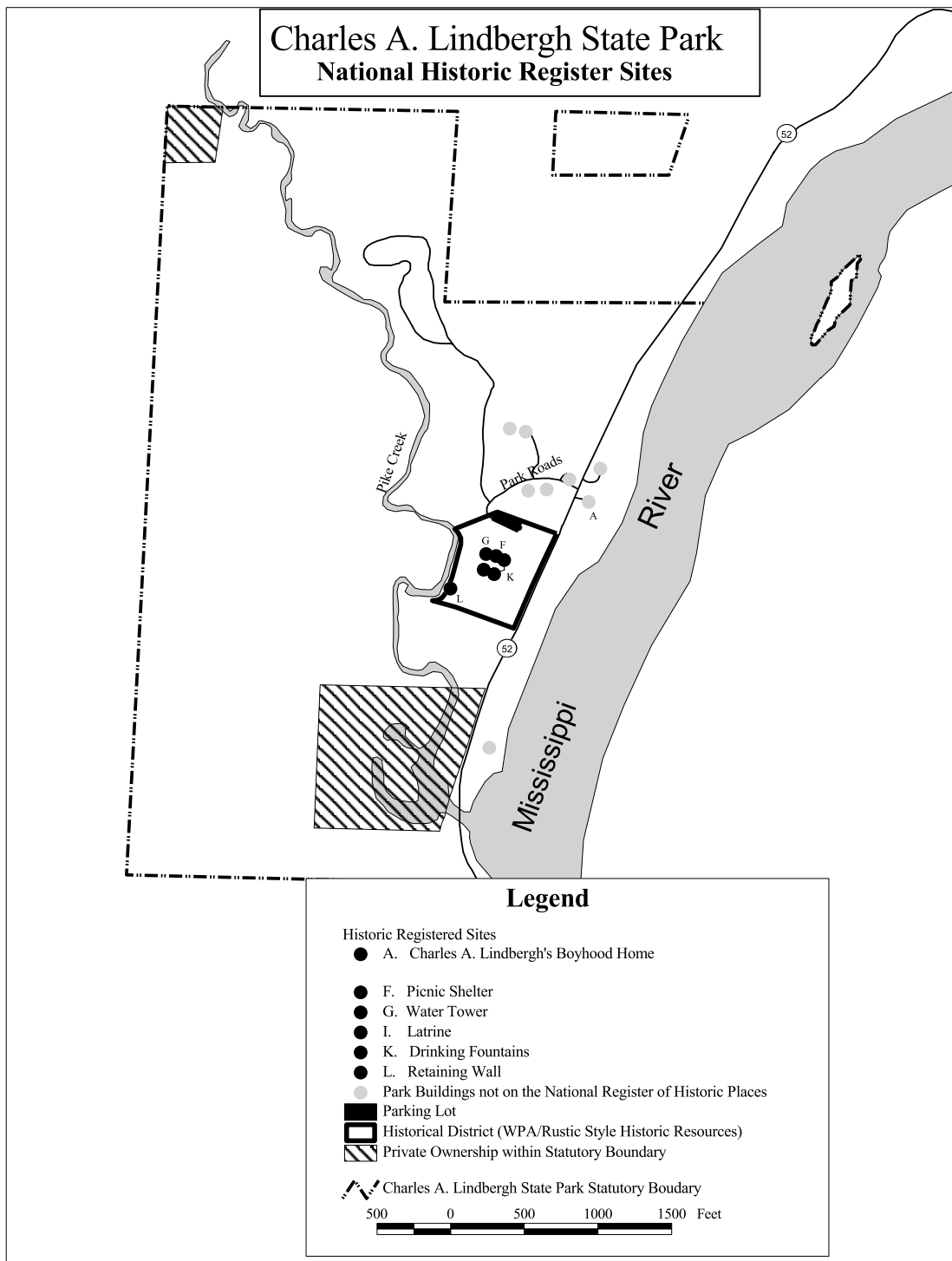
Water Tower

The rectangular **Latrine Building**, built in 1939, is constructed with peeled logs with saddle-notched corners resting on a stone-faced foundation. During a 1963 remodeling, the projecting log ends and purlins were cut, trimmed, or replaced. This structure was shingled with wood shingles in 1992.

Two stone **Drinking Fountains**, built in 1938, are located adjacent to the Picnic Shelter. Both fountains rest on 10' 3" by 10' 3" platforms constructed with native stone flagging and platforms.

A stone **Retaining Wall**, built in 1938, is located on the east bank of Pike Creek adjacent the picnic area. Resembling riprapping, the stonework is laid without mortar and is now quite overgrown.

Additional information about these features may be obtained from the NRHP nomination forms.



Climate

The park is affected by the same weather patterns that are responsible for the climate of the entire state. Minnesota experiences a continental climate that is influenced by cold arctic air masses in winter and warm Gulf of Mexico air masses in the summer.

The average summer temperature is 68⁰F, with a daily maximum average of 81⁰F. The average winter temperature is 12⁰F, with a daily minimum average of 1⁰F.

Total annual precipitation is about 26 inches. Average annual snowfall is 41 inches.

Geology

The landscape of Charles A. Lindbergh State Park was formed by the glacier of the Wisconsin ice age, which occurred between 100,000 and 10,000 years ago.

The Wisconsin glaciation involved many advances and retreats of substages and lobes of the glacier. The actions of the Superior, Grantsburg-Des Moines, and Rainy lobes formed the landscape in the vicinity of the park. Evidence of the interface of these three lobes can be found along TH 27 west of Little Falls. Here the characteristic red drift (rock material carried and deposited by the glacier) of the Superior lobe, the gray drift of the Grantsburg-Des Moines lobe, and the brown drift of the Rainy lobe are found together.

The St. Croix moraine, a mound of unsorted rocks, sand and gravel which piled up at the end of the Superior and Rainy lobes can be seen in areas near the park. A minor moraine is located in the southern half of Morrison County on the east side of the Mississippi River running parallel to the river. Another minor moraine runs northeast from Little Falls.

The park is located on a till plain, a flat area where unsorted clay, sand, gravel, and boulders were deposited directly by the Rainy lobe. The brown drift of this lobe covers the bedrock to a depth of approximately 100 feet.

Precambrian igneous and metamorphic rocks underlie the glacial drift. The rocks that make up the bedrock belong to the Animikie group and include argillite, graywacke, and iron formations.

The boulders, which can be seen in the streambed of Pike Creek, near the picnic area, under the trail bridge, are fragments of a formation known as the Thomson formation, which is composed of slates. The Mississippi River cut a falls through this formation approximately one mile north of the park in Little Falls.

Soils

Most of the soils in Charles A. Lindbergh State Park are sandy and/or wet. Particular attention should be paid to the soil types in the restoration and management of vegetative communities.

The soil limitations chart and maps provide additional information about the soils found within the park boundaries.

Soils found within the park consist of the following:

25 - Becker fine sandy loam

Found along the shores of the Mississippi River, this nearly level, well-drained soil is on plains or convex rises on floodplains. It is subject to rare flooding. The surface soil is fine sandy loam, the subsoil is very dark grayish brown loamy sand. The underlying material is yellowish brown fine sand.

Permeability is moderately rapid in this soil. The available water capacity is low. Surface runoff is slow. The content of organic matter is moderate or high. The season high water table is at a depth of 4 to 6 feet.

This soil has moderate limitations that reduce the choice of plants or that require moderate conservation practices mainly because it is shallow, droughty, or stony.

119B - Pomroy loamy fine sand, 1 to 6 percent slope.

This nearly level or gently sloping, well-drained and moderately well - drained soil is on crests and side slopes of drumlins and ground moraines. The surface layer is very dark grayish brown loamy fine sand. The subsurface layer is brown loamy fine sand. The subsoil is a brown loamy fine sand underlain by a brown sandy loam. The underlying material is brown sandy loam.

Permeability is rapid in the upper part and moderately slow or very slow in the lower part. The available water capacity is low. Surface runoff is slow or medium. The content of organic matter is low or moderately low.

This soil has severe limitations that reduce the choice of plants or that require special conservation practices or both. This soil is limited mainly because it is shallow, droughty, or stony. The soil can support a moderate number of trees due to its sandy texture.

142 - Nokay loam

This nearly level, somewhat poorly - drained soil is on side slopes, on broad flats, and in swales on drumlins and ground moraines. The surface layer is very dark gray loam. In some areas the surface layer has more sand, in others it is very stony. The subsurface layer is grayish, brown, mottled fine sandy loam about 8 inches thick. The subsoil is brown, mottled sandy loam. The underlying material is brown, mottled sandy loam.

Permeability is moderate or moderately rapid in the upper part of this soil and slow or very slow in the lower part. The available water capacity is moderate. Surface runoff is slow. The content of organic matter is moderate or high. A perched water table is found at a depth of 1 to 3 feet.

This soil has moderate limitations that reduce the choice of plants or that require moderate conservation practices. Water in or on the soil interferes with plant growth. This soil can support a moderately high number of trees, however, rooting depth is restricted.

144E - Flak sandy loam, 15 to 25 percent slopes.

Found along the banks of Pike Creek, this moderately steep or steep, well - drained soil is on side slopes on drumlins and ground moraines. The surface layer is very dark grayish brown sandy loam. The subsoil is a dark yellowish brown sandy loam in the upper part and a brown sandy loam in the lower part. The underlying material is brown sandy loam.

Permeability is moderate or moderately rapid in the upper part and slow or very slow in the lower part. The available water capacity is low. Surface runoff is rapid. The content of organic matter is low or moderately low.

This soil has severe limitation that makes it generally unsuitable for cultivation. This soil is subject to the risk of erosion unless close-growing plant cover is maintained. This soil can support a moderate number of trees, however, this is limited by the steep slopes.

163B - Brainerd sandy loam, 1 to 4 percent slopes.

This nearly level or gently sloping, moderately well - drained soil is on crests and side slopes on drumlins and ground moraines. The surface layer is very dark grayish brown sandy loam. In some areas, the surface soil has more sand. In other places the surface soil is thinner and has a lower content of organic matter because of erosion. In other areas, it is very stony.

The subsurface layer is brown, mottled sandy loam. The subsoil is brown, mottled sandy loam. The underlying material is brown, mottled sandy loam.

Permeability is moderately rapid or moderate in the upper part and slow or very slow in the lower part. The available water capacity is low. Surface runoff is slow or medium. The content of organic matter is low to moderate. A perched water table is found at a depth of 1.5 to 2.5 feet.

This soil has moderate limitations that reduce the choice of plants or that require moderate conservation practices. The main hazard is the risk of erosion unless close-growing plant cover is maintained. This soil can support a moderately high number of trees with little or no restrictions.

165 - Parent loam.

This nearly level, poorly - drained soil is on broad flats and in swales or drainageways on moraines. The surface layer is black loam. The subsurface layer is very dark gray, mottled loam. The subsoil in a downward progression is dark grayish brown, mottled loam; grayish brown, mottled sandy loam; and brown, mottled sandy loam. In some areas the surface soil and subsoil have more sand. In other areas the surface soil is very stony.

