

James L. Oberstar State Trail Master Plan



The Minnesota Department of Natural Resources, Parks and Trails Division would like to thank all who participated in this master planning process. Individuals and groups from area communities have been working years to generate support and momentum for trail connections in the area. Many DNR staff, city, county, and state officials, and local citizens contributed their time and energy to this planning process as well.



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Minnesota Department of Natural Resources
Approval of the James L. Oberstar State Trail Master Plan

Minnesota Statutes 86A.09 requires that a master plan be prepared for units of Minnesota’s outdoor recreation system, including state trails. This master plan addresses the James L. Oberstar State Trail, which is authorized to extend from Chisago County to Hinckley in Pine County. This trail is authorized as a part of the Willard Munger State Trail System in Minnesota Statutes, section 85.015, subdivision 14. This trail segment was named the James L. Oberstar State Trail in Laws of Minnesota 2014, chapter 312, article 12, section 6, subdivision 4.

The Minnesota Department of Natural Resources (DNR) interdisciplinary team developed the master plan with the assistance of citizens, user groups, and local and state government agencies. The plan received input and comments from the public during a 30-day public review period and an open house meeting held in Pine City.

The James L. Oberstar State Trail Master Plan has been reviewed by the DNR Parks and Trails Division and by the department’s Northeast and Central Region Management Teams.

I have reviewed this master plan and determined that it complies with Minnesota Statutes 86A.09 and find that it provides for the administration of the James L. Oberstar State Trail in a manner that is consistent with the purposes for which the trail was authorized.

Erika R. Rivers

1/23/2018

Erika Rivers, Director

Date

MNDNR, Parks and Trails Division

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EXECUTIVE SUMMARY

The James L. Oberstar State Trail, a segment of the Willard Munger State Trail system, is authorized to extend between Chisago County and Hinckley in Pine County. This master plan provides a long-term vision and direction for the development and management of the Oberstar State Trail. The plan was developed through a public process that engaged stakeholders, local partners and the public.

The Minnesota State Parks and Trails System Plan designates the Oberstar State Trail as a Core: division-led state trail. Trails in the Core: division-led investment group will be well maintained, provide basic services, and provide a safe and enjoyable experience for all who use the trail. The division will seek partners, or outside funding, to maintain the trail and to provide additional amenities or services for trail users.

Potential Trail Uses

The Oberstar State Trail will be a multi-use, multi-season trail. The trail is intended for non-motorized uses in the summer and a combination of uses, including snowmobiling, in the winter. The trail is expected to be paved and will be accessible to the greatest extent possible. Trail uses may vary along the length of the trail due to right-of-way width, landowner agreements, or compatibility with adjacent land uses or recreational activities. Specific trail uses will be determined through implementation.

Trail Routes and Development

The Oberstar State Trail is one segment of the Willard Munger State Trail system, which was originally authorized to complete an off-road trail connection between the Twin Cities and Duluth. Parts of the Willard Munger State Trail system have been developed between St. Paul and Stillwater, and Hinckley and Duluth.

The Oberstar State Trail, in conjunction with local and regional trails, could provide an off-road link between Taylors Falls and Hinckley. Existing and planned local or regional trails could provide permanent off-road trail connections through the state trail corridor. The state trail will not supersede or supplant local and regional trail connections. Coordination of regional trail routes and state trail routes will provide trail users with a continuous, uninterrupted trail experience. In such cases, the DNR will work with local units of government to establish a coordinated approach to develop and manage the trail.

The master plan identifies three search corridors for state trail routes, and describes several potential trail routes in more detail.

- Corridor A: A route generally following County Highway 30 from North Branch to Pine County, with a regional trail connection to Taylors Falls.
- Corridor B: A route along the St. Croix River from Taylors Falls to Pine County.

- Corridor C: A route along County Highway 61 from Chisago County to Hinckley.

Either corridor A or B could be pursued along with Corridor C to complete a trail connection between Taylors Falls and Hinckley. Corridors A and B would provide different trail experiences and cater to different types of people. While both routes are included as options in this plan, one corridor will be selected and pursued through cooperation with area stakeholders.

The Oberstar State Trail will complement other parts of the trail network in east-central Minnesota. Existing routes, like bicycle routes and grant-in-aid snowmobile trails, could offer interim routes through the area for some potential state trail users.

Trail Management

Trail management encompasses maintenance, enforcement, orientation, and interpretation of natural and cultural resources. The plan recommends that an adequate level of enforcement be provided via a multifaceted approach to help maintain a safe and secure trail environment. Trail information will focus on wayfinding and orientation so trail users understand trail rules and know what kind of trail experience to expect. The division will work with partners to develop and deliver interpretive services.

Trail maintenance will be critical to provide users with a safe trail experience and to prolong the life of the trail. The division will complete state trail monitoring and maintenance through an adaptive approach. The division will seek partnerships and additional maintenance funds necessary for maintaining the trail after it is developed.

Natural and Cultural Resources

The natural and cultural resources of the trail corridor will be protected, and enhanced wherever possible. The division will use its resource assessment process to identify potential impacts to natural and cultural resources and make recommendations to prevent, minimize or mitigate undesirable effects.

The plan provides recommendations for vegetation, water resources and wildlife during trail development and management. Vegetation within the trail right-of-way will be managed to control invasive species and promote healthy diversity of native species. The plan recommends developing trail routes that share water crossings with existing infrastructure to avoid and minimize disturbances to water resources. The trail will utilize best management practices where the route is located near water features. The trail could enhance access to water resources, where feasible, through shore fishing or scenic overlook sites. The division will use best available information to avoid critical habitats and prevent impacts to threatened, endangered, and special concern species during trail development and management. Information and interpretation could be used to alert trail users to ways they can avoid impacting the wildlife and resources that they encounter.

1. PLANNING PROCESS, SCOPE AND GOALS

Planning Process

Planning History and Purpose

The Minnesota-Wisconsin Boundary State Trail (since renamed as the Willard Munger State Trail) was authorized in 1973 to provide a trail connection between the Twin Cities and Jay Cooke State Park. Since then, several trails within this corridor have been completed by state, regional or local agencies. Many communities, groups and individuals, have continued to advocate for a trail connection between the Twin Cities and the Twin Ports of Duluth, MN and Superior, WI.

In 2014, the segment of the Willard Munger State Trail from Chisago County to Hinckley was named the James L. Oberstar State Trail in honor of the former U.S. representative. Oberstar, who died in 2014, is the longest serving Congressman in Minnesota history. He served the state’s 8th District, which covers northeastern Minnesota, from 1974 to 2011. Oberstar was an avid cyclist and devoted much of his career to improving transportation and infrastructure.

The Minnesota Legislature enacted the Outdoor Recreation Act (ORA) in 1975. This act established an outdoor recreation system comprised of eleven components, or “units,” classifying all state-managed recreation lands. State trails are one unit of the state’s outdoor recreation system. The ORA requires that the managing agency prepare a master plan for the establishment and development of each unit.

This plan fulfills the master plan mandate and provides updated direction for the James L. Oberstar State Trail, or Oberstar State Trail. The DNR completed a master plan for the Minnesota-Wisconsin Boundary State Trail in 1982. The 1982 plan included two general corridors: a natural surface trail along the St. Croix River, and a paved surface trail on an abandoned railroad grade extending north from Hinckley. The legislative authorization has been revised since the 1982 plan was completed to include a connection between Chisago County and Hinckley, now referred to as the Oberstar State Trail. See [Appendix A](#) for additional details about the ORA and legislative authorization of the Oberstar State Trail.

The planning process and management of state trails are guided by the Minnesota DNR mission and Parks and Trails Division vision (see sidebar).

Planning Process

This master plan was prepared by the Department of Natural Resources (DNR) through a public planning process. The planning process provides multiple points for public input and makes every effort to incorporate reliable, up-to-date resource information. [Figure 1](#) illustrates the general planning process, however, each process has its own combination of partners, advocates and stakeholders.

Department of Natural Resources Mission

Our mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

Division of Parks and Trails Vision

Our vision is to create unforgettable park, trail, and water recreation experiences that inspire people to pass along the love for the outdoors to current and future generations.

A group of trail advocates began meeting in 2015 to pursue trail connections through east-central Minnesota. This group consists of local government staff, elected and appointed officials, and citizen advocates from Pine, Isanti, Chisago, Kanabec and Mille Lacs counties (referred to as the PICKM trail group). These five counties comprise the east-central Minnesota economic development region.

The DNR began the master planning process with a meeting with the PICKM trail group. The meeting was held to identify local priorities and share information about the state trail system and master planning process. The DNR gathered initial public input on the project through an online questionnaire in the fall of 2015.

The DNR engaged community stakeholders, other governmental agencies and DNR staff during the planning process. The DNR met with stakeholders periodically to gain input on courses of action and discuss ways they could support trail planning and development.

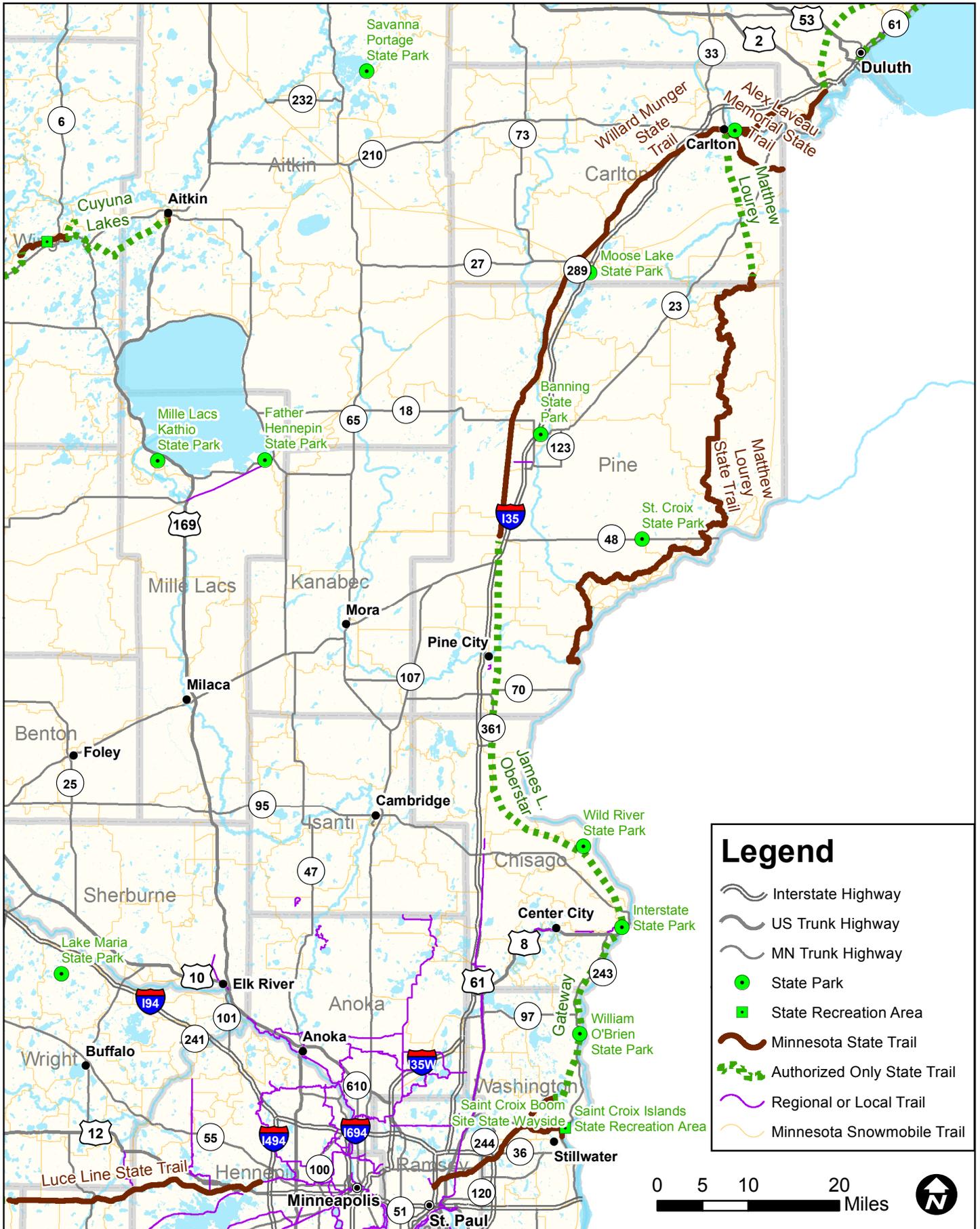
The DNR held a 30-day public review period in 2017 to provide information on the project and solicit input on the draft master plan.

See [Appendix B](#) for a complete summary of public participation opportunities and input received during the planning process.

Figure 1: Trail Planning Process



- Who's Involved**
- Community Recreation, Trail, and Economic Development Committees
 - Park and Trail Advocacy Groups
 - DNR Resource Managers
 - Other Park and Trail Providers
 - Elected Officials
 - Scenic Byways
 - Other Agencies
 - Community Leaders
 - Trail Users
 - Residents



Statewide Context

State Trail System

The Oberstar State Trail is one of Minnesota’s legislatively authorized state trails (see [Figure 2](#)). The system currently consists of over 2,900 potential trail miles, though only approximately 1,500 miles are developed and open for public use. The gap between the miles of authorized state trail and the miles of developed state trail is growing as new state trails, and extensions to state trails, are authorized.

Minnesota State Parks and Trails System Plan

In 2015, the Division of Parks and Trails completed a Minnesota State Parks and Trails System Plan to advance new approaches to managing DNR’s state parks, recreation areas, trails, forest recreation areas, and water recreation system. The system plan recommends a differentiated approach to managing the system, rather than trying to be all things to all people in all places.

Each of the state trail system’s legislatively authorized trails were assessed by eight criteria and placed in one of the following investment groups: Destination, Core: division-led, and Core: partner-led. The investment groups differ by the amount and type of investment the division makes, how the division works with partners, and how the division communicates about trail experiences. The division will continue to assess and refine the investment groups as the system plan is implemented. Some trails may be re-categorized as local conditions change and as development occurs.

The James L. Oberstar State Trail is in the Core: division-led investment group. Through a combination of state and local resources, Core: division-led trails will be well maintained, provide basic services, and provide a safe and enjoyable experience for people using the trail. Amenities that go beyond basic services, like interpretation or special events, may be provided in conjunction with partners or through outside fundraising.

Regional Context

While the Oberstar State Trail will be located within Pine and Chisago counties, other trails will continue to provide important connections throughout region. The Oberstar State Trail could expand on, or connect to, existing off-road, multi-use trails. Other routes, including the North Star Bicycle Route and St. Croix Scenic Byway, provide complementary recreational opportunities and could enhance access to the Oberstar State Trail. Portions of the Oberstar State Trail could share a corridor with some of these existing routes.

There are many important community and recreational connections in the search corridor which are not discussed here. See [Chapter 5](#) for more information about local connections.

Willard Munger State Trail

A 70-mile segment of the Willard Munger State Trail extends between Hinckley and Duluth. This trail is completely paved, and connects the cities of Hinckley,

Finlayson, Willow River, Moose Lake, Barnum, Carlton and Duluth. The trail passes near Banning State Park, through General C.C. Andrews State Forest, and through the spectacular scenery of Jay Cooke State Park. The northeast portion of the trail provides scenic views of the St. Louis River and the twin ports of Duluth and Superior. The Oberstar State Trail search corridor terminates at the trailhead for the Willard Munger State Trail in Hinckley.

Gateway State Trail

The Gateway State Trail is authorized to extend from St. Paul to Taylors Falls. Currently, the trail offers 18 miles of paved trail for non-motorized use. The trail begins in the city of St. Paul, travels northeast through the cities of Maplewood, North St. Paul, and Oakdale, through Washington County, and ends at Pine Point Regional Park.

Regional Trails

Chisago County manages the Swedish Immigrant and Sunrise Prairie regional trails. The Swedish Immigrant Regional Trail will connect Wyoming, Taylors Falls, other communities and Interstate State Park. The trail corridor is planned to follow an abandoned railroad grade along U.S. Highway 8 and about 10 miles have been developed. The Sunrise Prairie Regional Trail is planned to extend 30 miles through Chisago County along County Highway 30. The trail is currently developed between North Branch and Washington County, where the route continues south as the Hardwood Creek Regional Trail. The Sunrise Prairie and Swedish Immigrant regional trails are both paved multi-use trails used primarily for hiking, biking and inline skating.

North Star Bicycle Route

The North Star Bicycle Route originates in St. Paul, passes through Duluth, and extends to the Minnesota/Canada border at Grand Portage. The North Star Bicycle Route, also known as United States Bicycle Route 41, is a designation that utilizes existing facilities including off-road trails and local and state roads. The route will be promoted and marketed to inform bicyclists about long distance travel options. The bicycle route could provide an interim route for bicyclists through the Oberstar State Trail corridor until an off-road trail can be developed. Parts of the Oberstar State Trail, once complete, could be designated as part of the North Star Bicycle Route.

St. Croix Scenic Byway

The St. Croix Scenic Byway begins in Askov and extends 124 miles south to Point Douglas along the St. Croix River. The byway is an automobile route that connects historic river towns, recreational areas, scenic vistas and many other points of interest. Portions of the byway follow the original alignment of the 1852 Point Douglas to Superior Military Road. The byway is managed by a non-profit organization with a board of directors. The byway's mission is: "To recognize St. Croix valley natural, historic and scenic resources and promote them in a unified story that contributes to preserving rural character, community character and a rich byway experience."



A snowmobile trail groomer on the Willard Munger State Trail.



The Swedish Immigrant Regional Trail near Shafer.

St. Croix National Scenic Riverway

The St. Croix National Scenic Riverway is part of the National Park System and the St. Croix and Namekagon rivers are designated as National Wild and Scenic Rivers. Relatively free-flowing and unpolluted, the Namekagon and St. Croix Rivers flow through some of the most scenic and least developed country in the Upper Midwest. Together they form the 230-mile-long park that offers outdoor enthusiasts a chance to enjoy a variety of recreation opportunities. A visitor center is located in St. Croix Falls, WI and there are campsites located along the riverway.

The purpose of the St. Croix National Scenic Riverway is to preserve, protect, and enhance the values of the St. Croix and Namekagon Rivers and their immediate environment for the benefit and enjoyment of present and future generations. The values for which the Riverway has been designated as a wild and scenic river are its free-flowing character, exceptional water quality, and the aquatic, riparian, recreational, cultural/historic, geologic, scenic and aesthetic values present in the rivers.

State Water Trails

The Kettle, Snake and St. Croix rivers are part of the Minnesota State Water Trail system. Portions of these rivers parallel the state trail corridor and may provide combined pedal and paddle opportunities. River conditions vary by river segment and season, providing a range of experiences. Some river segments are suitable for beginners, while others offer up to class IV rapids.

Guiding Principles and Goals

Guiding Principles for Sustainable Trails

Guiding principles for ecologically sustainable trails provide the underlying rationale for actions related to protecting, restoring and managing natural environments associated with locating, developing and managing trails. There are seven core principles:

1. Avoid sensitive ecological areas and critical habitats.
2. Develop trails in areas already influenced by human activity.
3. Provide buffers to avoid/protect sensitive ecological and hydrologic systems.
4. Use natural infiltration and best practices for storm water management.
5. Provide ongoing stewardship of the trails and adjoining natural systems.
6. Ensure that trails remain sustainable.
7. Formally decommission and restore unsustainable trail corridors (DNR 2007a).

Application of these principles will minimize the impact of trails on natural resources, cultural resources and sensitive ecological systems. Resource managers, trail designers and other interested individuals must work together



A canoe travels down the St. Croix River, a state water trail and part of the St. Croix National Scenic Riverway.

to determine how to best apply the guiding principles when locating, developing and managing trail routes.

Vision:

The James L. Oberstar State Trail will complete important trail connections for multiple uses to provide recreational opportunities for area residents and visitors throughout all seasons. People will have opportunities to experience natural, cultural and scenic resources. The trail will be a safe and accessible complement to bike routes, improving mobility and providing opportunities for people of all experience levels, including long-distance cyclists and families with children. The trail will promote healthy living, quality of life, preservation of natural and cultural resources, and tourism.

Goals:

The vision for the Oberstar State Trail will be achieved through the following goals.

- Complete a gap in the trail network to facilitate a multi-use trail connection between the Twin Cities and Duluth.
- Connect to the Willard Munger State Trail, Sunrise Prairie Regional Trail and Swedish Immigrant Regional Trail.
- Connect to, and enhance opportunities, at existing recreational hubs.
- Connect to communities and business centers.
- Provide access to natural, cultural and scenic resources in the area, like the St. Croix River Valley.
- Utilize existing trail routes and public rights-of-way to reduce new land acquisition and development needs and minimize potential impacts to natural and cultural resources.
- Complement bicycle routes by providing a safe and accessible off-road route for cyclists.
- Protect natural and cultural resources and adhere to the guiding principles for sustainable trails.
- Partner with area organizations to provide services, including food, restrooms, interpretation and wayfinding, to people using the trail.
- Develop and manage the trail in accordance with the direction for Core: division-led trails in the 2015 Minnesota State Parks and Trails System Plan.

Vision Statement

The James L. Oberstar State Trail will complete important trail connections for multiple uses to provide recreational opportunities for area residents and visitors throughout all seasons. People will have opportunities to experience natural, cultural and scenic resources. The trail will be a safe and accessible complement to bike routes, improving mobility and providing opportunities for people of all experience levels, including long-distance cyclists and families with children. The trail will promote healthy living, quality of life, preservation of natural and cultural resources, and tourism.

2. POTENTIAL TRAIL USES

The Oberstar State Trail will be a multi-use, multi-season trail. The trail is intended for non-motorized uses in the summer and will be open to a combination of uses, including snowmobiling, in the winter. The trail and its supporting facilities will be universally accessible to the greatest extent possible, as required by the Americans with Disabilities Act.

Different trail uses are likely to be allowed on different portions of the Oberstar State Trail. Some uses may not be accommodated for the entire length of the trail due to limited right-of-way width, landowner agreements, or compatibility with adjacent land uses or recreational activities. Specific trail uses will be determined for segments of the trail as they are developed based on the following criteria:

- Compliance with the Americans with Disabilities Act.
- Consistency with local ordinances and landowner agreements.
- Include uses that are accommodated on trails and in recreational areas that connect to the state trail route.
- Minimize potential conflicts between trail uses.
- Compatibility with adjacent land uses.

Bicycling

Bicycling is recommended as a use along the entire length of the trail. The route will be desirable for cycling because it connects to other popular bicycling trails. The state trail corridor parallels the corridor for the North Star Bicycle Route. The North Star Bicycle Route will utilize a combination of on-road and off-road facilities to make broader bicycling connections. The Oberstar State Trail will provide a complementary route for bicyclists who are not comfortable riding on the road. Winter biking, or fat biking, is a possible use where it does not conflict with other winter uses, like snowmobiling or cross-country skiing.



Walking and Hiking

Hiking and walking is second only to bicycling as popular low-impact cardiovascular fitness activities on state trails. Grades are likely to be moderate throughout the majority of the trail route, making it suitable for most people to walk and hike. Hiking and walking are recommended as uses on the entire length of the trail.



Running/Jogging

Many people use the state trails for running and jogging. In addition to individuals who regularly use the trails for exercise, local school track and cross-country teams will be able to use this scenic trail for training purposes. Running and jogging are recommended uses along the entire length of the trail.



Dog Walking

Dog walking is a recommended use along the entire length of the trail so long as dogs are leashed and owners properly dispose of pet wastes. State trail rules require all pets to be attended and restrained by a leash of not more than six feet in length.



Inline Skating/Skate-skiing

While participation rates for in-line skating on state trails have declined, it remains a popular sport. Roller skiing is a summer training tool for cross-country skiers. In-line skating and roller skiing require a paved trail with a smooth, wide surface such as asphalt. In-line skating and roller skiing are recommended uses for paved sections of the trail.



Horseback Riding

Horseback riding is recommended on portions of the trail that connect to existing equestrian hubs. The state trail has potential to enhance horseback riding opportunities near Wild River State Park. A separate, natural surface, treadway may be needed to accommodate horseback riding. A wider trail right-of-way will be required to provide a natural surface trail alongside a paved trail for other uses.



Cross-country Skiing and Snowshoeing

Cross-country skiing and snowshoeing may be allowed on trail segments that connect to other areas where these uses are allowed. Grooming for cross-country skiing may be completed with partners at adjacent recreational facilities. These uses may be prohibited on trail segments that accommodate other winter uses.



Snowmobiling

Minnesota has over 22,000 miles of groomed snowmobile trails, serving over 216,000 registered snowmobiles (2016 numbers). In addition to the grant-in-aid trail system, snowmobiles can legally ride in the right-of-way of roads, unless prohibited by local ordinance, and on frozen public waters. Snowmobilers are interested in trail connections, quality of trail grooming, safety, and funding stability for their programs. As urban and suburban development expands, existing grant-in-aid routes may be lost.



Snowmobiling is a recommended trail use through the majority of the trail corridor. The state trail has the opportunity to improve and secure existing grant-in-aid trail connections, like MnUSA snowmobile route 47. Snowmobiling may be restricted by local ordinance, landowner agreements or park regulations.