Permeability is moderate in the upper part and slow or very slow in the lower part. The available water capacity is low. Surface runoff is slow. The content of organic matter is high or very high. The water table is found at a depth of 0.5 foot to 2.5 feet.

This soil has severe limitations that reduce the choice of plants or that require special conservation practices, or both. Water in or on the soil interferes with plant growth.

182A Oesterle sandy loam, 0 to 1 percent slopes

This nearly level, somewhat poorly - drained soils is on plane or slight convex rises on outwash plains and stream terraces. The surface layer is very dark brown sandy loam about 6 inches thick. The next 3 inches is grayish brown sandy loam that has tongues of brown sandy loam. The subsoil is brown, mottled sandy loam about 14 inches thick. The underlying material to a depth of about 60 inches is reddish brown very gravelly coarse sand in the upper part and very gravelly sand in the lower part.

Permeability is moderate or moderately rapid in the upper part and rapid or very rapid in the lower part. The available water capacity is low. Surface runoff is slow. The content of organic matter is moderate or high. The seasonal high water table is at a depth of 1 to 3 feet.

This soil is well suited to trees that are tolerant of moderate wetness. Windthrow is a hazard during storms because trees in areas of this soil have a shallow root system.

217 - Nokasippi mucky loamy fine sand

This nearly level, very poorly - drained soil is in shallow depressions, on flats, and in drainageways on ground moraines and drumlins. It is subject to ponding. The surface layer is black, mottled mucky loamy fine sand. The subsurface layer is very dark gray, mottled loamy fine sand. The subsoil, in sequence downward, is grayish brown, mottled loamy fine sand; grayish brown, mottled sandy loam; and brown, mottled sandy loam. The underlying material is brown, mottled sandy loam.

Permeability is rapid in the upper part and slow or very slow in the lower part. The available water capacity is low. Surface runoff is slow to ponded. The content of organic matter is moderately low to very high. The seasonal high water table is at a depth of 1 to 2 feet.

This soil has severe limitations that makes it generally unsuitable for cultivation.

218 - Watab loamy fine sand

This nearly level, somewhat poorly - drained soil is on side slopes, on broad flats, and in swales on drumlins and ground moraines. Individual areas are irregular in shape and range from 5 to 100 acres in size.

The permeability is rapid in the upper part of the Watab soil and slow or very slow in the lower part. The available water capacity is low. Surface runoff is slow. The content of organic matter is low or moderately low. A perched water table is at a depth of 1.5 to 3.0 feet. Wetness is the main limitation. Soil blowing is a hazard. This soil is wet in spring and after heavy rainfall because of the perched water table.

This soil is well suited to many upland tree species. Northern red oak and quaking aspen are the most common species. Other important tree species are paper birch, ash, and American elm. Most communities are mixed northern red oak and quaking aspen. The firm subsoil restricts the rooting depth of some plants. Seedling mortality is high because of the wetness.

458A - Menahga loamy sand, 0 to 2 percent slopes

This nearly level, excessively - drained soil is on plane or slightly convex rises on outwash plains and valley trains. The surface layer is very dark gray loamy sand. The subsoil is brown sand. The underlying material is light yellowish brown sand.

Permeability is rapid. The available water capacity is low. Surface runoff is slow. The content or organic matter is low or moderately low.

The soil has very severe limitations that reduce the choice of plants or that require very careful management, or both. The soil is limited mainly because it is shallow, droughty, or stony. The soil can support a moderately high number of trees due to its sandy texture.

458B - Menahga loamy sand, 2 to 8 percent slopes

This gently undulating or rolling, excessively - drained soil is on knolls and side slopes on outwash plains and valley trains. The surface layer is very dark grayish brown loamy sand. The subsurface layer is grayish brown loamy sand. IT is brown in the upper part and yellowish brown in the lower part. The underlying material is light yellowish brown sand.

Permeability is rapid. The available water capacity is low. Surface runoff is slow or moderate. The content or organic matter is low.

The soil has very severe limitations that reduce the choice of plants or that require very careful management, or both. The soil is limited mainly because it is shallow, droughty, or stony. The soil can support a moderately high number of trees due to its sandy texture.

1946 - Fordum-Winterfield complex

Found along the floodplain of Pike Creek, these nearly level soils are on flats and in swales on floodplains. The Fordum soil is poorly - drained or very poorly - drained, and the Winterfield soil is somewhat poorly - drained. These areas are approximately 60 percent Fordum soil and 30 percent Winterfield soils. The Fordum and Winterfield soils are subject to frequent flooding, and the Fordum soil is subject to ponding. These soils occur as areas so intricately mixed or so small in size that separating them is not practical.

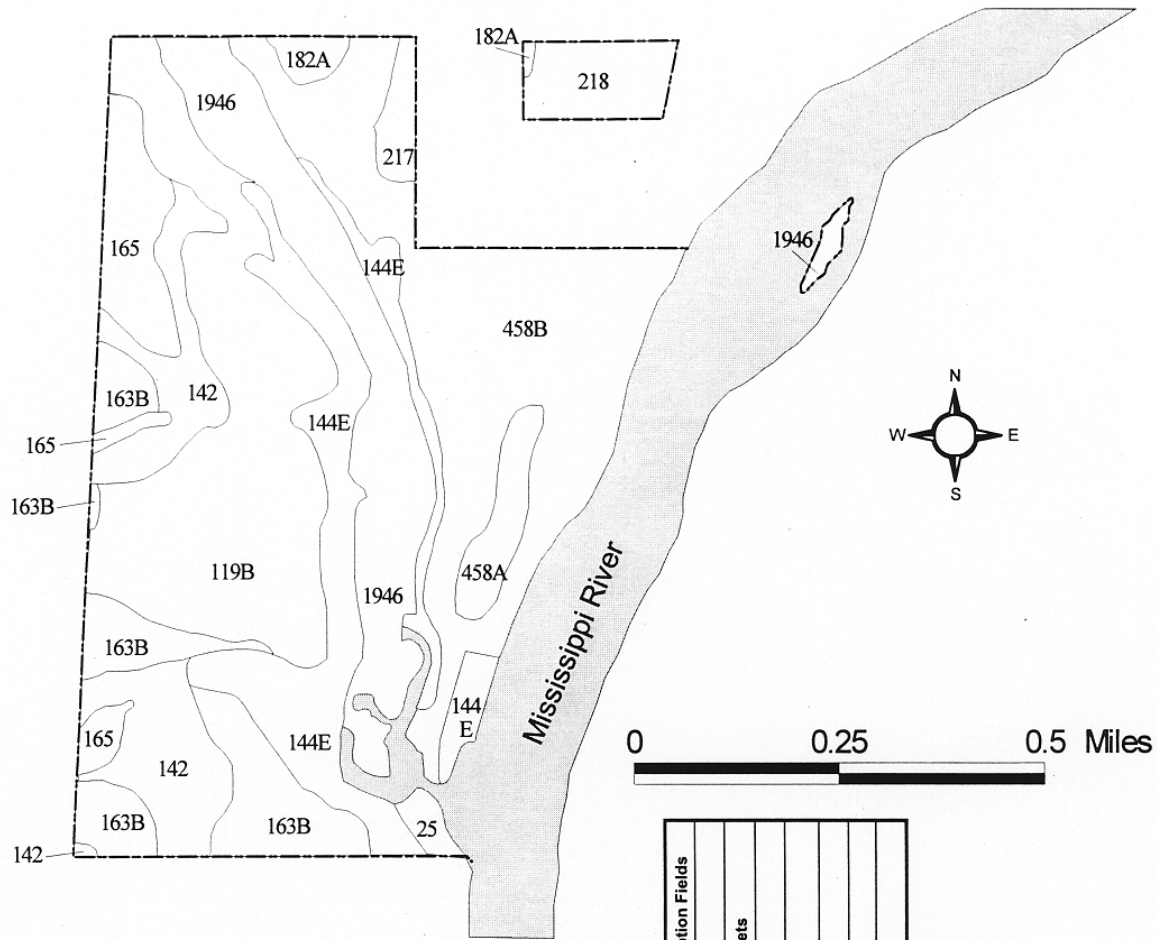
The Fordum soil has a surface layer of black silt loam. The upper part of the underlying material is very dark gray, mottled, stratified silt loam and fine sand. The lower part is grayish brown mottled sand.

The Winterfield soil has a layer of black loamy sand. The upper part of the underlying material is very dark brown, stratified loamy sand and loamy fine sand. The lower part is dark grayish brown, mottled sand.

Permeability is moderate or moderately rapid in the upper part of the Fordum soil and rapid or very rapid in the lower part. It is rapid in the Winterfield soil. The available water capacity is high in the Fordum soil and low in the Winterfield soil. Surface runoff is very slow or ponded on the Fordum soil and slow on the Winterfield soil. The content of organic matter is high or very high in the Fordum soil and moderately low or moderate in the Winterfield soil. In areas of the Fordum soil, the seasonal high water table is 1 foot above to 1 foot below the surface. In areas of the Winterfield soil, it is at a depth of 0.5 foot to 1.5 feet.

These soils have severe limitations that make them generally unsuitable for cultivation. The Fordum soil can support a moderate number of trees, however, this is limited by the excess water in or on the soil. The Winterfield soil can support a moderately high number of trees also limited by the excess water in or on the soil.

Charles A. Lindbergh State Park Soils Map



Map Unit	Description	Slope	Permeability*	Water Table	Septic Tank Absorption Fields	Buildings**	Local Roads & Streets	Camp Areas	Picnic Areas	Playgrounds	Paths & Trails	Overall Suitability
25	Becker fine sandy loam	-	0-32"/2.0-6.0	4.0-6.0	S	S	M	L	L	L	L	L
119B	Pomroy loamy fine sand	1-6%	0-26"/6.0-20	>6.0	S	L	L	M	M	M	M	M
142	Nokay loam	-	0-6"/0.6-2.0	1.0-3.0	S	S	S	S	M	S	M	S
144E	Flak sandy loam	15-25%	0-15"/2.0-6.0	>6.0	S	S	S	S	S	S	M	S
163B	Brainerd sandy loam	1-4%	0-11"/2.0-6.0	1.5-2.5	S	S	M	M	M	M	M	M
165	Parent loam	-	0-26"/0.6-2.0	0.5-2.5	S	S	S	S	S	S	S	S
182A	Oesterle sandy loam	0-1%	0-23"/0.6-6.0	1.0-3.0	S	S	S	S	M	S	M	S
217	Nokasippi mucky loamy fine sand	-	0-27"/6.0-20	1.0-2.0	S	S	S	S	S	S	S	S
218	Watab loamy fine sand	-	0-30"/6.0-20	1.5-3.0	S	S	M	M	M	M	M	M
458A & B	Menahga loamy sand	0-8%	0-60"/6.0-20	>6.0	S	L	L	M	M	M	M	M
1946	Fordum-Winterfield complex	-	0-4"/2.0-6.0	0.5-1.5	S	S	S	S	S	S	S	S

Chart Legend-Soils Suitability/Characteristics

L = (Low) Limitations for a stated use are minor and can be overcome easily.

M = (Moderate) Limitations for a stated use can be overcome by special planning, design, or intensive maintenance.

S = (Severe) Limitations for a stated use generally require a major soil reclamation, special design, or intensive maintenance.