Trails in Wild River and Interstate state parks do not allow motorized uses, except the snowmobile crossing at Sunrise Landing in Wild River State Park. State trail routes through either park will not accommodate motorized uses. A separate trail route, or use of a grant-in-aid trail connection, could be an option to accommodate snowmobiling throughout the entire corridor.

Hunting

Hunting is allowed on state-owned lands during legal hunting seasons in accordance with Minnesota Rules, except where discharge of firearms is regulated by local ordinance or state park rules. Local governments and other agencies may restrict firearms, bow and arrow discharge or trapping through ordinances or other controls. These restrictions take precedence over state trail rules. Minnesota Rules for hunting related to state trails states:

“No firearm or bow and arrow shall be discharged within the trail at any time, except for the purpose of lawful hunting during the period from September 15 to March 30 only. No rifle, shotgun with slug, or bow and arrow shall be discharged upon, over, or across the trail treadway at any time.”

Additionally, the trail could provide public access to hunting lands adjacent to the trail.

Education and Interpretation

Use of the state trail for natural and cultural resources education, both for individual trail users and formal groups, is encouraged. Schools or organizations that wish to use a trail can work with DNR staff on specific projects. Interpretive displays on the environment and history of the area can enhance trail users’ experience.

Accessibility

The trail will be accessible to people with disabilities wherever possible. Grades in excess of 5 percent may be unavoidable in some locations where the trail must match a parallel transportation corridor or where one of the exceptions in the Federal accessibility guidelines is met.

People can use wheelchairs (manually-operated or power-driven, including electric scooters) and manually-powered mobility aids (such as walkers, crutches, canes, or braces) on all state trails. People with a mobility disability can use other power-driven mobility devices on state trails in accordance with DNR policy (www.mndnr.gov/accessible_outdoors/opdmd/index.html).

Water Access

The state trail may provide improved or additional public access to area lakes and rivers. Water access could include opportunities for shore fishing or carry-in access for paddlers. This is a secondary trail use that is dependent upon specific trail alignments and compliance with wild and scenic river corridors.



3. TRAIL ROUTES

Overview of Search Corridors

The Oberstar State Trail is one portion of the Willard Munger State Trail system, which includes several authorized state trails between St. Paul and Duluth. The Gateway State Trail is authorized to extend between St. Paul and Taylors Falls and 18 miles are developed between St. Paul and Pine Point Regional Park. The Willard Munger State Trail is currently developed between Hinckley and Duluth. The Oberstar State Trail fits between these two trails and is authorized to extend from Chisago County to Hinckley, in Pine County.

The goal of completing an off-road trail between St. Paul and Duluth emerged during the planning process. This plan includes several alternative corridors to fill a gap in the trail network between Taylors Falls and Hinckley. The Oberstar State Trail, in conjunction with other regional and state trails, could complete a connection between St. Paul and Duluth.

This plan identifies several search corridors for the Oberstar State Trail. Any route, or combination of routes, within a search corridor area is a potential state trail alignment. A specific route has not been determined and actual trail mileage will depend on which routes are selected during implementation.

Several potential routes are described in more detail in this chapter. Most of the potential routes generally follow road rights-of-way. While portions of the trail may be located within road rights-of-way, the goal is to find safe and scenic trail routes that both preserve and provide appropriate access to natural and cultural resources. Land acquisition from willing sellers will be necessary to accomplish this goal.

Planning Corridors

For the purposes of this plan, the trail has been divided into three planning corridors (see [Figure 4](#)):

- Corridor A: A route generally following County Highway 30 from North Branch to Pine County, with a regional trail connection to Taylors Falls.
- Corridor B: A route along the St. Croix River from Taylors Falls to Pine County.
- Corridor C: A route along County Highway 61 from Chisago County to Hinckley.

Either corridor A or B could be pursued along with Corridor C to complete a trail connection between Taylors Falls and Hinckley. Corridors A and B would provide different trail experiences and cater to different types of people. However, either alternative could provide a quality state trail experience. While both routes are included as options in this plan, one corridor will be selected and pursued through cooperation with area stakeholders.

Criteria for Trail Routes

Specific trail routes will be determined through implementation and further coordination with area stakeholders. The following criteria will be used to assess the viability of state trail route proposals.

- Provide key linkages to a regional network of trails.
- Afford sustainable access to natural, cultural and scenic resources.
- Connect to population centers and hubs of outdoor recreation.
- Provide safe and accessible routes that minimize exposure to vehicular traffic.
- Reduce, minimize and mitigate impacts to wetlands, flood plains, streams, rivers and other water resources.
- Avoid negative impacts on rare and endangered species and avoid fragmentation or disturbance of significant native plant communities.
- Capacity of partners to assist with acquisition and development.
- Potential for consolidated trail management responsibilities.

Trail Design Considerations

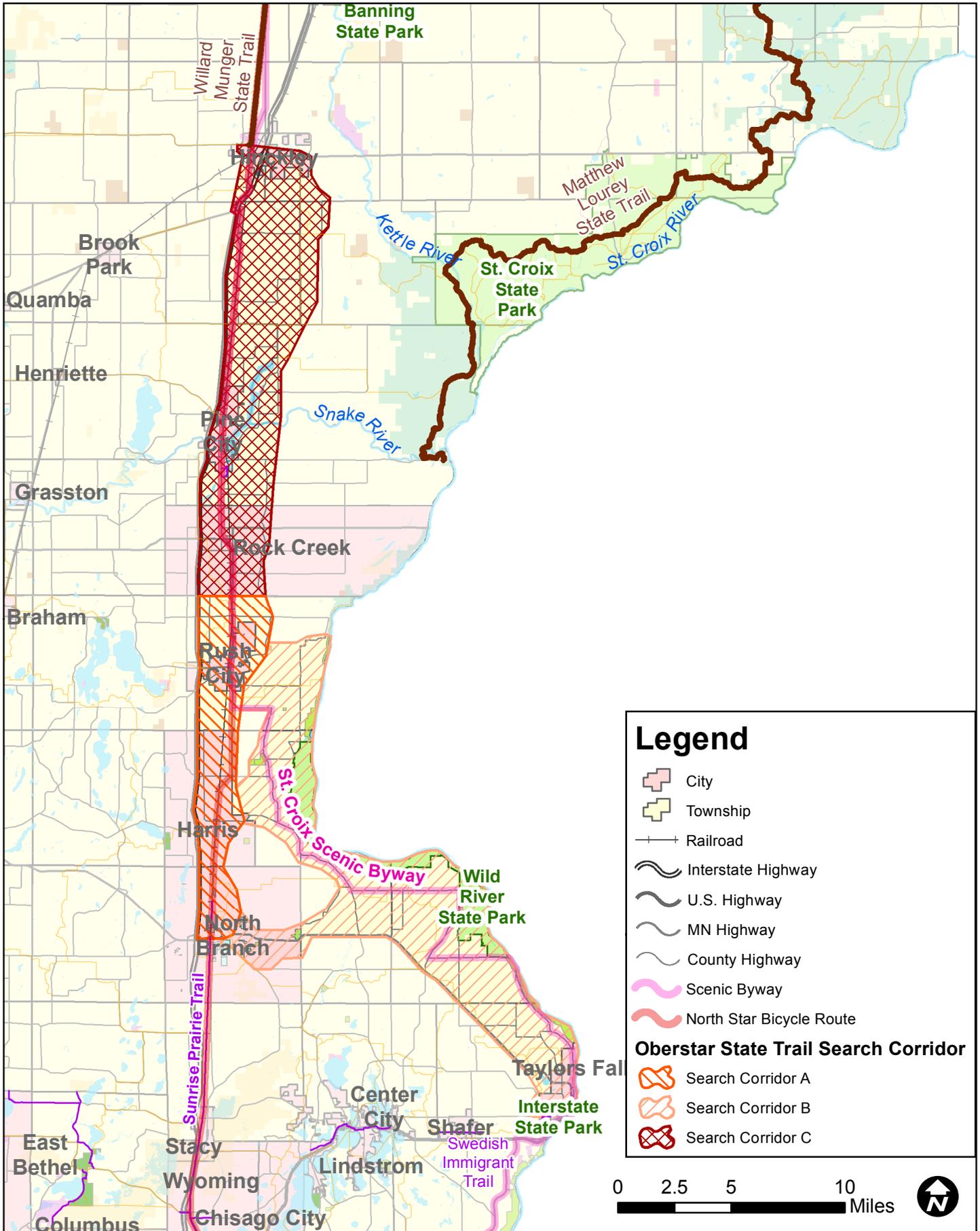
The majority of the Oberstar State Trail will be paved to accommodate the recommended trail uses. Compacted aggregate, or other natural surfaces, may be used in some circumstances.

State trail surfaces are typically 10 feet wide with 2-foot wide shoulders. This width is necessary to accommodate two-way traffic and maintenance equipment. The trail may be wider in high-use areas, or narrower in constrained areas. The cross-slope on the trail should not exceed 1.5 to 2 percent.



A typical Minnesota state trail with a paved surface and 2-foot wide cleared shoulders.

Figure 4: Oberstar State Trail Search Corridors



Legend

- City
- Township
- Railroad
- Interstate Highway
- U.S. Highway
- MN Highway
- County Highway
- Scenic Byway
- North Star Bicycle Route

Oberstar State Trail Search Corridor

- Search Corridor A
- Search Corridor B
- Search Corridor C



Corridor A: Taylors Falls to Pine County (West)

Corridor Overview

Corridor A extends from North Branch to Pine County along County Highway 30. Local or regional trails could connect the state trail to Wyoming, Taylors Falls, or other destinations along County Highway 30 and U.S. Highway 8. This corridor provides many opportunities to connect to population centers and local recreational facilities.

The entire length of Corridor A could be completed as a regional trail. Chisago County has completed master plans and begun development of the Swedish Immigrant and Sunrise Prairie regional trails. Both trails have been designated as regional trails by the Greater Minnesota Regional Parks and Trails Commission. Master plans for the Swedish Immigrant and Sunrise Prairie regional trails are available on the [Chisago County Trails Web page](#).

The Oberstar State Trail will not supersede or supplant existing and planned regional trail connections. However, portions of this corridor between North Branch and Pine County could be developed and managed as a state trail. State trail segments should be contiguous to avoid fragmented management responsibilities. Coordination of regional trail routes and state trail routes will provide trail users with a continuous, uninterrupted trail experience. In such cases, the DNR will work with local units of government to establish a coordinated approach to develop and manage the trail.

Potential Trail Routes

The state trail search corridor is bounded by Interstate 35 on the west, and local roads and topographical features to the east. While I-35 is included in the search corridor, the DNR will prioritize safe trail routes that take users away from highway noise and congestion.

The Sunrise Prairie Regional Trail is planned to extend along U.S. Highway 61, County Highway 30, and the St. Croix Valley railroad to the Pine County border. Fifteen miles of this route have been developed on an abandoned railroad grade between Washington County and North Branch. The City of North Branch developed a portion of the trail on the east side of County Highway 30 from Birch Street to Golden Avenue. The remaining planned routes for the Sunrise Prairie Regional Trail could be considered as potential state trail routes.

A trail route along the eastern edge of the corridor could offer an alternative to a trail along County Highway 30. The trail could follow Hemmingway Avenue, near the bluff edge, from North Branch to Harris. There may be an opportunity for trail development at the top or the bottom of this bluff. This wooded bluff provides significant wildlife habitat and serves as a visual amenity.

This route would continue along County Highway 30 between Harris and Rush City. Upon reaching Rush City, a route could be located along Alger Avenue, Bremer Avenue or Rush Creek to connect to Rush City's downtown area. The route could exit Rush City to the northeast along County Highway 55 until reaching Pine County.



Typical view of the County Highway 30/61 right-of-way.

DNR will consider other trail routes prior to developing state trail connections in this corridor. Other routes will be considered to ensure the state trail provides a safe and accessible experience to users. Additional routes may minimize trail users' exposure to vehicular traffic and have more potential to provide access to scenic areas and natural resources.

Corridor B: Taylors Falls to Pine County (East)

Corridor Overview

Corridor B is an alternative corridor between Taylors Falls and Pine County. The trail search corridor generally follows the St. Croix River from Taylors Falls to Wild River State Park. The trail corridor could rejoin Corridor A in North Branch, Harris or Rush City, before ending at Pine County. Corridor B will connect to fewer population centers than Corridor A, but it has more opportunities for connections to recreational hubs and scenic areas.

The majority of this corridor would likely be developed as a state trail. There are few existing trails within this corridor. Several Wild River State Park trails have potential to be used as a portion of the state trail route, but would require further evaluation.

Potential Trail Routes

Two primary routes in this corridor could extend between Taylors Falls and Sunrise Road. One follows the St. Croix River and the scenic byway while the other would follow State Highway 95.

The trail could connect to Taylors Falls in several locations, though a connection to downtown is preferred. A connection to downtown could follow River Road, Chisago Street or Bench Street. This route would connect to the Riverwalk and the potholes area of Interstate State Park. Alternatively, the trail could connect to the upper area of Taylors Falls along Upland Road or Mulberry Street. A connection could be made through on-road bicycle routes and sidewalks if an off-road route cannot be completed.

A trail route along the St. Croix River would generally be located parallel to the St. Croix Scenic Byway. This route could follow County Highway 16 or Vista Road when exiting Taylors Falls. The route continues along highway 16 until reaching Wild River State Park.

The most feasible state trail routes through Wild River State Park are located in the southern and eastern portions of the park. State trail routes are not recommended in parts of the park that are north and west of 410th Street. Topography, wetlands, rare species, significant native plant communities, water resources, and private inholdings all limit potential state trail development within park boundaries.

One potential option is for the trail route to enter the park near the main park entrance. This route could continue along Park Trail until connecting to the trail center. The state trail route could continue along Old Logging Trail to the campground area. The state trail could exit the park near 410th Street. Alternative entry points from the south of the park include Military Road, Silver

Avenue or Reed Avenue. Multiple corridors may be an option to accommodate all uses in this area because state trail routes within Wild River State Park will not accommodate snowmobiling.

Another option is for the trail to wrap around Wild River State Park on county highways 12 and 81 or River Road. The trail could continue along these routes until reaching Sunrise Road. A spur trail could be developed to connect the state trail to the trail network in Wild River State Park.

An alternative route could follow St. Croix Trail/State Highway 95 from Taylors Falls to Sunrise Road. This route is less desirable because it takes users farther away from the river and follows a roadway with more traffic. However, trail development may be more feasible within the existing 150 foot wide highway right-of-way.

This corridor will join the route described in Corridor A before entering Pine County. There are three potential areas to make this connection.

First, the trail could travel upstream along the Sunrise River until reaching North Branch. Parts of this route could follow Wilcox Road, Sunrise Road, St. Croix Trail or Lincoln Trail. A combination of on-road bicycle routes, sidewalks and local trails could be used to connect the state trail to downtown North Branch and the Sunrise Prairie Regional Trail.

Second, the trail could join the Sunrise Prairie Regional Trail corridor near Harris. The trail route would continue along Sunrise Road, past Sunrise and Wild River State Park.

Third, the trail could connect to the Sunrise Prairie Regional Trail corridor in Rush City. This connection could be made along 500th Street, Blueberry Trail or County Highway 55. The grade of the former Blueberry Special railroad line is a unique opportunity for trail development in this area.

The second and third options would require the trail to continue north and west from Sunrise. This potential route runs alongside Wild River State Park, but state trail development is not recommended within this part of the park. This state trail connection would require land acquisition outside of the Wild River State Park boundaries. Trail routes along Government Road, Kelly Avenue and River Road could be options.

After connecting to North Branch, Harris or Rush City, the trail route would continue to Pine County along routes described in Corridor A.

Corridor C: Chisago County to Hinckley

Corridor Overview

This corridor will connect the Sunrise Prairie Regional Trail with the Willard Munger State Trail in Hinckley. The corridor begins at the boundary of Pine and Chisago counties, where the planned corridor for the Sunrise Prairie Regional Trail ends. The corridor generally goes north along County Highway 61. This segment will cross Interstate 35 and the St. Croix Valley Railroad. Alternative

routes also have potential to connect local points of interest and follow a scenic route.

Potential Trail Routes

The first potential trail route in this corridor follows County Highway 61 from the county line to Hinckley. The County Highway 61 right-of-way is typically 150 feet wide. This may allow for portions of the trail to be constructed within the existing public right-of-way.

The route will begin at the county line and travel along County Highway 61 through Rock Creek and into Pine City. The route through Rock Creek could include a connection to city hall and Lions Park.

Pine City completed a feasibility study and design for a trail running north and south through the community. A segment of this trail was constructed near the Pine City High School. The remainder of this planned trail alignment could be used for a state trail route through the city. The route would extend north from Pine City High School, past the Pine Technical and Community College, and follow Railroad Street to Robinson Park. The route would cross the Snake River alongside Main Street and connect to Voyageur and Riverside parks. The route then extends along Main Street and the railroad, until exiting Pine City.

Other trail routes could also be pursued through Pine City or around Cross Lake. A route on the west side of Cross Lake could follow County Highway 55 and a route on the east side of the lake could follow County Highway 9/Cross Lake Road. A connection to downtown Pine City is recommended regardless of which trail route is completed. A connection could be made with a combination of on-road bicycle routes and sidewalks if an off-road route is not feasible.

This route will continue parallel to highway 61 through Beroun and Mission Creek. Shared crossings of I-35 could be explored at highway 61 and the St. Croix Valley Railroad. This trail route would continue along highway 61 through the City of Hinckley. A combination of facilities could be used to provide a trail connection to the Willard Munger State Trail trailhead on 2nd Street NW.

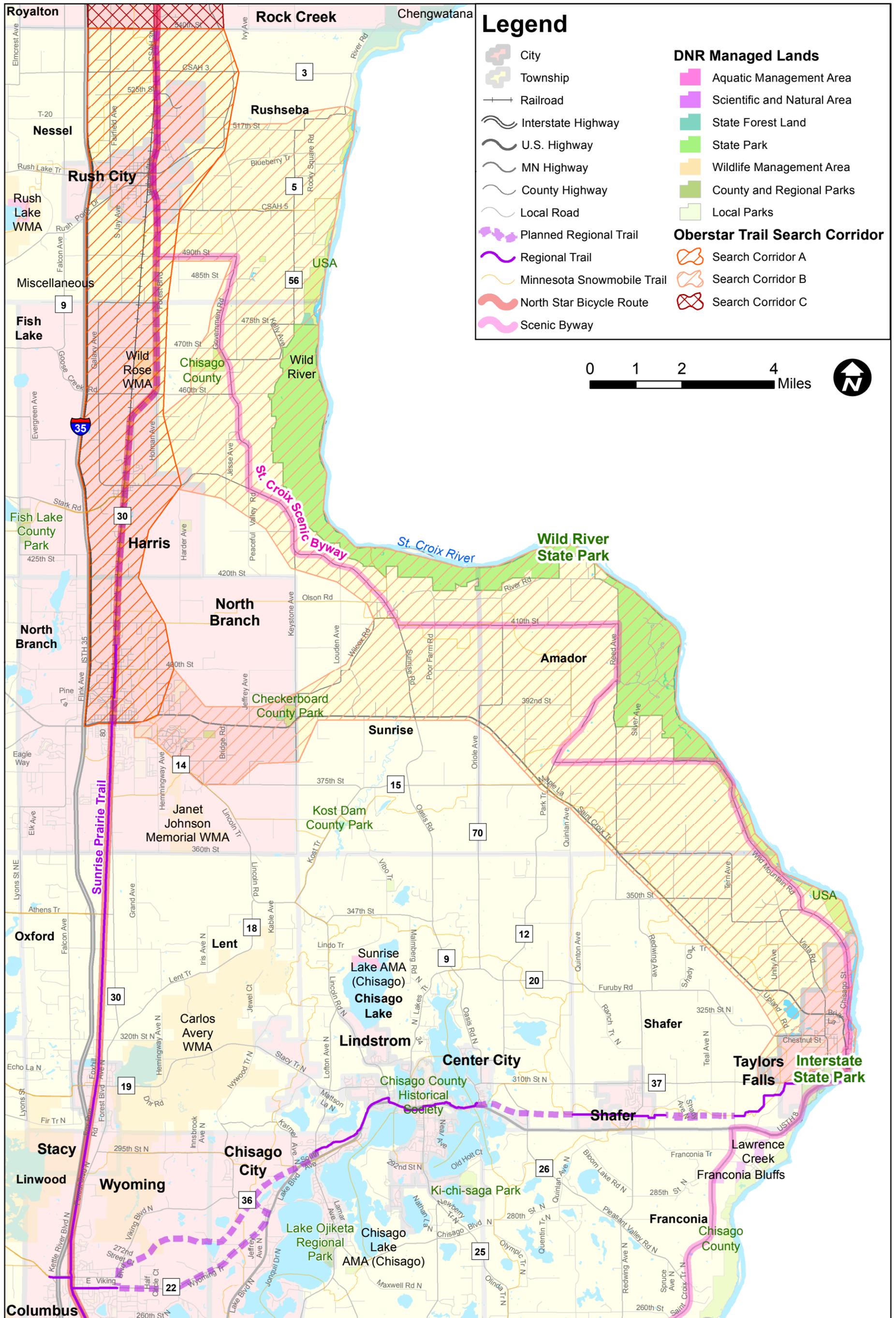
Alternatively, the trail could continue on the east side of I-35 between Mission Creek and Hinckley. This route could travel cross-country or follow township roads. This route would enter Hinckley near Grand Casino Hinckley. The trail could cross over I-35 along Fire Monument Road or under I-35 near 1st Street NE.

A second trail route follows a more easterly route, away from I-35 and County Highway 61. This route is aligned with topographical features and small streams. This route could be located along Government Road until entering Pine City at East Cross Lake or St. Croix roads. This route could utilize a variety of local roads, including Hinckley Road and Cedar Creek Road, until reaching the Grand Casino Hinckley area. A connection to downtown Hinckley and the Willard Munger trailhead could be completed along Fire Monument Road or 1st Street NE/Old River Road.

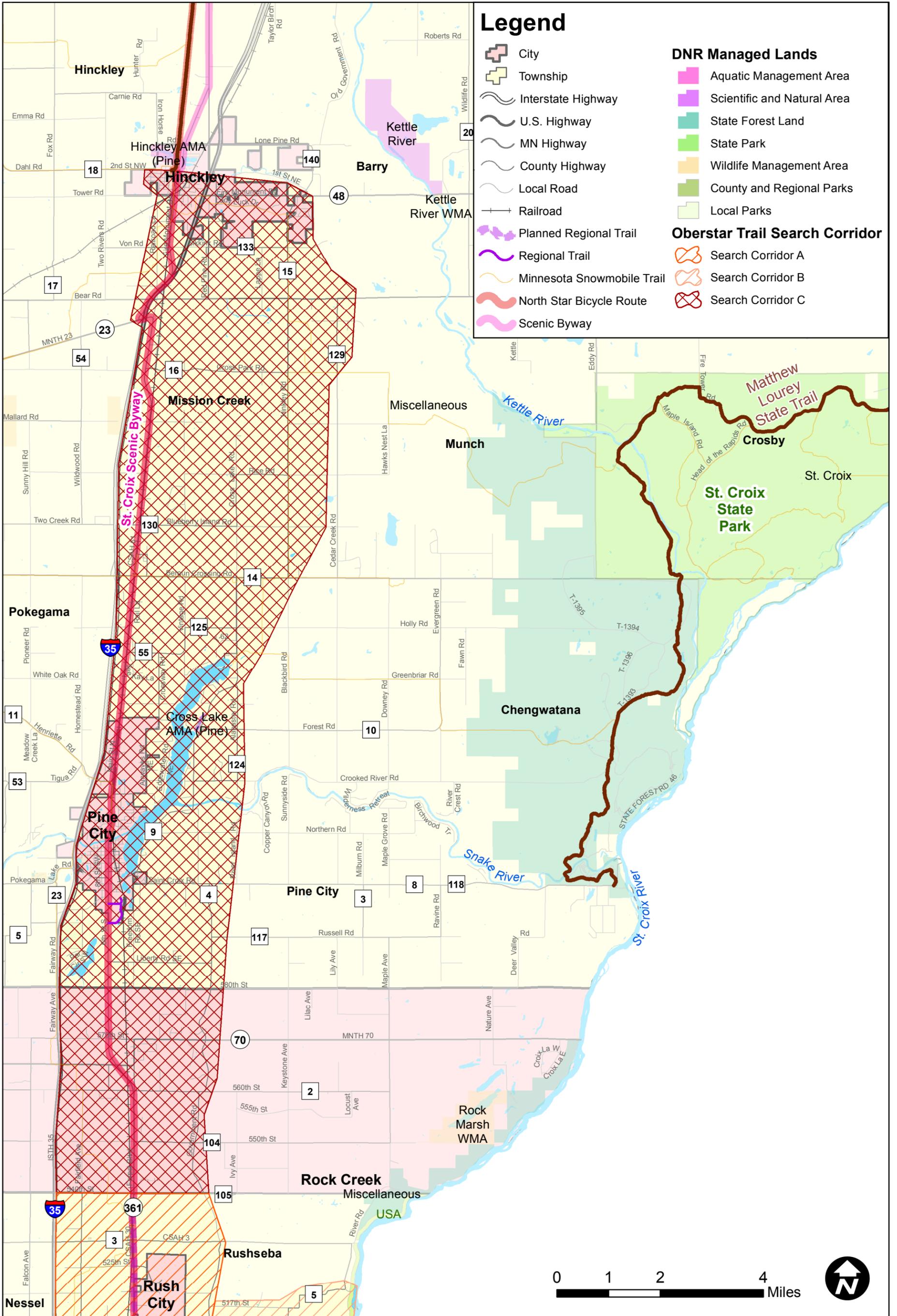


County Highway 61 curves under the St. Croix Valley Railroad north of Rock Creek.