*Permeability measured in inches per hour.

**Based on buildings with a basement or foundation.

Natural Communities

The park is located in the Anoka Sand Plain landscape subsection as defined by the DNR Ecological Classification System.

The vegetation, according to the General Land Office (GLO) survey of 1858, was described as scattering timber (a few oaks and pine), mixed hardwoods/pine (oak, sugar maple, pine), and brushy prairie (with few trees). Other vegetation features included marsh, willow marsh (willow and alder bushes), and the area along the Mississippi River, which contained sparse trees and brush.

The Phase 2 Forest Inventory of 1982 (now referred as cooperative stand assessment) identified the following vegetation communities within the park: oak (136 acres); northern hardwoods (6 acres); white pine (13 acres); aspen (22 acres); upland brush (14 acres); and upland grass (70 acres).

This inventory reflects the same composition of vegetation that was present during pre-settlement times (circa 1850), however, the communities may not be in the same location as they were historically, due to the impacts of settlement and the suppression of natural fires.

Fires rolled in from the prairies to the west, maintaining prairie openings, brushy prairies, marshes, and the scattered forest, which may have been savanna. The area adjacent to the Mississippi River, with its wetter soils, marshes and river communities, tended to suppress and slow the fires.

The park is indeed an interface between the prairies of the west, the deciduous forests of the east and south, and the pines of the north. All of these biomes are represented in the park.

The vegetation of the park should be viewed on the whole, not as individual communities or species. Diseases, insects, and natural forces should be evaluated and managed accordingly.

While there are no designated old growth communities in the park, there are old individual trees. Stands containing old individual trees will be reviewed against the DNR Old Growth Forest Guidelines to determine if they are candidate old growth forest stands. Red and bur oak, up to 200 years old, and white pine over 200 years old, occur within the park. These trees merit protection. Natural regeneration is possible and could be enhanced by seed collection and planting. Seedlings would need to be protected from the deer, which frequent the park.

Hazard Tree Management

Hazard tree management is governed by State policy. Campgrounds have a priority for hazard tree management because they are occupied on a semi-permanent basis. Trees in the campgrounds and picnic areas should be evaluated to determine if something other than complete removal would be acceptable. Trails are not evaluated for hazard trees other than to keep the trails open. Fallen trees will be removed for that purpose.

The plant communities identified in the park are fire driven or fire originated. A prescribed fire program should be developed and initiated to stimulate this natural process.

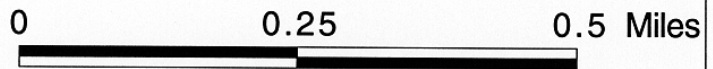
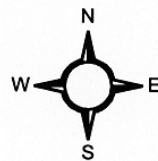
Charles A. Lindbergh State Park Original Vegetation-1858 General Land Office Survey



Statutory Park Boundary (1998)

Original Vegetation Types

- Brushy Prairie
- Marsh
- Mixed Hardwoods-Pine
- Scattered Timber
- Sparse Trees and Brush
- Willow Marsh



Wildlife

Birds

While bird populations have not been officially surveyed in the park, the park manager has maintained an informal list of wildlife known to exist there. Sandhill cranes have been observed in the local area. The Mississippi River and its shores provide habitat for birds including mallards, teal, woodducks, goldeneyes, mergansers, and Canada geese.

Birds and raptors should be encouraged by taking advantage of natural habitat niches. Larger hawks, owls and possibly eagles and ospreys can be attracted by preservation of large nest trees.

Caution should be taken to avoid creating grazing/browsing areas for Canada geese within the park. Artificial nesting structures should be avoided. Development of river front property in the park or on island property should avoid cleared shorelines and established paths, which lead to mowed open areas. Geese can be territorial during the nesting season, and can be very aggressive during the April-June brood rearing months when in contact with the public.

Mammals

A complete survey of the mammals present in the park is needed.

Bats are known to be present in the picnic shelter. Although a bat shelter was constructed several years ago, this structure has not been effective in luring the bats away from the picnic shelter.

The Park provides winter refuge to the deer in the area. These animals feed on the shrubs and small trees in the park, in particular, small white pine. An enclosure was constructed around a community of small white pine conducted in 1996 to prevent depredation on these trees.

A census of the deer population should be conducted and the population monitored. This could be accomplished through the establishment of a browse survey, which measures the amount of physical impact the deer have on the vegetation. State parks are game refuges. If a deer management hunt is deemed necessary it would be conducted in accordance with state park guidelines.

Following is a list of park wildlife observed by the park manager over the past 10 years.

Birds

American Goldfinch
American Kestrel
American Redstart
American Robin
American Woodcock
Bald Eagle
Barred Owl
Belted Kingfisher
Black-Capped Chickadee
Blackburnian Warblers
Blue Jay
Blue-winged Teal
Brown Creeper
Brown Thrasher
Brown-Headed Cowbird
Bufflehead
Canada Goose
Cardinal
Cedar Waxwing
Chipping Sparrow
Common Crow
Common Flicker
Common Goldeneye
Common Grackle
Common Merganser
Common Nighthawk
Common Snipe
Dark-eyed Junco
Double-crested Cormorant
Downy Woodpecker
Eastern Phoebe
Evening Grosbeak
Fox Sparrow
Goshawk
Gray Catbird
Great Blue Heron
Great Horned Owl
Green Heron
Hairy Woodpecker
Hermit Thrush

Birds (cont.)

Hooded Merganser
House Finch
House Sparrow
House Wren
Indigo Bunting
Mallard
Marsh Hawk
Mourning Dove
Northern Oriole
Northern Shrike
Osprey
Pied-billed Grebe
Pileated Woodpecker
Pine Siskin
Purple Finch
Red-bellied woodpecker
Red-breasted Nuthatch
Red-headed Woodpecker
Red-tailed Hawk
Red-winged Blackbird
Ring-necked Duck
Ring-necked Pheasant
Rose-breasted Grosbeak
Ruby-crowned Kinglet
Ruby-throated Hummingbird
Ruffed Grouse
Scarlet Tanager
Sharp-shinned Hawk
Starling
Tennessee Warbler
Tree Swallow
Trumpeter Swan
Turkey Vulture
Veery
White-breasted Nuthatch
White-crowned Sparrow
White-winged Sapsucker
Wood Duck
Yellow-bellied Sapsucker
Yellow-rumped Warbler

Mammals

Beaver
Coyote
Eastern Chipmunk
Eastern Cottontail Rabbit
Eastern Gray Squirrel
Fox Squirrel
Gray Fox
Little Brown Bat
Meadow Jumping Mouse
Mink
Muskrat
Northern Flying squirrel
Northern Pocket Gopher
Raccoon
Red Fox
Red Squirrel
River Otter
Striped Skunk
White-tailed Deer
Woodchuck
Woodland Deer Mouse

Reptiles and Amphibians

Numerous reptiles and amphibians are found in the park. Three are listed as endangered, threatened, or special concern species:

Western hognose snake (*Heterodon nasicus*) Special concern
Snapping turtle (*Chelydra serpentina*) Special concern
Blanding's turtle (*Emydoidea blandingi*) Threatened

Other snakes include eastern hognose snake (*Heterodon platirhinos*), smooth green snake (*Opheodrys vernalis*), bullsnake (*Pituophis melanoleucus*), brown snake (*Storeria dekayi*), redbelly snake (*Storeria occipitomaculata*), plains garter snake (*Thamnophis radix*), common garter snake (*Thamnophis sirtalis*).

Other turtles include spiny soft-shell (*Apalone spiniferus*), painted turtle (*Chrysemys picta*), and the map turtle (*Graptemys geographica*).

The prairie skink (*Eumeces septentrionalis*) is the only skink known in the park.

Salamanders include the blue-spotted salamander (*Ambystoma laterale*), tiger salamander (*Ambystoma tigrinum*), and Central newt (*Notophthalmus viridescens*).

Toads and frogs make up the largest group of amphibians present in the park. They include the American toad (*Bufo americanus*), Cope's grey treefrog (*Hyla chrysoscelis*), common grey treefrog (*Hyla versicolor*), spring peeper (*Pseudacris crucifer*), chorus frog (*Pseudacris triseriata*), green frog (*Rana clamitans*), northern leopard frog (*Rana pipiens*), mink frog (*Rana septentrionalis*) and the wood frog (*Rana sylvatica*).

Natural Pests

Pine bark beetle, bronze birch borer, tortrix, and other natural diseases and insects will be monitored by the park manager.

Deer ticks have been found in the area to the east and north of the park extending from Camp Ripley north of Little Falls to the St. Croix River Valley.

Mosquitoes are naturally occurring in this ecosystem and are especially troublesome in areas close to rivers and streams and in dense vegetation.

Exotic Plant Species

Exotic plant species are abundant in the park, apparently taking advantage of past human disturbances. The invasive nature of these species may be suppressing sensitive native species, making control essential in maintaining the natural vegetative community. Following is a list of the invasive, introduced species and recommended methods of control currently in use.

European Buckthorn (*Rhamnus cathartica*)

This tall shrub or tree, that can reach 20 feet in height and 10 inches in diameter, was introduced from Europe in the mid-1800's. This plant is dioecious with the female and male flowers occurring on separate plants. The female plants are identified by the clusters of black, round fruit that ripens in the fall. This species is a problem in open forest environments, under individual trees in a prairie setting, and in riparian areas. Birds eat the seeds, which are scarified in their digestive tract and distributed in the feces. Buckthorn is an aggressive species and easily out-competes other vegetation. It is not habitat-selective and can grow in any type of soil. Once a female tree produces seeds, dense thickets of buckthorn area easily formed.

Prescribed fire in early spring and fall may kill seedlings and larger stems, and may top-kill mature buckthorn although this has had mixed results. Small buckthorn, up to 1/2 inch in diameter, can be easily pulled. This may not be desirable in an area of archaeological concern.

Girdling or cutting the stems may not be effective unless followed by an application of herbicide. Buckthorn is notorious for its ability to resprout (sucker).

Chemical treatment has proven the most effective for the control of buckthorn. Roundup has been used with mixed results using 20-25% active ingredient at the time of cutting, followed by a recutting of resprouts and an application of 1.5-% active ingredient. Garlon 3A has proven to be the most effective at 25 - 50% active ingredient sprayed with a low pressure hand sprayer, a spray bottle, or sponge applicator, on freshly cut stumps.

Tartarian Honeysuckle (*Lonicera tatarica*)

Tartarian honeysuckle can live in a broad range of plant communities. The plants are not moisture and shade level specific. This honeysuckle was introduced in the late 1700's as an ornamental, usually in urban settings. However, this shrub was later used as a wildlife planting. It attracts large numbers of birds, which eat the berries, thereby spreading the seeds. These shrubs grow vigorously and compete with the native plants, however, they are not as aggressive as the buckthorns. The control methods used for buckthorn can also be used for honeysuckle, with similar results.