**Figure 5: Corridors A and B
Taylors Falls to Pine County**



**Figure 6: Corridor C
Chisago County to Hinckley**



4. COMMUNITY AND RECREATIONAL CONNECTIONS

Corridor A

Taylor Falls

The City of Taylor Falls is situated at the Dells of the St. Croix, marking a transition in geological exposures. The potholes and other geological formations have drawn tourists to this area since the 1850s. The geological transition also meant that Taylor Falls was the northern limit for travel up the St. Croix River. Taylor Falls was an early hub for logging and the falls now generate hydroelectric power. Taylor Falls has a population of 976, according to the 2010 census.

Historic, geologic and scenic resources play a large role in the community today. Interstate State Park accounts for the majority of public land and recreational opportunities within the city limits. Taylor Falls has a system of existing and planned trails that have potential to complete connections to the Oberstar State Trail.

City parks, including North and South Lions, Heritage, Cherry Hill and Bryant Woods Park Reserve, have potential to serve as trailheads for state trail routes exiting Taylor Falls to the north. Taylor Falls Memorial Community Center could serve as a trailhead for trails traveling west or north from the city.

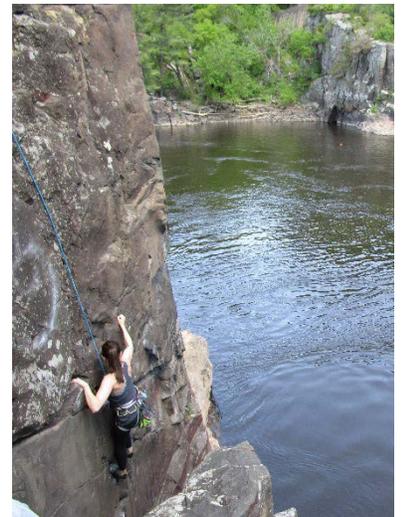
Interstate State Park

In the 1800s, the threat of mining the St. Croix Dells prompted leaders from Minnesota and Wisconsin to preserve the Dells of the St. Croix River. The first interstate (Minnesota and Wisconsin) park in the nation was established. The Minnesota and Wisconsin legislatures established the park in 1895 and 1900, respectively. Today, visitors can see both sides of the St. Croix River at Interstate State Park in Minnesota and Wisconsin.

People visit the park primarily to see unique geological features, like the dells, potholes and cliffs. Visitors can explore these features on park trails, from the St. Croix River, or by rock climbing. Most of the park's use is concentrated in the northern section near the most significant geological features. A campground, water access site, and additional trails are located in the southern part of the park.

Swedish Immigrant Regional Trail

The Swedish Immigrant Regional Trail is planned to extend about 20 miles between Wyoming and Taylor Falls utilizing an abandoned railroad grade located along U.S. Highway 8. The trail will also connect to the cities of Chisago City, Lindstrom, Center City and Shafer. The trail connects to the Sunrise Prairie Regional Trail on the west and Interstate State Park on the east. The Gateway State Trail has potential to connect to the Swedish Immigrant Regional Trail in the future. The Swedish Immigrant Regional Trail could be used to connect points of interest to the Oberstar State Trail route.



A climber scales a route above the St. Croix River.

Sunrise Prairie Regional Trail

The Sunrise Prairie Regional Trail is planned to extend about 30 miles through Chisago County along County Highway 30. The trail will connect to the cities of Wyoming, Stacy, North Branch, Harris and Rush City. The southern half of the trail has been developed on an abandoned railroad grade, and connects to the Hardwood Creek Regional Trail in Washington County. This regional trail could be used to connect points of interest to the Oberstar State Trail route.

North Branch

North Branch, named for the North Branch of the Sunrise River, was established as a city in 1994 after a long history of township and village divisions and consolidations. The community is built on a flat, post-glacial sandplain. It began as a small railroad station, which grew and developed into a potato farming community, and eventually into a city.

The city manages over 230 acres of parkland at 19 locations. Residents and visitors can also utilize several nearby open spaces, including school district grounds, North Branch Golf Course, Checkerboard County Park and Janet Johnson Wildlife Management Area.

The Sunrise Prairie Regional Trail currently terminates in North Branch. Chilson Park and Central Park serve as access points to the trail. Potential trailheads could be located at Tower Park, Riverwalk Park, Northwoods Park, Roger Johnson Memorial Park, Harder Park or Checkerboard County Park.

Harris

Harris is a rural community with a population of 1,123. The community center is located near I-35 at the intersection of county highways 9 and 30. The city, named after an officer of the St. Paul and Duluth Railroad, was incorporated in 1882.

Harris is a planned connection for the Sunrise Prairie Regional Trail. Schoolhouse Park has a shelter and picnic facilities that are available for rent. This park is a potential trailhead location.

Rush City

Rush City was incorporated in 1873 after pioneers settled the area because of fur trapping, logging and farming. The city was named because of the abundance of bulrushes and other aquatic plants in the area. Agricultural business, education, manufacturing, retail and corrections are important industries in the city's economy today.

Rush City has several park and recreation facilities. A complex of open space used for multiple activities is located around Rush City Schools and the Chisago County Fairgrounds. The city maintains open space with naturalized trails along Rush Creek. Other local or neighborhood parks are located throughout the community.



Bicyclists ride on the Sunrise Prairie Regional Trail in North Branch.

Potential trailheads could be located at City Park, Rush Creek Park or the open space near Rush City Schools. Walter Hauglie Memorial Park, in Rushseba Township could also be a point of interest along the trail route.

Corridor B

Corridors A and B have potential to connect many of the same communities and recreational facilities. See descriptions for Taylors Falls, Interstate State Park, Sunrise Prairie Regional Trail, North Branch, Harris and Rush City under [Corridor A](#).

Local Connections

Corridor B travels through more remote areas that are less populated. Consequently, Corridor B would offer fewer and less frequent amenities for trail users than Corridor A. However, several communities, non-profit organizations and private businesses in the area could provide services like food, restrooms and camping for trail users.

Existing services are located primarily along State Highway 95, County Highway 16 and County Highway 9. Clusters of services are provided in the communities of Sunrise and Almelund, including Carl Almquist Field. Several water access sites along the St. Croix River, managed by the National Park Service and other agencies, could potentially serve as state trail access sites.

Sunrise

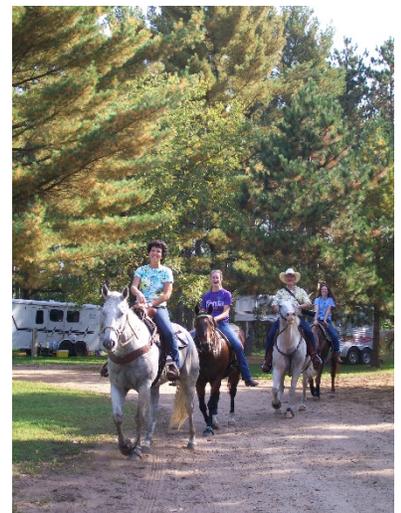
Sunrise Township is located just east of North Branch, on the banks of the Sunrise and St. Croix Rivers. The Sunrise Town Hall is Minnesota's oldest government center where meetings are still held. The Sunrise Landing is located about two miles downstream, near the confluence of the Sunrise and St. Croix rivers.

Wild River State Park

Wild River State Park was established to protect the natural and cultural resources and to provide recreational opportunities along the St. Croix River. The park's name "Wild River" is derived from the fact that the St. Croix River was one of the original eight rivers protected through the Wild and Scenic Rivers Act of 1968. The park encompasses over 6,500 acres along 18 miles of the St. Croix River.

The park provides opportunities for semi-modern camping, group camping, equestrian camping, backpack camping and canoe camping. Visitors seeking modern amenities can reserve the guest house or one of six camper cabins. A 2.5 mile paved trail links the trail center, visitor center, picnic area and campground. The entire trail system includes 35 miles of trails for a variety of non-motorized uses.

The Wild River State Park Management Plan recommends a spur trail connection to regional and state trail systems. A management plan amendment would be required if state trail development within the park consists of more



Horseback riders depart from the horse campground at Wild River State Park.

than a spur trail connection. State trail development is not recommended in portions of the park north and west of 410th Street.

A state trail route through the park should only be located within the southernmost part of the park. This will allow the trail to connect to important park facilities while minimizing impacts to resources and preserving the unfragmented northern portion of the state park. The trail center, visitor center and picnic area are potential trailheads for the state trail.

The Deer Creek section of the Point Douglas to Superior Military Road could be evaluated as a potential state trail route. This trail is listed on the National Register of Historic Places and is currently used for hiking, horseback riding, skiing, and maintenance access. The trail's natural surface is important to its historic integrity; this segment would remain unpaved if utilized as a state trail route.

Corridor C

Rock Creek

Rock Creek is a mostly rural and agricultural community of 1,628. The Rock Creek City Center is located at the intersection of county highways 70 and 30. The city center offers parking and a playground, and could be a potential trailhead location.

Pine City

Pine City serves as the county seat of Pine County and was incorporated in 1861. The city's early growth was due to trapping, lumber and the location of the railroad. The area economy is based on manufacturing, service work and agriculture. The city had a population of 3,127 in 2010.

Several city parks and trails could create connections and provide complementary facilities to state trail users. Voyageur Park, located on the north side of the Snake River, is a gateway to Pine City and provides fishing opportunities, a playground, walking trails, picnic shelters and disc golf. A public water access site on the Snake River is located across County Highway 61 from Voyageur Park. The Pine County Fair Grounds is also located in this area. These three locations could serve as a trailheads for the Oberstar State Trail. Chaleen and Robinson parks, Pine City Country Club, and the Pine City Civic Center are other potential trailhead locations.

A portion of the Twin-Cities to Twin-Ports trail concept has been completed within Pine City. The trail is about one mile long and is developed around the Pine City High School. The trail is planned to extend north and south through the city. This corridor is the preferred state trail route through the city. Additional local connections could be made through other locally planned and developed trails.

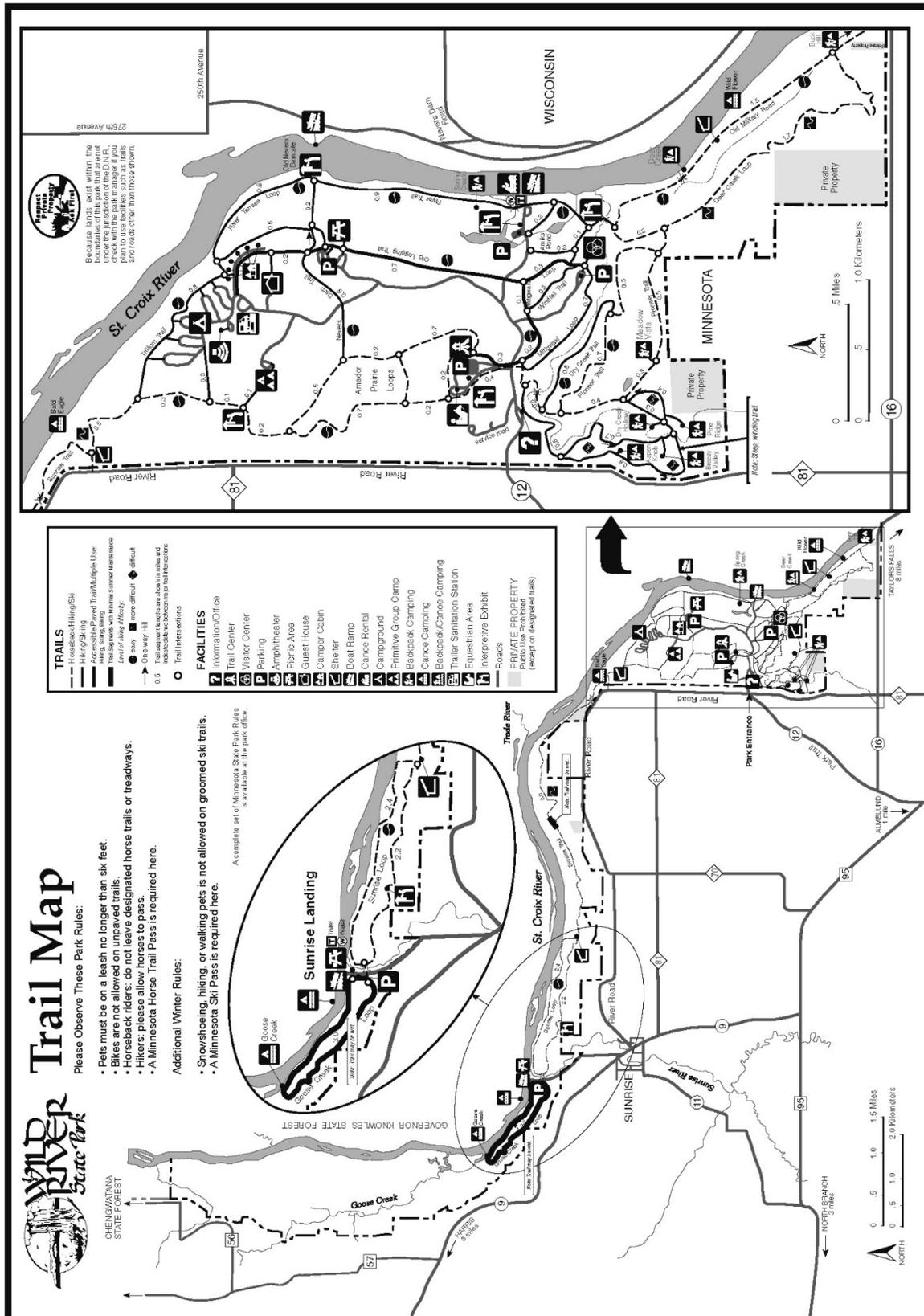


A group participates in a trail run at Wild River State Park.