Canada Thistle (*Cirsium arvense*)

Canada thistle is a perennial forb, which is native to Europe. This plant is a noxious weed that thrives in disturbed areas. It also invades prairies and savanna type communities making the park an ideal area for this species to invade. The park is highly disturbed with little of the original vegetation still existing in a natural state. Further work on other exotic species will create additional disturbance, which will be attractive to this thistle species. Therefore, it is important that the location of thistles be known and plants be controlled to prevent spreading to new sites. These plants can be controlled in various ways including cutting, burning, and chemical control. The ideal time to cut this species is when the plant is in the very early bud stage. This is when food reserves are at their lowest and these reserves are in the part of the plant that will be removed. Burning is also effective when the plant is in early bud stage. Usually this is a late spring burn (late May-early June) at this latitude. Early burns can actually enhance the species by encouraging sprouting and reproduction. Healthy, dense vegetation can out-compete thistles.

Spot treatment of thistles is effective when using a foliar application of a 1-2% active ingredient solution of Roundup in the spring when plants are 6-10 inches tall. Other chemicals may be developed in the future which are more species specific and better designed for thistle control.

Siberian Peashrub (*Caragana arborescens*)

This shrub was planted in the campground as a visual screen between campsites. There is little information available on its invasive nature. This cultivar, not native to the United States, is an upright shrub, with showy flowers in spring. It is often used as a windbreak or screen. This plant likes well-drained soils and full sun. It is described as ideal for difficult growing conditions, especially drought, cold winter temperatures, and poor soil conditions.

Eurasian Water Milfoil (*Myriophyllum spicatum*)

This non-native milfoil has been observed in lakes around Brainerd, and in the Twin Cities metropolitan area. It grows best in fertile, fine-textured, inorganic sediments. While not a problem in the Little Falls area at this time, precautions should be taken to inform the public and raise the awareness of boat owners to the necessity of removing weed fragments from their boats when leaving any waterway.

Purple Loosestrife (*Lythrum salicaria*)

This perennial herb is found in wetlands, where it has invaded as an escapee from gardens. The habitat in which it is found most commonly include marshes, stream margins, alluvial floodplains, sedge meadows, and wet prairies. Because of the proximity of the park to the City of Little Falls, the importance of public education should be emphasized. The wetland areas around the park and the Little Falls community should be monitored for outbreaks.

Aquatic Exotic Species

Zebra Mussels (*Dreissena polymorpha*) - Mississippi River

Zebra mussels have been found as reproducing populations as far north as Lake Pepin (Goodhue County) and have occurred as far north as St. Anthony Falls in 1994. They have not been found in Morrison County at this time (1997).

Waters/Fisheries

Groundwater

The park obtains potable water from the City of Little Falls, which is obtained from a surficial sand and gravel aquifer.

Mississippi River

The park borders a 400-mile long segment of the Mississippi river that has been proposed for inclusion in the National Wild & Scenic Rivers System. This section of the river also received alternative protection by the Mississippi Headwaters Board, which protects it's scenic and natural characteristics.

The Mississippi River below the dam at Little Falls in the area of the state park, is a cool water stream. During most of the year, the secchi disk reading, which measure water clarity, is less than 2 feet. However, during the lower flow levels in the fall of the year, readings reach 4-5 feet. This stretch of the river contains high quality habitat for smallmouth bass, walleye, and rock bass. Muskie and northern pike populations aren't as high but the quality of the population is. Black crappie are occasionally caught while largemouth bass are rarely found in the area. Warm water fish such as yellow bullhead, black bullhead, and bluegill are rarely caught in this area. Burbot are found both in Pike Creek and the Mississippi River.

Shoreline Fishing opportunities on the Mississippi River from the banks are somewhat limited. Additional fishing opportunities may be afforded by obtaining access to the banks of the

Mississippi River just north of the present park boundary. A privately owned stairway traverses the slope from South Lindbergh Drive down to the river. Providing full accessibility to the river at this location would be extremely difficult due to significant grade change along a narrow strip of land between the river and the road. Access to the river could be made more available to the disabled at the confluence of Pike Creek with the Mississippi River. Now that the park has canoe rental available, additional fishing opportunities are afforded to park visitors.

Fishing and/or canoeing clinics held in the park, sponsored by a local fishing club and DNR, should be pursued. Newcomers to the river may be somewhat deterred due to the river current.

Major floods along the Mississippi River are caused by heavy rains, spring snowmelt & ice jams, have occurred in 1950, 1952, 1965, 1969 and 1972.

Pike Creek

Pike Creek was surveyed in the late 1980's and early 1990's by the Native Fish Association of Minnesota. Species of fish found in this tributary of the Mississippi River include the families:

Cyprinidae (minnows)

creek chub (*Semotilus atromaculatus*), hornyhead chub (*Nocomis biguttatus*), common shiner (*Notropis cornutus*), spotfin shiner (*Notropis spilopterus*), sand shiner (*Notropis stramineus*), bluntnose minnow (*Pimephales notatus*), central stoneroller (*Campostoma anomalum*), blacknose dace (*Rhinichthys atratulus*).

Cottidae (sculpins)

mottled sculpin (*Cottus bairdi*)

Ictaluridae (catfishes)

tadpole madtom (*Noturus gyrinus*), yellow bullhead (*Ictalurus natalis*), black bullhead (*Ictalurus melas*)

Umbridae (mudminnows)

central mudminnow (*Umbra limi*)

Percidae (perch)

Johnny darter (*Etheostoma nigrum*)

Centrarchidae (sunfishes).

Bluegill (*Lepomis macrochirus*), rock bass (*Ambloplites rupestris*)

Endangered, Threatened, and Special Concern Species

The park has not been inventoried for the presence of endangered, threatened, and special concern **plant** species.

The park is home to the following endangered, threatened, and special concern **animal** species.

Blanding's turtle (*Emydoidea blandingi*) Threatened
Western hognose snake (*Heterodon nasicus*) Special concern
Snapping turtle (*Chelydra serpentina*) Special concern

Ecosystem-Based Management Philosophy

This plan suggests that the natural and cultural resources of the park be managed on an ecological basis. An ecosystem is where things live - it is the interacting group of physical elements, soil, water, plants, animals, and human communities that inhabit a particular place. All of these elements and their interactions need to be considered in developing goals and plans for management. Ecosystem-Based Management (EBM) views people as part of the entire community. Maintaining a healthy ecosystem is the best way to meet long term human needs as well as those of other organisms in the community. Managing on an ecosystem basis integrates scientific knowledge and human values toward a general goal of protecting the health of the ecosystem for the long term. (Grumbine, 1994). A key measure of the health of ecosystems is the level of diversity of plants and animals native to the area. A higher diversity of native plants and animals probably indicates a healthier ecosystem.

The DNR has a goal of managing natural and cultural resources in a way that is sustainable. This goal is approached by taking a broader perspective and addressing ecosystem management rather than focusing only on individual plant or animal species. The goal of this park planning process is to decide how to manage the park to sustain healthy ecosystems for the future. With this EBM perspective, we look at the park not as an island, but as an integral part of a larger ecosystem.

Resource Management Objectives

The following objectives will help to guide future park management decisions.

Environmental

- Protect existing wetlands, shorelands, and riparian areas.
- Protect and enhance habitats for plant and animal species that are listed as endangered, threatened, or special concern.
- Identify and control invasive exotic plant and animal species.
- Manage and maintain examples of each natural plant community.
- Sustain functioning ecosystems and maintain biological diversity.
- Identify and restore degraded natural communities and ecosystems.

Community

- Raise the level of understanding of cultural and environmental issues. Communities come together and learn to work together through cultural and environmental activities.
- Maintain natural communities that offer opportunities for solitude. Stress is a serious issue in modern society, with solutions centered around leisure and relaxation.
- Manage natural resources on a landscape and ecosystem basis. Parks, open spaces, and protected natural environments contribute to the health of our communities.
- Identify, monitor, and manage historical and cultural resources in cooperation with the MHS and the Morrison County Historical Society.

Economic

- Park development should be completed in a manner compatible with resource management and protection. Many studies have shown that financial investment in recreation projects pay dividends throughout the community.
- Use natural resources and public funds efficiently and appropriately. Direct future use towards areas in the park with existing infrastructure and services. Habitat protection and recreation is often the highest and best use of lands that are too fragile for development (steep slopes, floodways, etc.).

Resource Management Actions

Management actions center on restoring native vegetation systems and restoring natural processes. Interpretation of soils through ECS will be important in determining management strategies for sites. The following actions are recommended:

Natural Resources

- ◆ ***Create a long-term vegetation management plan for the park, using available resources information.*** All resource work will be coordinated with and reviewed by the appropriate management staff.
- ◆ ***Determine areas for old growth, future old growth, prairie restoration, vista management, and young hardwoods growth.*** A mix of prairie and hardwoods can be restored and maintained in the park. Old fields should be prioritized and restored to prairie or young hardwoods.
- ◆ ***Participate in local and regional planning efforts to sustain healthy ecosystems.***
- ◆ ***Protect Federal and State listed species and manage their habitats for optimum sustainability.***
- ◆ ***Plant native shade trees and shrubs in campgrounds and picnic areas to replace those hazard trees, which have been removed.***
- ◆ ***Implement an eradication and control program for invasive exotic plant species.*** Continually review literature for new, more effective and environmentally sensitive methods for control of exotics that may become available for use.
- ◆ ***Interpret resource management practices for public interest and education.*** Incorporate concepts of biodiversity, ecosystem management, and watershed management into park interpretive programs and displays.
- ◆ ***Monitor species and natural communities for indications that reflect changes in populations and biological health.*** Indicator species should be identified.
- ◆ ***Reintroduce fire as an active part of the system in accordance with DNR Operational Order # 47- prescribed Fire Guidelines.*** As prairie areas and hardwood stands are established, prescribed burning will be used as a tool to maintain and enhance these areas. Reintroducing disturbances is often vital to restoring ecosystems.
- ◆ ***Reduce erosion in the park by enforcement of trail use rules and education of users.*** Consider trail relocation where needed for erosion control.
- ◆ ***Conduct periodic water quality testing in conjunction with fish surveys.*** In cooperation with area schools and others monitor runoff from Pike Creek.
- ◆ ***Control invasive aquatic species including purple loosestrife and Eurasian Milfoil.***
- ◆ ***Protect natural spawning habitat in Pike Creek and the Mississippi River.***
- ◆ ***Map the location of significant old specimen trees.*** Provide information regarding these trees as appropriate to park users.
- ◆ ***Participate in the statewide White Pine Initiative.***
- ◆ ***Develop a plan for the replacement of hazard trees, either by re-planting or by cutting in a manner which would allow suckering.*** Prune suckers to allow for the best replacement.
- ◆ ***Conduct a bird survey in the park.*** Work with the Regional Resource Specialist to develop a program with a local Audubon Society, local schools, and St. Cloud State University to complete this inventory.
- ◆ ***Work with DNR Non-Game program to maintain knowledge of the reptiles and amphibians.*** Work with the local schools and St. Cloud State University to monitor populations in the park and the surrounding area.

- ◆ ***Inform park users of the importance of bats in the natural environment.*** Review literature to determine alternatives that may help solve the problems without causing injury.

-
- ◆ *Complete a mammal inventory, with the help of local schools and universities.*
 - ◆ *Work with the exotic species personnel in the control and monitoring of Zebra Mussels. Educate the public about specific control measures.*
 - ◆ *Maintain communications with the Little Falls Area Fisheries Office on the status of the fishery in the Mississippi River and Pike Creek. Work with non-game to maintain knowledge of the non-game fish in these streams, and other streams in the Pike Creek Watershed.*
 - ◆ *Develop educational programs with local schools and St. Cloud State University.*
 - ◆ *Complete an inventory of endangered, threatened, and special concern plants.*
 - ◆ *Conduct annual deer population and vegetative browse surveys. Implement periodic management hunts to control populations as necessary.*
 - ◆ *Report any signs or symptoms of natural pest outbreaks to the Regional Resource Specialist.*
 - ◆ *Work with landowner & public agencies to restore the original water quantity and quality of Pike Creek. Local water planning efforts should develop strategies to encourage landowners to work cooperatively on watershed improvement projects.*
 - ◆ *Inform the public of the presence of deer ticks and the potential for Lyme's disease through publications, posters and handouts.*
 - ◆ *Control Mosquitoes in the group camp only (by special request).*

Cultural Resources

- ◆ *Provide cultural interpretation at appropriate field sites, kiosks, and at the proposed park office.*
- ◆ *Conduct archeological exams before any earthwork is done in the park. If significant cultural resources are discovered during surveys, possible archeological mitigation may need to be reviewed to avoid or minimize impacts. The Minnesota State Historic Preservation Office should review all major proposed developments within the Historic District in order to maintain historical integrity.*

IV. RECREATION RESOURCES

Existing development within the park consists of the following:

Camping

- Semi-modern campground: 38 drive-in sites, 15 with electricity
- 1 sanitation building with showers
- 1 primitive group camp: 25 person capacity
- 1 backpack/canoe camp site along Pike Creek.

Trails

- Hiking: 6 miles
- Cross-country Skiing: 5.5 miles groomed
- Bike: None present

Day-Use

- Picnic Shelter (also serves as a winter trail shelter)
- 1 Drive-in water access
- 1 Carry-in water access
- 1 Roll-in dock
- 2 fishable rivers
- Volleyball courts
- Horseshoe pits
- Playground
- Canoe rental
- Snowshoe rental

Park Administration

- Visitor contact station
- Park service garage and shop area
- Trailer dump station
- Roads: approximately 1 mile of bituminous surface

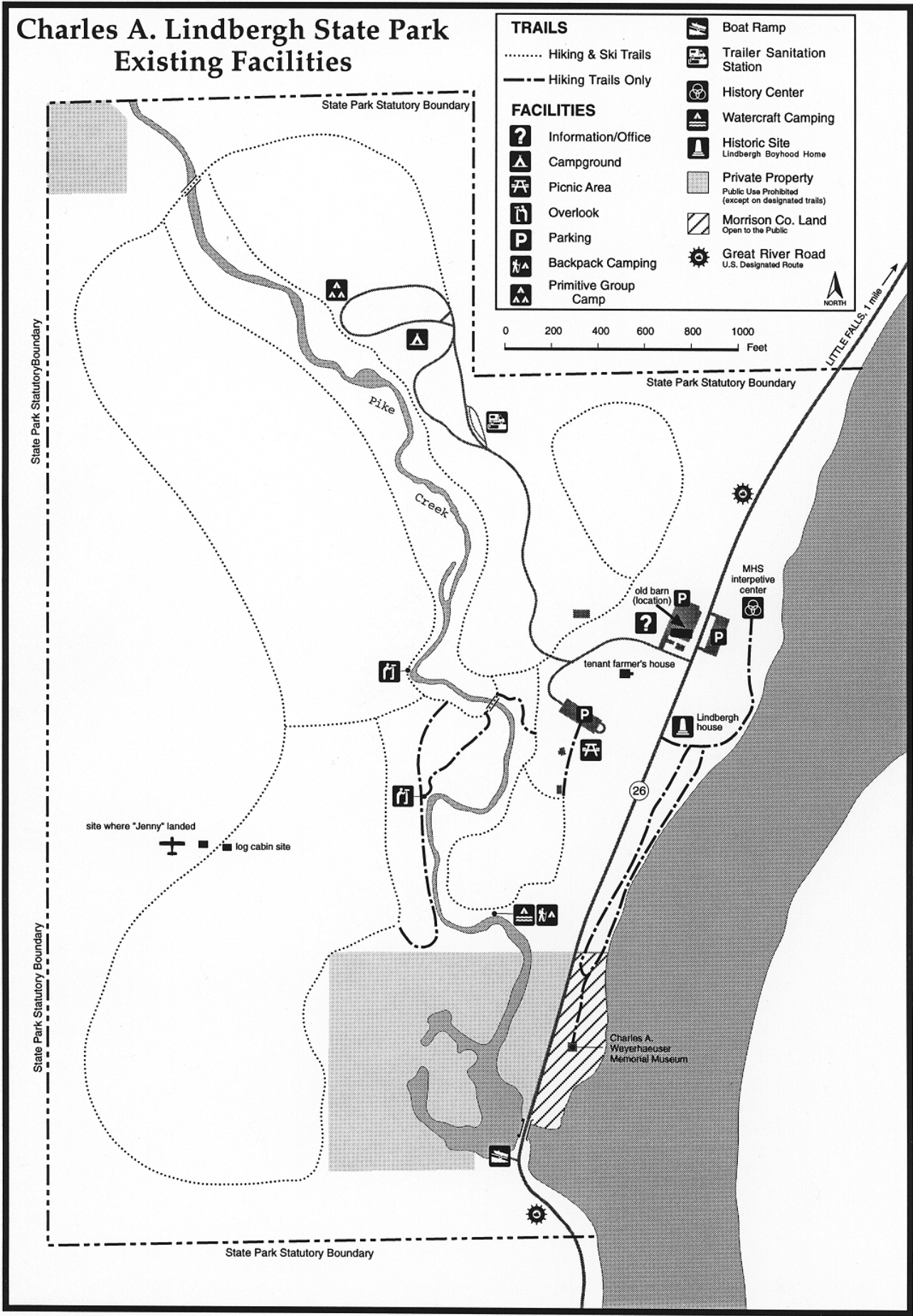
Recreation Management Objectives

The following objectives will help guide future park management:

Community

- Provide the highest level of access feasible for persons with disabilities, while maintaining the integrity of the park's natural and cultural resources.
- Offer and market a package of opportunities which include:
 - Camping and picnicking
 - Diverse cultural resources and history (Boyhood home of Charles A. Lindbergh, Jr. and Charles A. Weyerhaeuser Museum)
 - Fishing and canoeing opportunities on the Mississippi River
 - A variety of trail opportunities including hiking, skiing, and snowshoeing
 - Natural features including Pike Creek and the Mississippi River
 - A diversity of wildlife.
- Promote the safety and security of park users.
- Complement the character and economic vitality of the Little Falls Area.

Charles A. Lindbergh State Park Existing Facilities



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- Promote increased understanding, appreciation, and enjoyment of natural and cultural resources in the park by providing interpretive services.
 - Promote and participate in local events and festivals.

Economy

- Consider the long-term social, economic, and environmental costs of growth and development. Base decisions on sustainability over the long term.
- Use natural resources and public funds efficiently. Direct growth toward areas with existing infrastructure and services. Use land efficiently and appropriately.

Environmental

- Respect the limitation of the natural environment to support growth and development.
- Preserve and interpret the park's natural and scenic beauty, non-commercial atmosphere, and historic character.
- Minimize and concentrate park development in order to preserve the remaining portions of the park.

Proposed Development Actions

Site-specific, development plans will be completed based on the concepts outlined in this plan. Proposed developments outlined in this plan were generated after reviewing available information on park resources. Development recommendations are made after careful consideration of the natural and cultural resources and the recreation management objectives of this plan. Plans may warrant alterations as more data become available. Development will only take place after a detailed physical analysis and resource assessments have been conducted.

The Proposed Development and Proposed Bike Trails map shows the location of major proposed features.

Hiking and Ski Trails

Trail lengths, location, and conditions were addressed during the planning process. Signing needs ongoing evaluation in order to avoid trespassing onto private property. Trail maps should indicate that MHS and MCHS property are "open" for hiking.

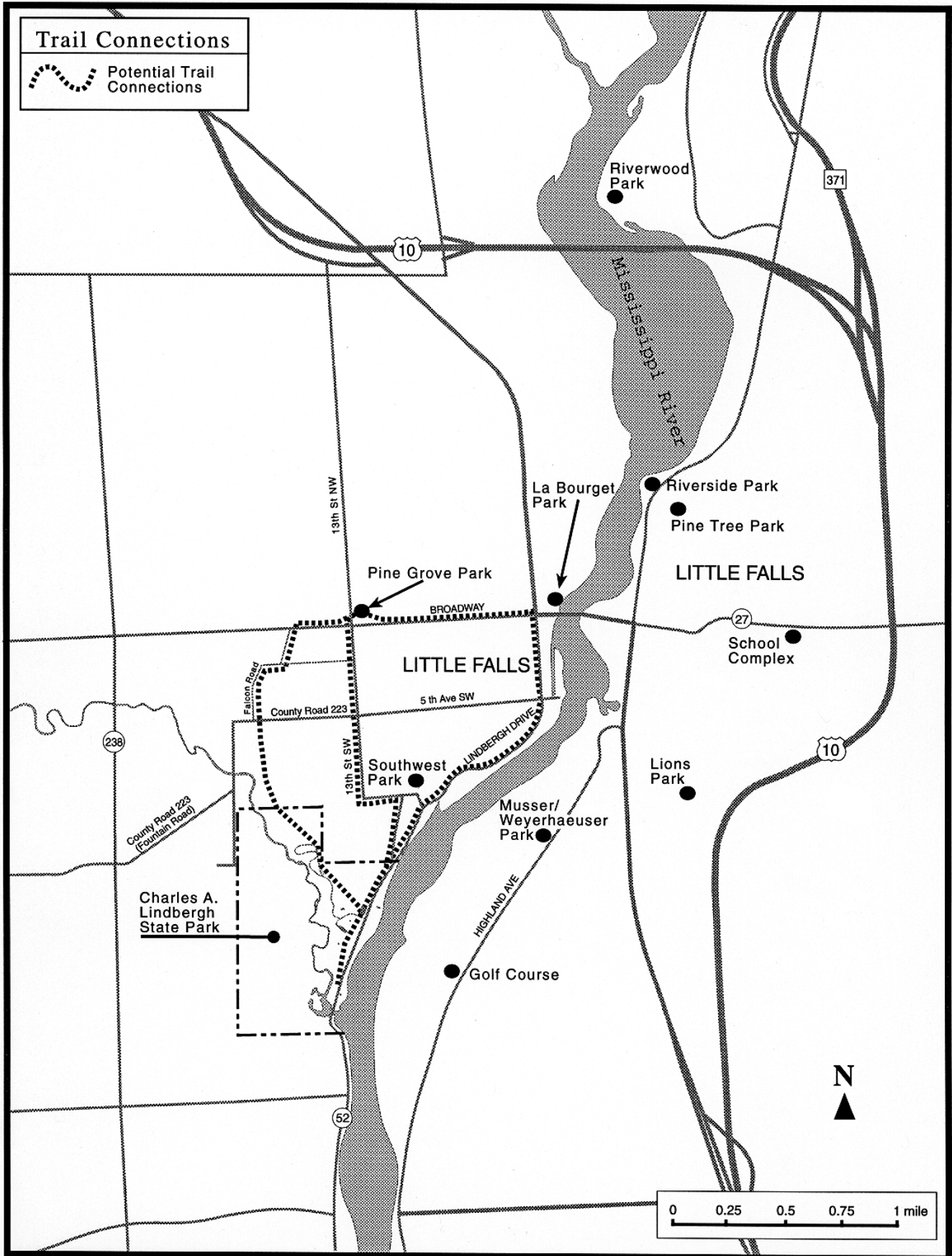
Trail erosion is a concern in certain areas. In such areas consideration should be given to minor realignment to avoid further problems.