This trail wraps around the Pine City High School and could connect to the Oberstar State Trail.

Figure 7: Wild River State Park Summer Map



Hinckley

Hinckley is located about halfway between St. Paul and Duluth along I-35. The city was originally founded in 1885 and prospered early due to trade posts and the logging industry. The city is well known for the Great Hinckley Fire of 1894. Agriculture became the predominant land use of the area after the fire. Grand Casino Hinckley is located in the city, along with many members of the Mille Lacs Band of Ojibwe. The city's population is 1,800, according to the 2010 census.

Several locations within the city could provide potential services to state trail users. A shelter, restrooms, parking, skate park and a playground are available at West Side Park. The Hinckley Fire Museum, Hinckley Fire State Monument, and the Grand Casino Hinckley campus may offer complementary services and experiences. Each of these locations could be potential state trail connections or trailheads.

The Willard Munger State Trail begins at a trailhead near 2nd Street NW and Dunn Avenue N, and travels north to Duluth. The Oberstar State Trail will extend south or east from this trailhead. Routes through the City of Hinckley will be identified and developed with local partners.



A group bicycles on the Willard Munger State Trail, which terminates in Hinckley.

5. TRAIL MANAGEMENT

Projected Trail Use

Trail usage can be anticipated by comparing the Oberstar State Trail to data collected from other outdoor recreation facilities in Minnesota, like the Hinckley to Duluth segment of the Willard Munger State Trail. Users of the Willard Munger State Trail are a mix of local and tourist users (tourist trail users travel over 50 miles to use the trail and/or have lodging away from their permanent home). Different portions of the Oberstar State Trail will exhibit different usage patterns. A trail corridor along the St. Croix River may have a higher proportion of tourist users while a corridor along county highways 30 and 61 may have more local use.

The Oberstar State Trail is expected to attract similar types of users as the Willard Munger State Trail. In 1999, the Willard Munger trail had 83,647 user hours between Memorial Day and Labor Day. A user hour is defined as one person spending one hour on the trail. The majority of summer user hours were on the trail segment between West Duluth and Carlton, which has the highest adjacent population density. This suggests that a corridor along Highway 30, through population centers, may have higher overall use than a corridor along the St. Croix River.

Tourist usage of the Oberstar State Trail could also be projected by examining the number of outdoor recreationists in the area. This can be approximated by studying the annual visitation of recreational areas near the trail corridor, as shown in the table below.

Table 1: Outdoor Recreation Area Visitation

	2012	2013	2014	2015	2016
Interstate State Park	307,729	295,056	330,645	380,283	338,950
Wild River State Park	171,996	166,334	169,722	181,848	184,657
St. Croix State Park	226,061	247,995	227,019	272,065	292,870
St. Croix National Scenic Riverway	221,028	342,942	671,582	623,122	708,258

Providing connections to these parks will promote usage of the trail by state park visitors. According to a DNR report, state park visitors also use state trails. On the portion of the Paul Bunyan State Trail near Lake Bemidji State Park, 65 percent of tourist trail users were found to also be visitors to the state park. Connections to regional, city and local parks will also encourage trail use. A contiguous trail, featuring natural landscapes and connections to parks and local communities, will create a desirable trail experience for tourist users.

State trails also provide important recreational opportunities for area residents. DNR surveys show that local users, who reside within ten miles of the trail, comprise a larger share of state trail use. Tourist use of state trails has declined since the 1990s while local use has increased or remained stable.

Table 2 shows past and projected population in nearby counties from 1990 to 2030. Population and population growth are generally greater in the southern half of the project area. This is evident by comparing the estimated and forecasted population for Chisago and Isanti counties with that of Kanabec and Pine counties. The population within Pine and Chisago counties is clustered along transportation corridors including I-35, U.S. Highway 8, and county highways 30 and 61. State trail routes near these corridors have potential for greater local use.

Trends in state trail use and local population growth point to the need to provide local recreational facilities while opportunities exist. The Oberstar State Trail will support an increased need for open space recreational opportunities by the growing area population.

Table 2: Estimated and Forecasted County Population

County	1990	2000	2010	2020*	2030*	Est. Percent Change: 1990-2030
Chisago	30,521	41,101	53,887	63,671	68,071	123%
Isanti	25,921	31,287	37,816	44,172	47,263	82%
Kanabec	12,802	14,996	16,239	17,924	18,312	43%
Pine	21,264	26,530	29,750	32,257	32,563	53%

*Forecasted population from Minnesota State Demographic Center

Trail Maintenance

Monitoring and maintenance of the Oberstar State Trail will be crucial to provide users with a safe trail experience and prolong the life of the trail. Additional resources for operations and maintenance will be required as trail development occurs. A routine monitoring and inspection schedule is important to catch maintenance issues at an early stage. A suggested inspection schedule for paved trails is provided in the DNR publication, *Trail Planning, Design and Development Guidelines* (2007a).

Maintenance activities are extensive and varied. Several common maintenance needs for Minnesota state trails are listed below. This list is generalized and specific practices must be tailored to local trail conditions.

- Mow vegetative buffers along the side of the trail. A two to three foot wide strip is a typical minimum requirement for most trails.
- Clear woody vegetation that encroaches on the trail corridor.
- Sweep and clear debris from the trail surface and corridor.
- Seal pavement cracks.
- Repair failing trail edges.
- Patch holes caused by erosion, culvert failure, subgrade problems, animals or other factors.
- Sealcoat pavement.

- Rehabilitate the trail surface. Hot or warm mix overlayments are possible solutions, but total reconstruction may be needed if the trail surface is substantially degraded.
- Maintain trailhead facilities.
- Place and maintain signage for the purposes of orientation, interpretation, safety and boundary enforcement.
- Maintain fencing and railings for trail safety and boundary enforcement.
- Repaint pavement markings.

While developing and maintaining the Oberstar State Trail, the Division of Parks and Trails will follow the guidelines established under the DNR *Operational Order 113 Invasive Species*, in consultation with the Division of Ecological and Water Resources. The guidelines prescribe methods for avoiding the introduction or spread of invasive species, and managing and treating infestations of such species.

Trail counting can be used to assist understanding of trail usage, inform investment priorities, and assist decision making for trail management. Trail counting can record and distinguish the type of trail use, direction of trail use and time of trail use. This information can be valuable for future state trail planning and management.

State trail monitoring and maintenance is conducted through an adaptive approach by the Division of Parks and Trails and partners. The division will partner with local units of government, or other organizations, to address annual maintenance needs. Volunteer state trail ambassadors can be a resource to monitor the trail, remove litter and small trail obstructions, and report significant issues to DNR staff. The DNR will coordinate with partners as trail development occurs to efficiently maintain the trail.

Maintenance Recommendations

Recommendation 1: *Conduct year-round inspections to detect maintenance issues before safety is compromised.*

Recommendation 2: *Monitor trail use to assist understanding of trail usage, inform investment priorities, and assist decision making for trail management.*

Recommendation 3: *Pursue local partnerships and additional maintenance funds necessary for maintaining the trail after it is developed.*

Recommendation 4: *Coordinate with partners to monitor trail conditions and meet operational and maintenance obligations.*

Information and Education

Trail User Orientation

Trail users must have reliable information about the trail system so they can make choices about destinations appropriate for their time frame, skill level, need for services such as food and lodging, links to regional or local trails, and the type of scenery and other recreational opportunities available along the route. This type of information should be displayed on information boards at

parking areas, in communities and at trail junctions. It should be available on maps and on the DNR website. Information should include distances between communities, options for other trail connections, and locations of services. If any significant deviation from the typical trail design occurs, such as when a trail enters a community, it should be noted on signs or informational kiosks to assist trail users in understanding what the trail experience will be.

Context specific information for signs and kiosks can be developed with local partners. Division standards and best practices for wayfinding and trail user orientation should be implemented throughout the trail.

Identification of Services

Trail users benefit from knowing where they can obtain services (e.g., medical assistance, Wi-Fi, telephones, gasoline, food, lodging, restrooms, campgrounds, repair facilities or other retail) and local businesses benefit from an increase in customers. A listing of the services available in each community displayed on information boards at trailhead locations could be developed, maintained and updated by local partners.

Trail Courtesy and Safety Information

Trail courtesy and safety information can educate trail users about trail rules, appropriate behavior, and actions users can take to promote safe trail use and reduce conflicts between trail users. Messages may include information about protecting the quality of the trail environment through reducing impacts on wildlife, vegetation and the trail surface. This information should be developed and posted at trailheads and other key locations.

Interpretation of Natural and Cultural Resources

The DNR Parks and Trails Division interpretive program *“forges emotional and intellectual connections to Minnesota’s natural and cultural heritage by provoking curiosity, encouraging discovery, and inspiring stewardship across generations.”*

The division’s interpretive services program connects people with the outdoors with self-guided and staff-led experiences. Professional interpreters present information in a variety of ways: personal experiences such as naturalist-led talks, special events and outdoor skills building programs; and self-guided experiences such as interpretive trails, exhibits, brochures and electronic media.

There are many natural, historic, and cultural resources of significance and interest throughout the corridor. Identifying interpretive themes can help tie together spatially separated interpretive sites and provide continuity in the messages presented. Providing information about these resources can add enjoyment to the trail experience.

Each state park has interpretive themes, programs and signs for interpreting its cultural and natural resources. The themes presented at Interstate and Wild River state parks can inform interpretive signage for the Oberstar State Trail. Coordination between park and trail interpretation and programming will improve trail users’ experience.

Many other sites, parks and museums offer educational and interpretive services that could complement those provided by the DNR. Trail users could be encouraged to visit some of these sites if they are seeking a particular experience.

Information and Education Recommendations

Recommendation 1: *Follow division standards and best practices for wayfinding and orientation. Provide community services information, trail orientation and wayfinding signage, trail rules, and trail courtesy information at key locations and intersections along the trail. Include universal trail use symbols to indicate shared uses along the trail.*

Recommendation 2: *Include completed segments of the Oberstar State Trail in interpretive planning for other state facilities in the area, so that users better understand the unique natural, historical and cultural features of the St. Croix River Valley and surrounding landscape.*

Recommendation 3: *Parks and Trails staff should cooperate with schools to use the trail for natural resources education purposes.*

Recommendation 4: *The DNR should partner with other organizations such as scenic byways, tribes, local historical societies, chambers of commerce and municipalities to develop themes and deliver interpretive services.*

Enforcement

Minnesota State Trails are safe and generate very few complaints. Surveys of state trail users indicate that 80 to 90 percent of state trail users have no problems or conflicts with other trail users. The most common problems that people identify include other trail users blocking traffic, problems with people's pets, and other generally discourteous behavior. A survey of law enforcement agencies and officers shows that trail incidences and unlawful activity on trails tend to be issues among users and depreciative behavior toward the trail, not issues of crimes against people or private property. Ninety-four percent of officers surveyed expressed that trails are as safe, or safer, than other public spaces and public recreation areas.

However, adequate enforcement is a vital aspect of maintaining a safe and secure trail environment. User conflicts, unauthorized use of the trail, and trail users trespassing were the most common concerns identified during the planning process, and are all likely areas to be addressed through enforcement.

Enforcement of state trails rules and regulations, information and education, trail design, trail maintenance, and the mix of trail uses are all factors that contribute to the maintenance of a safe, secure trail environment. The DNR has the primary responsibility for law enforcement on DNR-owned and operated recreation areas. Enforcement assistance is also sought from local police departments and county sheriffs, as necessary.