- ◆ ***Improve signage, especially where trails cross roads. Pedestrians crossing South Lindbergh Drive should be directed to cross at designated areas.***
- ◆ ***Develop an interpretive trail loop leaving from the picnic area.***
- ◆ ***Develop a short accessible trail loop from the picnic area down to Pike Creek and back.***

Ski trails will cover the same mileage with minor modifications to enhance user safety.

Bike Trails

A common complaint among state park users is the lack of bike-riding opportunities in or adjacent to the park. Presently there are no designated trails from the park to any attractions within the city of Little Falls.



Two different trail segments are proposed. Both segments complement the 1995 Comprehensive Trail Plan completed for the city of Little Falls.

- ◆ ***Develop a bike trail parallel to County Road 52, beginning at the northeast corner of the park and extending south to the Weyerhaeuser Museum property.*** This trail, (approximately 3,400 feet long) would be located west of the road as shown on the proposed development map. This would be preferable to a road shoulder trail, due to safety and aesthetic concerns.
- ◆ ***Develop a bike and hiking trail connecting the state park with Pine Grove park and downtown Little Falls.*** The trail, built in cooperation with the local units of government and Private landowners, would help connect the state park to attractions within the city. The trail would extend from the north side of the state park to TH 27, then to Pine Grove park and downtown Little Falls. In order to complete the loop, a bike trail could be located along city streets, such as 11th St. SW.

In addition to the trailway itself, it would be desirable to acquire additional land adjacent to Pike Creek in order to preserve the natural aesthetic character of the area. The corridor would also help to preserve valuable wildlife habitat, and would enhance water quality in Pike Creek.

Camping

The main campground offers secluded, semi-modern camping, electric hook-ups, and shower building. The group camp is relatively small, with a 25-person capacity.

- ◆ ***Relocate the group camp(as shown on the Proposed Development map) to the north of the existing site to provide for more privacy.***
- ◆ ***Add a camper cabin to the existing campground.*** Start with 1 (one) handicapped accessible cabin and then evaluate the need for additional cabins.

Consideration should be given to the elimination of one or two campsites that are located fairly close to the banks of Pike Creek. This would allow for trail relocation further from the bank of the creek.

Fishing

- ◆ ***Provide more opportunities for shore fishing at the existing boat access and the property north of the park on the Mississippi River.*** The latter will require land purchase or an easement.

Modifications to South Lindbergh Drive are anticipated in the next 2 to 5 years. All three agencies (DNR, MHS, MCHS) and the CAC recommend that a rural design section (no curb and gutter) be used through the park. Every effort to preserve the existing treeline along the route should be made.

County and city staff, recommend that curb and gutter be used through the park. This issue will be resolved during the roadway preliminary design phase.

The current and projected traffic volume, according to the County Engineer are as follows:

Year	Traffic Count
1997	750
2017	1125

Lindbergh Farmyard Restoration

Considerable discussion during the CAC meetings centered around the original farmyard setting and what could be done to restore some of its original character. The Lindberghs used the site as a working farm, not a summer vacation home, which is often times the visitors perception. Some of the improvements would be on MHS land while others would be on DNR land. Suggestions by the CAC included the following:

- Reconstruct the hog house and chicken house
- Recreate the flower and vegetable gardens as well as the orchard
- Provide more interpretation at the Tenant Farmer's House
- Retain the current rural appearance of South Lindbergh Drive

New Visitor Contact Station

A new visitor contact station is proposed for the park, since the existing facility does not meet current use needs and is not fully accessible. The facility will likely contain offices, interpretive area, restroom, small meeting rooms and merchandise area.

The new visitor contact station will be sited with future interpretation of the old barn location kept in mind.

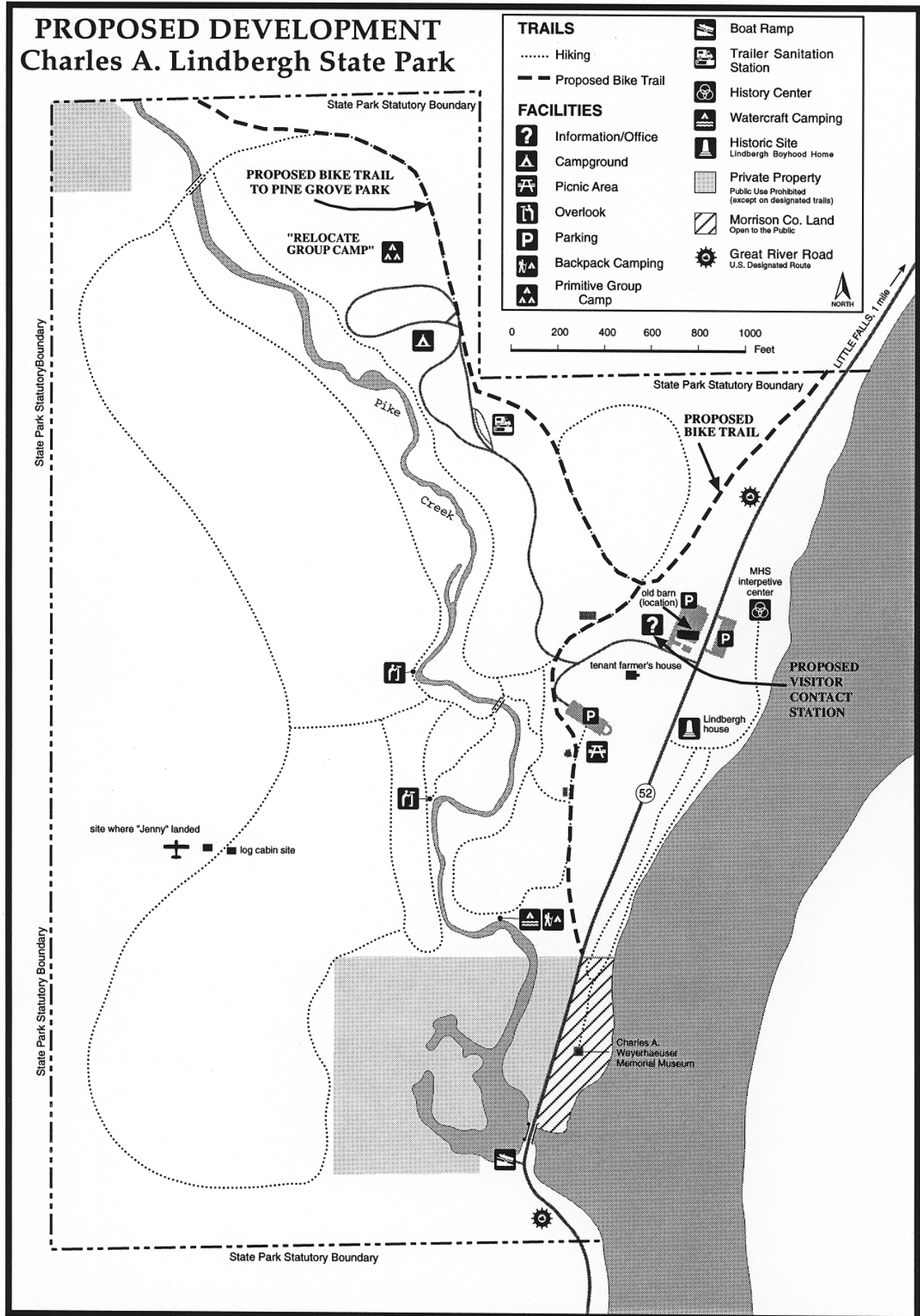
The house adjacent to the picnic grounds was used by the Lindberghs' tenant farmers until 1931, then used by park personnel as a residence until 1986. Since that time, it has sat vacant. Exterior restoration work on the house during the summer of 1997 has greatly enhanced the historical appearance of the structure. The house now looks very much a part of the original Lindbergh farmyard. The rolled roof matches the Lindbergh home, as does the gray lap siding. The removal of the 1960's west-side addition to the house is scheduled for the future. This will also add to the authenticity of the structure.



Tenant Farmer's House

The removal of the garage adjacent to the tenant farmer's house would also improve site aesthetics and would centralize shop facilities.

PROPOSED DEVELOPMENT Charles A. Lindbergh State Park



V. PARK BOUNDARY

Introduction

The statutory boundary of the park includes 338.96 acres. Of this total, the Minnesota Department of Natural Resources owns and administers 290 acres west of County Road 52. The Minnesota Historical Society administers 17 acres east of the County Road 52 where the Lindbergh house and History Center are located. Morrison County Historical Society owns and administers approximately two acres at the southeastern end of the park where their Museum is located. Morrison County also owns and administers the public access located at the southern end of the park at the confluence of Pike Creek and the Mississippi River.

Private ownership within the statutory boundary consists of two parcels totaling approximately 29 acres.

Recommended Land Management Actions

Additional land adjacent to the park, should be acquired or protected with easements in order to preserve valuable wildlife habitat, improve water quality in Pike Creek and allow for trail and campground improvements in the future. Refer to the following map for details.

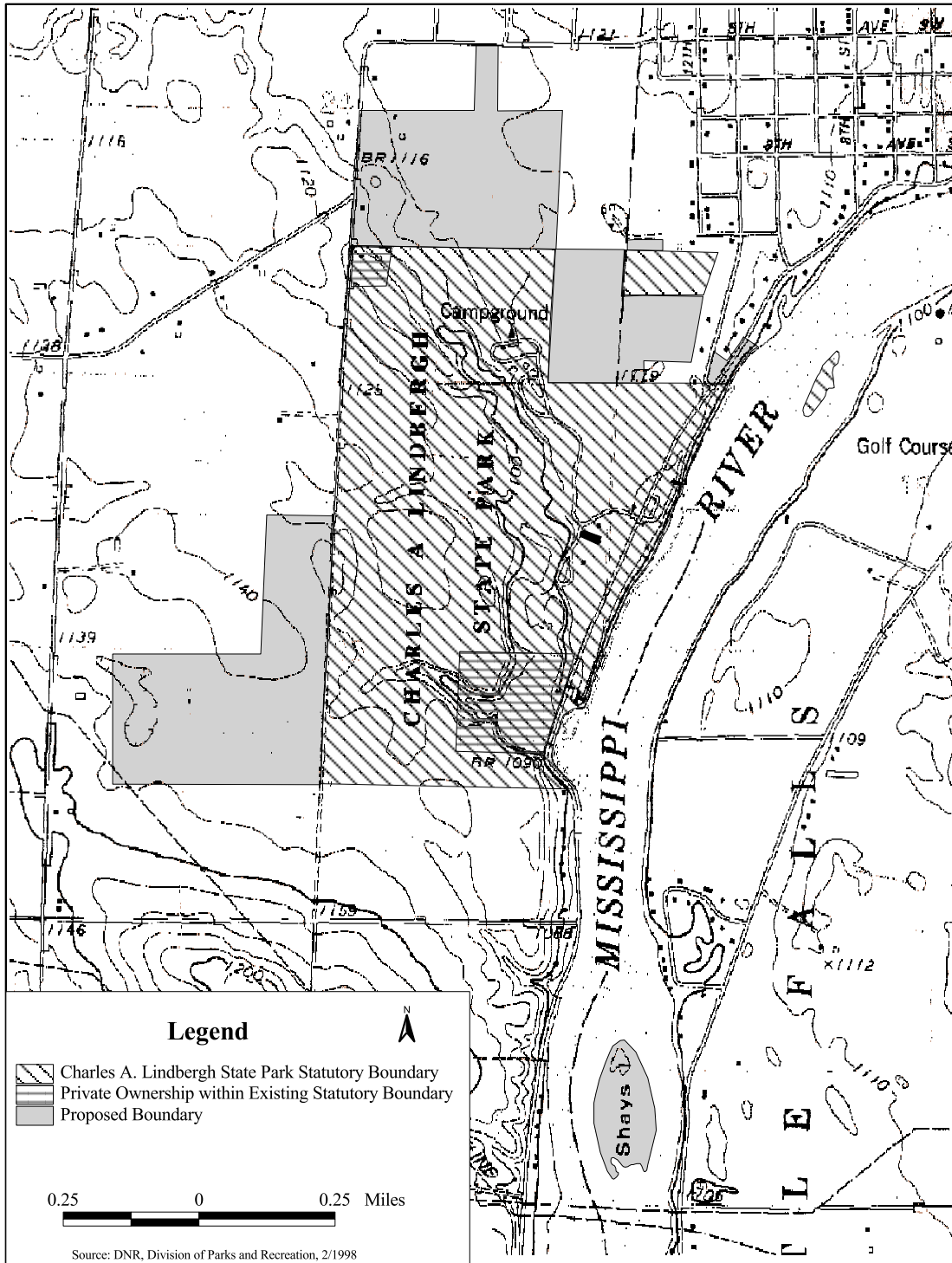
The 1981 park management plan recommended a boundary expansion of approximately 320 acres, including acquisition to the north, west, and south of the existing boundary. This (1998) plan recommends a boundary expansion of approximately 180 acres.

The following land acquisition and protection measures are recommended:

- ◆ ***Seek legislation to expand the park statutory boundary***
- ◆ ***Acquire Shay's Island from the current owner - Minnesota Power and Light***
- ◆ ***Work with county, township, city officials, and various conservation groups to promote ecosystem management on private property adjacent the park for wildlife habitat and watershed protection. Develop educational materials and encourage partnerships to protect water quality, woodlands, wetlands, and prairie habitat.***
- ◆ ***Explore the use of conservation easements on private land around the park as a landscape preservation tool. Conservation easements would allow existing uses to continue but would limit further development.***

Charles A. Lindbergh State Park

Existing & Proposed Statutory Park Boundaries



VI. INTERPRETIVE SERVICES

The Interpretive Mission of the Division of Parks and Recreation is to provide accessible interpretive services which create a sense of stewardship for Minnesota's natural and cultural heritage by illuminating the changing relationships between people and landscapes over time.

The Division of Parks and Recreation provides interpretation and visitor services which highlight the educational values inherent in state park visitation. It is believed that these services, when professionally developed, promote a strong sense of resource stewardship in visitors. Each state park unit is an unique composite of natural and cultural resource values. Where these values are identified, understood and interpreted, the destination character of each state park is made obvious.

Interpretive services began in Minnesota State Parks in 1941 when, through the Works Progress Administration (WPA), guide services were offered at Itasca State Park. This WPA program lasted only one year, when it had to be discontinued as a result of World War II. In 1947, Walter Breckenridge, of the University of Minnesota's James Ford Bell Museum, met with state parks director U. W. Hella and worked out an agreement for the museum to provide interpretive programs in certain key state parks. Programming under this agreement continued until 1960, when the Division began its own interpretive services program.

Interpretive Services Program activities include *personal* (staffed) and *non-personal* (unstaffed, media-oriented) visitor services. At this writing, year-round *personal* programs are provided at 16 state parks, with peak-season *personal* programs extended to an additional 8 state parks, staffed by seasonal naturalists, and when available, interns.

Today, the Division applies a systematic evaluation in each unit within the Minnesota State Park system, to prioritize the necessarily-limited funds available for Interpretive Services activities. This evaluation system and its preliminary results are set forth in national award winning "Minnesota State Park System Interpretive Services Plan" (1995).

To establish interpretive priorities, the three character components evaluated in each unit are (1) *natural resources*, (2) *cultural resources*, and (3) *visitation patterns*, existing and predicted. This evaluation results in numerical ratings for each state park. These systematic ratings identify five priority levels for Interpretive Services within Minnesota State Parks, with *Level 5* meriting the highest investment. The plan calls for periodic re-evaluation of these ratings, to incorporate new awareness of these components, and to establish short-term priorities which guide the Division's biennial budget request process.

Charles A. Lindbergh State Park's preliminary interpretive rating places the unit in interpretive priority *Level 3*. By the plan's definition, a state park unit in this level is characterized as follows: "*Resource significance is medium to high, and visitor use is high but with seasonal peaks. Merits programming 4 to 7 days a week during peak season. Merits a seasonal interpretive center, in-door exhibits, audio-visual programming, self-guiding trails and wayside exhibits.*"

Values in the preliminary rating for Lindbergh are significantly higher for *cultural* than for *natural resources*. This is consistent with the purpose for which the park was originally

established; that is, to preserve the area of the Lindbergh home and farm. Low *natural resource* values are also understandable because of the park's land use history of logging and farming, its small size, its suburban location and relatively intense use, at least seasonally. Because of the statewide, national, and international significance of the *cultural resources* here, Interpretive Services, as envisioned by the Divisional plan, are appropriately and primarily provided by the Minnesota Historical Society, particularly where *personal* Interpretive Services are concerned. Interpretive Services provided by the Division at the present time are *non-personal* services.

A SUMMARY OF EXISTING INTERPRETIVE SERVICES

The Minnesota Historical Society operates its interpretive program at the Lindbergh House and History Center seven days a week from May 1st through Labor Day, and on weekends during September and October. The site manager, from November through April, is involved in program and exhibit planning, inventories and other administrative tasks.

Staffed operations of the Lindbergh House and History Center during peak season are presently characterized by special programs, tours and exhibits. In accord with the wishes of Charles A. Lindbergh, Jr., exhibits in the Lindbergh History Center cover the three generations of Lindberghs who called the site their home. Also, the Lindbergh House, is mainly furnished to the period of Charles, Jr.'s boyhood. For the most part, present exhibits have been in place since the center was first opened in 1973.



Lindbergh House (circa 1940)

The Charles A Weyerhaeuser Memorial Museum is located in the Southeast corner of the park. The museum, open all year (Tuesdays through Saturdays, 10 AM to 5 PM, also Sundays during summer months, 1 PM to 5 PM), features interpretive exhibits on Morrison County history themes, and serves as a research facility, particularly for genealogical searches. It also serves in a consultant capacity for community heritage preservation planning.

Weyerhaeuser Museum grounds feature an impressive gazebo overlooking the Mississippi River, and interpretive plantings of native prairie species. (This latter landscaping effort provides an

educational opportunity in significant contrast to those woodlands native to the state park, but complements the local *natural resource* experience.

For some 25 years, Smuda's Zoo, a popular privately-owned petting zoo, was operated by Frank and Louise Smuda, brother and sister, who were life-long residents living near the mouth of Pike Creek. The zoo operation discontinued with the death of Louise, in 1994.

A short four miles up the Mississippi, at its confluence with the Little Elk River, the Institute for Minnesota Archaeology (IMA) is developing the Little Elk Heritage Preserve (LEHP). This complex of archaeological sites includes an emerging, wide array of evidence pertinent to central Minnesota's history. One site represents the best preserved archaeological evidence of a mid-Eighteenth Century French wintering post known in North America. Other known sites in the preserve include the remains of ancient and historic Indian encampments, a Methodist-Episcopal Indian mission, the residence of a major Ojibwe chief, a water-powered saw and grist-mill complex, schist quarries, and a general store.

IMA has developed a conceptual planning guide for the LEHP, and an informative self-guided interpretive trail of the area. Additionally, special events are held which illuminate the archaeological research underway here. Most of the studies, however, are preliminary, and access to the preserve is by appointment only at this time. Most interpretive opportunities here are *non-personal*.

Other educational opportunities in the vicinity include, but are not limited to, Crane Meadows National Wildlife Refuge, the City of Little Falls's Pine Grove Park, Morrison County's Belle Prairie Oxbow Park, the Dewey-Radke House (1893), and Camp Ripley Military Museum.

NEW INTERPRETIVE DIRECTIONS AND POTENTIALS: Cultural Resources

As we approach the millennium, new exhibits are presently being planned for Lindbergh History Center. The plan is to have Charles A. Lindbergh, Jr. as the central character, and will incorporate more interactive designs than those presently in place. The thematic focus will be based on the international historical significance of the aviator, as well as emergent visitor preference and demand.

New volunteer-based programs seek to add gardening operations to the present Minnesota Historical Society interpretive effort, involving area schools, other groups and individuals, to reestablish some of the home gardening aspects appropriate to the historic site. Initially, this is not anticipated to be a *living history* interpretive program, yet it will add a new dimension to the house and site tours.

Many of the important outlying sites of the original Lindbergh farm are administered by Charles A. Lindbergh State Park. Important among them are the Tenant Farmer house, which remains relatively intact. The state park has recently undertaken to stabilize the structure, re-roof it, and move the exterior toward an historic appearance. An interpretive sign, developed by the Minnesota Historical Society and Minnesota State Parks, has been installed which relates the structure's significance to the Lindbergh farm. These preliminary efforts enhance the Tenant Farmer house's significance to the Lindbergh House tours.

Joint interpretive planning efforts between the MHS and the DNR Division of Parks and Recreation are exploring better ways to interpret Lindbergh Farm sites. For example, interpretive signs are presently being placed on the sites of (1) the field where Charles

Lindbergh, Jr. landed his first airplane, a Curtiss JN-4D, or **Jenny**, and (2) the site on Pike Creek where Charles, Jr. once built a primitive barb-wire and plank swinging bridge.



“Swinging Bridge” (circa 1940)



Trail bridge at the site of the original bridge. (circa 1998)

These signs will use photographs and art to relate important stories, which cannot otherwise be easily told. Likewise, preliminary studies are underway to explore joint-agency options for possible future *living history* interpretation, such as focusing special events on the Tenant Farmer house exterior. There are no plans to historically restore or furnish the building’s interior.