The DNR's goal is to provide an adequate level of enforcement to maintain a safe and secure trail environment, to encourage trail users to understand and obey trail rules, and respect other trail users and adjoining properties.

Enforcement Recommendations

Recommendation 1: *Provide an adequate level of enforcement via a multifaceted approach to help maintain a safe and secure trail environment, and to encourage trail users to understand and obey trail rules, and respect other trail users and adjoining properties.*

Recommendation 2: *Work with partners to develop on-site information that targets important trail courtesies and rules necessary for a safe and enjoyable experience.*

6. TRAIL CORRIDOR RESOURCES

Ecological Classification System

The Ecological Classification System (ECS) is part of a nationwide system for ecological mapping and landscape classification. The ECS classifies regions based on climate, geology, topography, soils, hydrology and vegetation information. There are six tiers to the ECS: provinces, sections, subsections, land type associations, land types and communities. The ECS allows resource managers to better understand the landscape and manage resources sustainably.

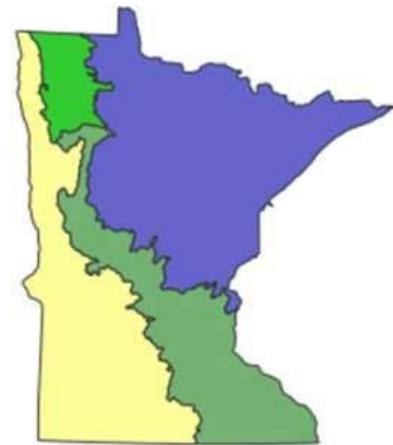
Ecological Provinces

Minnesota lies at the center of North America where the prairie, boreal forest, and eastern deciduous forest meet. There are four major ecological provinces in Minnesota: the Eastern Broadleaf Forest, the Laurentian Mixed Forest, the Prairie Parkland and the Tallgrass Aspen Parklands. All four are parts of much larger systems that cover major areas of central North America.

The Eastern Broadleaf Forest province, primarily made up of deciduous forest, extends eastward from Minnesota all the way to the Atlantic Ocean. The Laurentian Mixed Forest Province, largely consisting of coniferous forest, extends northward into Canada. The Prairie Parkland Province extends westward into the Dakotas and across the central plains of the United States. The Tallgrass Aspen Parklands Province represents the southern tip of a large province that extends north and west in the Canadian Prairie Provinces. The Oberstar State Trail search corridor is within the Eastern Broadleaf Forest and Laurentian Mixed Forest provinces.

These ecological provinces are divided into subsections – distinct landscapes of Minnesota, defined by vegetation, geology, and other resource criteria. Descriptions of the subsections are important for trail planning purposes because they provide the context for the trail alignment, trail development, resource management and interpretation recommendations. The Oberstar State Trail search corridor lies almost entirely within the Mille Lacs Upland Ecological Subsection. The part of the search corridor near North Branch and Harris is in the Anoka Sand Plain Ecological Subsection. A narrow strip of the search corridor along the St. Croix River is located in the St. Croix Moraine Ecological Subsection; the majority of this subsection is located in Wisconsin.

The following descriptions are drawn from the [DNR website](http://mndnr.gov/ecs) (mndnr.gov/ecs).



The four ecological provinces in Minnesota: Eastern Broadleaf Forest (green), Laurentian Mixed Forest (violet), Prairie Parkland (yellow), and Tallgrass Aspen Parklands (bright green).

Mille Lacs Uplands Subsection

This subsection covers the large area of Superior lobe ground moraines and end moraine in east-central Minnesota. The majority of the Oberstar State Trail search corridor, including portions along the St. Croix River and portions north of Harris, is located within this subsection.

The subsection is dominated by gently rolling till plains and drumlin field landforms. Brown and red till forms the parent material. In the southern portion, upland hardwood forests consisting of northern red oak, sugar maple, basswood, and aspen-birch were common before settlement. Presently, forestry, recreation, and some agriculture are the most common land uses.

Landform

This subsection consists primarily of Superior lobe ground moraine. The depressions between drumlin ridges contain peatlands with shallow organic material. There are also small areas of Des Moines lobe ground moraine in the southeastern portion of the subsection. A large end moraine in the center of the subsection forms the dam that created Mille Lacs Lake. In the northeast, there is another series of end moraines, which marked later advances and retreats of the Superior lobe.

Bedrock geology

Glacial drift ranges from 100 to 300 feet in depth over bedrock. Bedrock is locally exposed throughout the northern portion of the subsection, where depths are typically 100 feet or less. Bedrock consists of Middle to Late Archean and Early Proterozoic gneiss, amphibolite, undifferentiated granite, and metamorphosed mafic. At the southeastern edge of the subsection are Cretaceous marine shale, sandstone and variegated shale.

Soils

At the eastern end of the subsection, the end moraines and ground moraines have loamy soils. Typically, there is dense glacial till underlying most soils in this subsection. This dense till impedes water movement throughout the soil profile. The soils are described as acid, stony, reddish sandy loams, silt loams and loamy sands. The parent material in the Grantsburg (Des Moines lobe) portion of the subsection is more calcareous and finer textured than Superior lobe sediments. It is underlain by Superior lobe drift which is locally exposed. The soils are classified as Boralfs (well-drained soils developed under forest vegetation) and Ochrepts (poorly developed soils formed under forest vegetation) on the moraines.

Climate

This subsection has little moderation from Lake Superior. Total annual precipitation ranges from 27 inches in the west to 30 inches in the east, with growing-season precipitation ranging from 12 to 13 inches. Snowfall is relatively light – the location of the subsection, primarily southwest of Lake Superior, is not characterized by lake-effect snows. Growing-season length is quite variable,

ranging from 97 to 135 days, with the longest growing season in the south and the shortest on the outwash plains at the northern edge of the subsection.

Natural disturbance

Fire and windthrow were important natural disturbances in determining the vegetation of the subsection. Rooting depths for trees are shallow and windthrow is common because of shallow bedrock and dense basal till.

Anoka Sand Plain Subsection

This subsection encompasses the Anoka Sand Plain and sandy valley trains along the Mississippi River in central Minnesota. The Mississippi River and its valley forms the western boundary. The boundary of the Anoka Sand Plain forms the eastern and northern edges. Portions of the Oberstar State Trail search corridor between North Branch and Harris are located within this subsection.

This subsection consists of a flat, sandy lake plain and terraces along the Mississippi River. Recent mapping suggests that much of the sand plain, once thought to be fluvial, is probably lacustrine in origin. Low moraines are locally exposed above the outwash and there are small dune features.

Landform

The major landform is a broad sandy lake plain, which contains small dunes, kettle lakes and tunnel valleys. Topography is level to gently rolling. There are small inclusions of ground moraine and end moraine. The other important landform is a series of sandy terraces associated with historic levels of the Mississippi River. Terraces are also associated with major tributaries of the Mississippi.

Bedrock geology

Bedrock is locally exposed in the St. Cloud area. Surface glacial deposits are usually less than 200 feet thick. The subsection is underlain by Cambrian and Ordovician dolomite, sandstone, and shale.

Soils

Soils are derived primarily from fine the sands of the sandy plain. Most of these sandy soils are droughty, upland soils (Psammets), but there are organic soils (Hemists) in the ice block depressions and tunnel valleys, and poorly drained prairie soils (Aquolls) along the Mississippi River. Seventy to eighty percent of the soils are excessively well drained sands and another 20 percent are very poorly drained.

Climate

Total annual precipitation ranges from 27 inches in the west to 29 inches in the east, with growing-season precipitation ranging from 12 to 13 inches. The growing season length ranges from approximately 136 to 156 days, with the longest growing season in the south.

Natural disturbance

Fire and drought were important factors impacting the vegetation of the sand plain. Drought was found to cause mortality for two of the dominant species of the oak barrens and savannas, northern pin oak and bur oak. During severe periods of drought, vegetation cover was greatly reduced on portions of the sand plain, resulting in eolian erosion and sand dune movement.

Climate Change

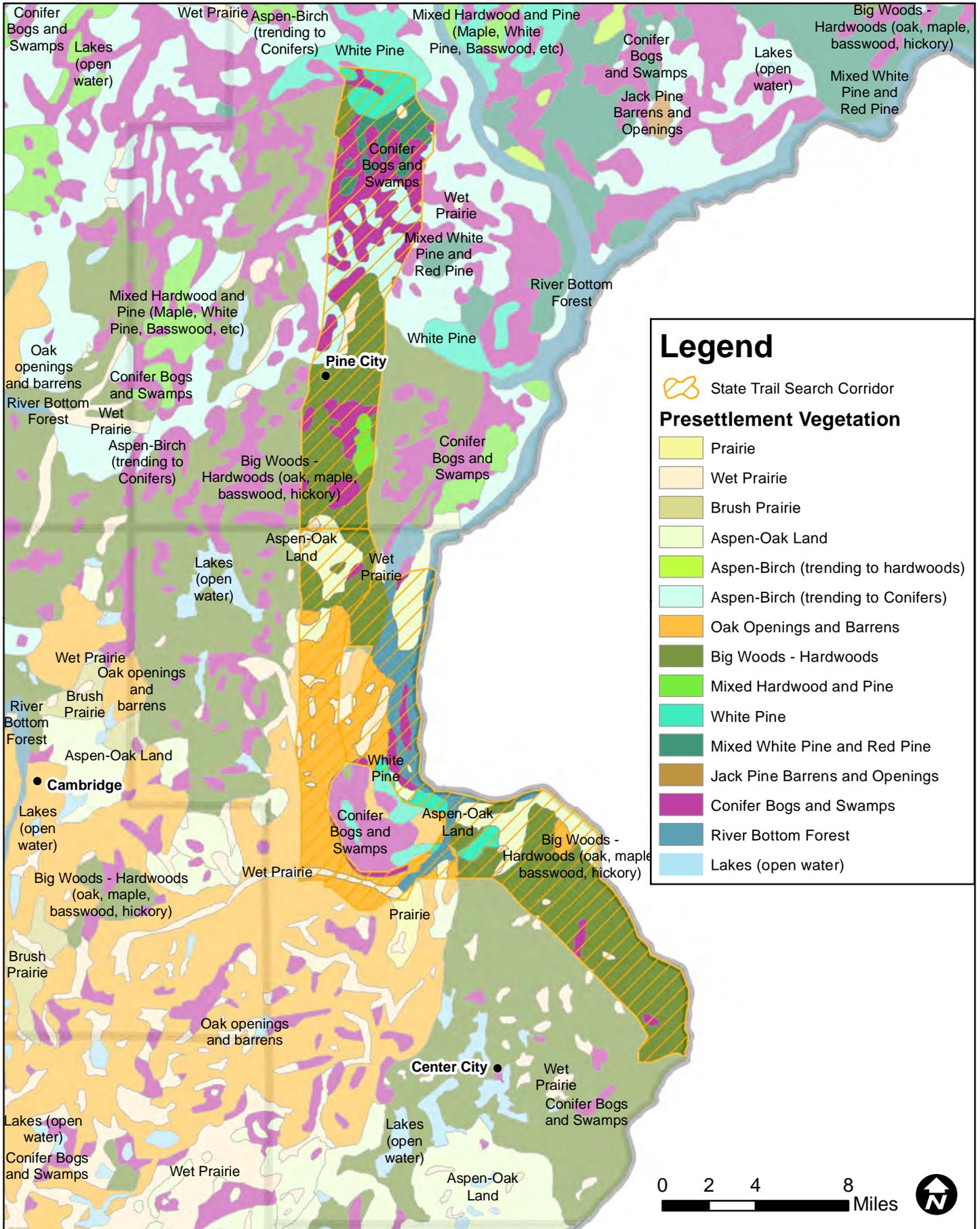
Climate change alters the character of the state's lands, waters, plants, fish and wildlife. It affects the DNR's ability to manage these resources for the long-term benefit of the public. The DNR's responsibility is to use the best available science to implement adaptation strategies that will minimize the negative impacts of climate change on the state's natural resources, outdoor recreation opportunities, and commercial uses of natural resources.

The DNR will develop and implement land management practices that sustain Minnesota's natural resources while helping to reduce future climate change by mitigating the environmental impacts of increased carbon emissions. These efforts will be guided by the DNR *Operational Order 131 Climate Adaptation and Mitigation in Natural Resource Management*. The DNR is committed to enhancing ecosystem resilience and reducing the negative impacts of climate change on the state's resources and outdoor recreation opportunities.

Climate change will impact temperature and precipitation patterns. The rate of increase of average annual temperature in Minnesota from 1970-2014 has been 5.0°F per century. Temperatures are expected to continue increasing into the foreseeable future with the greatest change reflected in winter minimums. Annual average precipitation is anticipated to increase by 3-5" per century. In addition, the number of heavy precipitation events has increased, resulting in more frequent and heavier flooding events.