The Lindbergh barn, which burned before the park was established, in 1923, stood on the site of the present contact station. Its original **footprint** dimensions may no longer be establishable by archaeology, because of subsequent development (i.e., building, road and landscaping). Today, the shape and construction of the barn is imprecisely known from a recent artist’s rendering, drawn from an **eye-witness** description. From the best information, the original barn was of a utilitarian nature, and not of ethnic or architectural distinctiveness.

The barn’s potential for restoration was explored preliminarily by the Minnesota Historical Society’s former director, Russell Fridley, in his dialogue with Charles A Lindbergh, Jr. in letters which became the book, **Boyhood on the Mississippi**. Lindbergh’s 1960’s and 1970’s recollections of various farm-era sites, including that of the barn, were understandably sketchy, in light of substantial changes over the several decades. That such a project has not been pursued by MHS suggests that the project is impractical in terms of both historical integrity and cost.

This lack of information about the Lindbergh barn, along with the building’s non-distinctiveness, does not lend an appropriate or useful architectural theme for the park’s new administrative offices. The original park plan for Charles Lindbergh State Park suggests the propriety of using an architectural theme for this purpose which harmonizes with the WPA-vintage structures and characterize the park’s National Register district. The site of the Lindbergh barn should be interpreted with special signing.

A number of structures in and adjacent to the state park’s picnic area were constructed over fifty years ago by the Works Progress Administration (WPA), most notably the picnic shelter, water tower, water fountains, the picnic area’s log toilet building, and steps and retaining walls along Pike Creek. These structures are listed on the National Register of Historic Places. Future interpretive signing will focus on this historical aspect of the state park.



Picnic Shelter (circa 1940)

Zebulon Pike wintered on the Mississippi near the park in 1805, in his government exploration of this portion of the Louisiana Purchase (1803). The site of his wintering post was flooded by the backwaters of the Blanchard Dam. The site has been precisely located with archaeological techniques during a recent drawdown of this reservoir. Pike's presence in the area was of national importance and may logically be interpreted in the park.

Other cultural resource interpretive themes exist that with time and budget are developable. These include, but are not limited to, the following:

Cultural

- + *Inferences from Pre-Euroamerican Contact and Post-Contact Sites in the Vicinity:* The presence of prehistoric and historic sites nearby, and the topography of the state park, suggest that traces of similar uses, should be present within the park.
- + *Changes in Fauna:* Logging and European settlement altered the zoological makeup and diversity of this area.
- + *Zebulon Pike's Visit in 1805:* Pike's visit, exploring the Louisiana Purchase, makes his local visit a notable historical event.
- + *Recreation:* The state park offers a variety of recreational experiences.

NEW INTERPRETIVE DIRECTIONS AND POTENTIALS: Natural Resources

Past land use practices in Charles A. Lindbergh State Park set the area in marked contrast to its natural, pre-Euroamerican Settlement conditions. This presents both a resource management challenge and an interpretive opportunity. Inasmuch as this state park owes its origin to its historical importance, it is not a resource management goal to restore pre-settlement conditions. Indeed, much of the resource management challenge must focus on control of aggressive species of non-native plants, and the impacts of intensive visitor use on a park of relatively-small acreage. To ensure success, interpretive methods must be used to relate the intentions of resource management to the park user.

Nonetheless, there remain significant opportunities for natural resource experiences here. As time and budget allow, there are several natural resource themes, which are interpretively developable for *non-personal* media including, signs, brochures, trail stops. These include, but are not limited to, the following:

Geological

- + *Glacial Geology*: The landscape of the park shows many features resulting from glacial action.
- + *Pike Creek Terraces and Old Channels*: Evidence of Pike Creek's evolution through downcutting and channel migration can be seen along the creek.

Botanical

- + *Human Impacts on Vegetation*: Aggressive exotic species must be controlled to preserve native plants and communities.
- + *Succession and Climax*: Examples of all stages of succession of plant communities, from primary habitat pioneer species to mature maple forest, can be seen in the park.

Zoological

- + *Nest Structures*: Human assistance has been necessary to enhance habitat for species previously adversely affected by human actions.
- + *Beaver Activity*: Beavers are a part of the Pike Creek ecosystem and help increase habitat for many species.
- + *Mississippi Flyway Bird Migration*: The Mississippi River is a major corridor for spring and fall migration of waterfowl, warblers, raptors, and other migrants.
- + *High Deer Density*: Landscape fragmentation and elimination of predators have increased local deer populations above historic levels.
- + *Black Squirrels*: This color phase of the gray squirrel occurs with a high frequency in isolated pockets surrounded by areas of more uniformly gray populations.
- + *Intermittent Predator Sightings*: Predators' presence in this area is limited, and is marked most often through sightings of tracks.

Ecological

-
- + *Morrison County Biological Survey*: Charles Lindbergh State Park, while much altered from its natural state, still contains opportunities to do restorative resource management to mimic some of the original natural conditions.
 - + *Mississippi River*: The Mississippi drainage, major influence on the cultural development of this area, past and present, evolved as a relic of the Ice Age.
 - + *Pike Creek Watershed*: The health of the park is strongly reflected in the health of this watershed.

VII. OPERATIONS, STAFFING, AND COSTS

Operations and Staffing

Charles A. Lindbergh State Park operations are minimally implemented with present staff levels. Resource degradation from minimal maintenance is occurring on some buildings and trails. Proposed actions in the plan would require additional staffing, mainly for maintenance.

The 1994 Statewide Interpretive Plan recommended increased non-personal efforts, with occasional interpretive programming at the park. MHS currently provides cultural resource interpretation for park visitors. This effort may be expanded in the future, based upon user needs.

Resource management staff time, both regional and park level, will need to be expanded if the resource management recommendations are to be implemented.

Currently, enforcement problems are minimal in the park. Future enforcement efforts should be focused on heavy use weekends.

Interpretive efforts (personal and non-personal) should emphasize ways to protect natural and cultural resources and reduce impacts on the resources. This could become increasingly important if a bike trail is built.

Many of the development proposals would have initial start-up expenses with additional long-term maintenance expenses. Some of the proposals could be developed with minimal expenses using alternative labor, for example:

- Sentence to Service (STS)
- Minnesota Conservation Corps (MCC)
- Other Volunteers.

The Division of Parks and Recreation will experience increased staffing needs and work loads as a result of plan implementation. Other DNR disciplines may also experience increased workload as a result of increased recreational opportunities and resolution of land issues. Local representatives of these disciplines participated in the planning process and are familiar with what their role may be in the future.

Costs

If all the actions in this park plan were implemented, both development & annual operational costs would need to be significantly increased. The amount is difficult to estimate because many of the recommendations are very general. A reasonable estimate for acquisition and development at this time ranges between \$ 1,500,000 and \$ 2,000,000.

The following list, which was generated as part of the planning process, represents those actions that have cost implications.

1. Develop a long -term vegetation management plan.
2. Conduct biological surveys and monitoring programs.
3. Restore degraded communities and remove undesirable exotic species.
4. Develop park database and GIS of natural and cultural resources.
5. Conduct cultural resource surveys, especially in proposed development areas.
6. Construct a new Visitor Contact Station.
7. Improve trail signage and assurance markers.
8. Construct an accessible interpretive trail near picnic area.
9. Add at least one camper cabin.
10. Evaluate/construct fishing facilities on Mississippi River at the north end of MHS land.
11. Develop interpretive brochures and exhibits on natural & cultural resource themes.
12. Develop interpretive display on the Anoka Sand Plain.
13. Construct bike trail loop along Pike Creek to Pine Grove park, & downtown Little Falls.
14. Construct bike trail parallel to South Lindbergh Drive.
15. Acquire land within the present and proposed statutory boundary
16. Relocate group camp.

VIII. PLAN MODIFICATION PROCESS

State Park Management Plans document a partnership-based planning process and the recommended actions resulting from that process. These comprehensive plans recognize that all aspects of park management are interrelated, and that management recommendations should also be interrelated.

Planning is an ongoing process and the written plan must be regularly revised if it is going to have continuing value. Over time, however, conditions change that affect some of the plan recommendations or, in extreme cases, an entire plan. Plans need to recognize changing conditions and be flexible enough to allow for modifications as needed.

For the purpose of this plan we will differentiate between less controversial plan revisions and major plan amendments. Minor plan revisions can generally be made within the Division of Parks and Recreation. If a proposed change to a management plan meets any of the criteria below, it must follow the Plan Amendment Process. To maintain consistency among the plans and processes, all revisions and amendments should be coordinated through the Division of Parks and Recreation planning section. Requests for modifications should be directed to the Division of Parks and Recreation Planning Manager at the central office.

Major Plan Amendments

Proposed Plan Change Amendment Process Criteria

If a proposed change meets any of the following criteria, it must be approved through the amendment process below.

The proposed change:

1. Alters the park mission, vision, goals, or specific management objectives outlined in the plan;
or
2. Is controversial among elected officials and boards, park user groups, the public, other DNR divisions, or state agencies.

Management Plan Amendment Process

1. Division of Parks and Recreation Initial Step: Review plan amendment at park and regional level. Determine which stakeholders potentially have a major concern and how those concerns should be addressed. If the major concerns are within the Division of Parks and Recreation, the issue should be resolved within the division. Review proposed approach with central office managers.
2. If the proposed change issue is between DNR Divisions, the issue should be resolved by staff and approved by the Division Directors. This may require one or two area/regional integrated resources management team meetings. The Division Directors will determine whether the proposed changes should go through the departmental (CTECH/Senior Manager) review process.
3. If the proposed change issue is between state agencies, the issue should be resolved by staff from both agencies and approved by the Division of Parks Director.

4. If the proposed change is potentially controversial among elected boards, park user groups, or the public, the park advisory committee should discuss the proposed change and attend an open house forum, which is advertised in the local and regional area. Following the open house, the Division of Parks Director will determine whether the proposed change should be reviewed by the department.

5. All plan amendments should be coordinated, documented, and distributed by the Division of Parks planning staff.

Plan Revisions

If a plan change is recommended that does not meet the amendment criteria above and generally follows the intent of the park management plan (through mission, vision, goals, and objectives), the Division of Parks has the discretion to modify the plan without a major planning process.

Revisions related to Physical Development Constraints and Resource Protection

Detailed engineering and design work may not allow the development exactly as it is outlined in the plan. A relatively minor modification, such as moving a proposed building site to accommodate various physical concerns, is not uncommon. Plans should outline a general direction and document general "area" for development rather than specific locations. For the most part, plans are conceptual, not detailed-oriented. Prior to development, proposed development sites are examined for the presence of protected Minnesota Natural Heritage Program elements and historical/archaeological sites. If any are found, the planned project may have to be revised to accommodate the protection of these resources.

Program Chapter Revisions

The Natural and Cultural Resources and Interpretive Services chapters should be updated periodically as needed. Division of Parks and Recreation Resource Management and Interpretive staff will determine when an update is needed and coordinate the revision with the park planning section. Program chapters should be rewritten in a format consistent with the plan as originally approved by the DNR. To retain consistency, park-planning staff should be involved in chapter revision review, editing and distribution.

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