Climate change is likely to impact outdoor recreation opportunities and state trail management. A decline in winter snowfall amounts and a shortened winter season could impact the feasibility of snow-based activities, like snowmobiling and cross-country skiing. Warmer temperatures in the spring and fall could extend the season for summer uses – an extended warm season may increase demand for bicycling, hiking and other traditional summer trail uses. Trail development near streams and rivers should be avoided or minimized, and if unavoidable, should utilize designs that accommodate more frequent and heavier flooding events.

Figure 8: Presettlement Vegetation



Vegetation

Presettlement Vegetation

Presettlement vegetation in the trail search corridor can be determined based on early historical records and F. J. Marschner's 1930 Original Vegetation of Minnesota map, based on interpretation of the Public Land Survey records from 1853-1854 (see figure 9). Marschner's vegetation types were generalized and simplified in 1988 – descriptions of the generalized classifications are included here.

Maple-Basswood Forest

Minnesota's maple-basswood forests are dominated by elm, basswood, sugar maple and red oak. The largest continuous area of maple-basswood forest in Minnesota at the time of the public land survey covered 3,000 square miles in the south-central part of the state. The early settlers called this area the "Big Woods." Smaller areas of this land cover occurred in southeastern and west-central portions of the state. The boundaries of this forest type largely follow natural fire breaks, like lakes, rivers and rough topography. Maple-basswood forests were present in large portions of the state trail search corridor to the north and southeast.

Oak Woodland and Brushland

Oak woodland and brushland was a common land cover in transitional areas between prairie and deciduous forest. Fire, more than landform or climate, was the significant factor influencing the location and extend of this community. This land cover was present in large portions of the state trail search corridor, especially to the south and west.

This vegetation type is often referred to as savanna. However, in Minnesota the image of a tallgrass prairie dotted with trees is more myth than fact. Study of the original land survey records led to a different interpretation. The oak woodland and brushland ranged from small groves of trees intermixed with prairie to a chaparral-like community of scrub forest and dense shrub thicket. The structure of the community was largely determined by soil conditions and frequency of fire. Oaks, especially bur oak and northern pin oak, were the dominant trees.

Floodplain Forest

Floodplain forests occupy both major and minor water courses throughout the state. The lowland sites occupied by these forests are subject to periodic flood and drought. Spring floodwaters enrich the soil as they deposit silt over the forest floor. Silver maple, willow and cottonwood are the dominant trees while poison ivy and stinging nettle are common on the forest floor. These forests were located along rivers in the search corridor, including the St. Croix and Sunrise.

Boreal Hardwood-Conifer Forest

The boreal hardwood-conifer forest occupied much of northern Minnesota. The dominant tree species, balsam fir, white spruce, black spruce, trembling aspen and white birch occur in pure or mixed stands. Species composition varies considerably in response to differences in site characteristics and natural fire cycles. This land cover was present in small portions on the north end of the search corridor.

Great Lakes Pine Forest

This forest community is characterized by eastern white pine and red pine trees and is found in northern and north-central Minnesota. Historically, tree composition and age structure of the pine forest were largely determined by natural fire cycles. In general, red pine was more abundant on coarsely-textured, dry sites prone to fire. White pine occurred more on mesic sites of lake edges and lower slopes less subject to fire. Within the state trail search corridor, this land cover was present near Hinckley.

Peatland

Peatlands remained scattered across northern and north-central Minnesota following drainage of ancient glacial lakes. Some of the largest peatlands remain relatively unchanged since presettlement times, despite attempts to drain them. Within the state trail search corridor, this land cover was present near in low-lying areas near Hinckley and Sunrise.

Upland Prairie and Prairie Wetland

Tallgrass prairie covered nearly one-third of Minnesota at the time of the public land survey in the 1850s. Grass species dominate prairies in upland areas while sedges and rushes are more prevalent in wetland areas. Prairie systems are more common in south and west Minnesota, though some prairie systems were interspersed in the trail search corridor.

Present Day Vegetation

The majority of the state trail search corridor has now been converted to agricultural uses like cultivated crops or pasture. Most developed land in the search corridor is concentrated along U.S. Highway 8 and county highways 30 and 61. Naturalized forest or wetland land covers remain in portions of the corridor, especially along the St. Croix River. Forestry and recreation are more common land uses in the northern half of the corridor and segments along the St. Croix River.

DNR staff have completed surveys to gain a better understanding of the status and distribution of Minnesota's native plant communities, flora and fauna. Native plant communities are classified in a hierarchy including ecological systems and native plant communities. A native plant community is a group of native plants that interact with each other and with their environment in ways not greatly altered by modern human activity or by introduced organisms. An ecological system is a group of native plant communities that share similar influences from ecological processes like natural disturbances or nutrient cycles.

There are nine ecological systems and 18 native plant communities represented in the state trail corridor. This section describes each of the ecological systems; a complete list of native plant communities can be found in [appendix C](#).

Acid Peatland System

The Acid Peatland System is widespread in the Laurentian Mixed Forest Province due to cool temperatures and an abundance of moisture and precipitation. It is in this environment that peat develops and thrives. The plants that inhabit these areas have adapted to conserve the scarce minerals and nutrients that the landscape provides. However, the Acid Peatland System has a very diverse ectomycorrhizal fungi population. This plant community can be encountered in Corridor B.

Fire-Dependent Forest/Woodland System

As the name suggests, Fire-Dependent Forest/Woodland Systems are heavily influenced by wildfire. The fire removes duff and debris from the forest floor, having a significant effect on nutrient availability. The plants that occur in this system have seeds or are opportunists, built to withstand fire and drought conditions. Many species of evergreens and conifers are known to occur here, as well as smaller deciduous shrubs and trees. The Fire-Dependent Forest/Woodland System can be encountered in and around search corridors A and B, in Wild River State Park and St. Croix State Park.

Floodplain Forest System

Floodplain forests occur on river or stream terraces that flood occasionally or annually. Floodplain forests are characterized by deciduous trees that are tolerant of saturated soils and frequent erosion and deposition of sediments. Common species include silver maple, American elm, cottonwood, black willow, ash, and basswood. These types of forests are found scattered throughout the search corridor.

Forested Rich Peatland System

Forested Rich Peatland Systems present anaerobic conditions, in which plant life is dominated by tall conifers and shrubs. The low temperatures, abundant precipitation and poorly drained soils inhibit plant decomposition, which allows for peat to accumulate. Because the peat is thick in these systems, plants do not root in mineral soil which limits mineral recycling. Forested Rich Peatland Systems are encountered within Corridor B, in Wild River State Park.

Marsh System

Marsh System plant communities occur throughout the Laurentian Mixed Forest and the state. They are characterized by consistent and stable standing or sluggish water. Water drawdown is not seasonal and coincides with drought conditions. This system provides high nutrient levels and oxidation of organic materials which allows diversity in plant life, predominately emergent species with extending vegetative and flowering structures. Common plants found in marsh systems are cattails, bulrush and arrowheads. This plant community type can be found in Corridor B, mainly around other wet or riverine ecosystems.

Mesic Hardwood Forest System

Mesic hardwood forest communities are characterized by continuous canopies of deciduous trees like sugar maple, basswood, and northern red oak. The dense canopy covers shade-adapted shrubs and herbs. They have typically well-drained soils, which allow for very high levels of respiration and nutrient recycling. Water and nutrient availability can be seasonally dependable. Mesic Hardwood Forest Systems can be encountered along the entirety of Corridor B.

River Shore System

River Shore Systems experience frequent flooding because they occur in riparian zones along rivers and streams. They are annually inundated with spring flooding and heavy rains, leaving sparse vegetation. The plants that withstand ice scouring and water disturbance are subject to erosion, and must therefore establish strong root systems. Annuals are common along exposed sediments, once the seasonal flooding has receded. River Shore Systems are common throughout the Laurentian Mixed Forest Province, and can be seen in Wild River State Park.

Upland Prairie System

Upland prairies are herbaceous plant communities dominated by tall grasses like big bluestem, mid-height grasses like prairie dropseed, and occasionally by various sedges and semi-shrubs like leadplant or prairie rose. Prairie systems in Minnesota are closely tied to the frequent occurrence of fire. Bush-prairie and savannah communities can occur in areas where fire is less severe or common. Bur oak, northern pin oak, American hazelnut, and smooth sumac are the most common woody species in savannah and bush-prairie communities. Prairie and savanna communities can be found in Wild River State Park.

Wet Forest System

Wet forest communities inhabit narrow zones along lakes, rivers, and peatlands. There is a steady supply of water beneath the mineral soil, which can be anaerobic and chemically reducing. Plants in this system will often include black ash or white cedar, mountain maple, and forest herbs on raised hummocks. Wet Forest Systems are common within search corridors A and B.

Wet Meadow/Carr System

Wet meadow/carr communities are typically dominated by grasses and sedges, with scattered shrubs where dry enough. Seasonal flooding is normal, with drawdown usually in the summer months. Wet Meadow/Carr Systems are common in the Laurentian Mixed Forest and statewide. They are known to occur throughout Corridor B and around Corridor A.

Vegetation Management Recommendations

Recommendation 1: *Avoid threatened, endangered, or special concern species and high quality plant communities, as defined by the Minnesota Biological Survey maps and similar, subsequent surveys.*

Recommendation 2: Restore, or if necessary, establish native woodland, prairie, or wetland along the trail to supplement native plant communities already present in the trail corridor, utilizing locally sourced seed and plant stock. The trail can be a tool to improve habitat quality by decreasing edge, increasing connectivity, and enlarging existing habitats. Resource management may be coordinated with adjacent land owners.

Recommendation 3: Follow the DNR Operational Order 113 and current Parks and Trails Division guidelines for preventing and controlling the spread of invasive species on Parks and Trails Division-administered lands.

Recommendation 4: Pursue trail alignments that avoid fragmentation of high quality plant communities.

Recommendation 5: Use vegetation to screen unsightly areas, deter trespassing, and to assist in retaining snow cover on the treadway, where appropriate.

Water Resources

The state trail search corridor includes parts of three watersheds that each drain into the St. Croix River. The St. Croix River is a significant water resource and important recreational amenity for the region. Many lakes, wetlands and rivers are located along the trail corridor, as depicted in [Figure 10: Water Resources](#). These water resources are scenic, educational and historical resources. They also provide recreational opportunities for trail users seeking fishing, canoeing, kayaking, boating and swimming opportunities.

While these water features create opportunities for the trail, they also present constraints to trail development. Crossing bodies of water should be avoided where possible due to resource impacts and high construction costs of bridges or other structures. When locating the trail route, wetlands must first be avoided, then the impact minimized and mitigated. In addition to increasing the costs of development, disruption of water resources can also lengthen the implementation process.

Lower St. Croix Watershed

The Lower St. Croix watershed covers 586,000 acres and is located in northwest Wisconsin and east-central Minnesota. It is unique in that every stream in this watershed flows directly into the St. Croix River or Lake St. Croix. The drainage area contributes to the river's lower 52 miles from Taylor Falls and St. Croix Falls to the convergence with the Mississippi River. The cities of Stillwater, Afton, North Branch, and Taylors Falls are located in the watershed. Areas of the state trail search corridor that are south of Pine City are within this watershed.

Land use in the watershed is predominately agricultural. However, development pressure is steadily increasing as the Twin Cities metropolitan area continues to sprawl to the north in Minnesota and to the west in Wisconsin. These land uses contribute to concerns about surface water quality, groundwater quality and quantity, as well as stormwater and wetland management.

There are numerous lakes located in the central and northern portion of this watershed. Most lakes are interconnected with outlets and channels eventually

flowing in the Lower St. Croix River. The most significant lakes in the watershed are Rock, Rush, Goose, Sunrise River pools, Big Marine, Forest, Green, Chisago, North Center, South Center, Carnelian and Elmo. Stormwater retention ponds concentrated near urban centers are numerous throughout the central and southern regions in this watershed. Small impoundments are also a part of the Sunrise River System. These lakes and impoundments contribute to the biological communities of the adjacent tributaries.

There are numerous springs along the St. Croix River corridor, creating cool water and coldwater conditions. There are currently 15 designated trout streams in the watershed because of the presence of springs in forested areas. Parts of the Sunrise river system are designated as trout streams or protected trout stream tributaries.

Several lakes and Lake St. Croix do not meet water quality standards for beneficial uses such as aquatic recreation and swimming. Phosphorus is the primary lake pollutant, which causes algal blooms in summer months. Stream impairments range from biological fish and macroinvertebrate impairments and bacteria. Pollutants mainly reach rivers and lakes through the urban and rural runoff.

The St. Croix River is federally designated as a wild and scenic riverway, and is also part of the state water trail system.

Snake River Watershed

The Snake River begins about six miles north of McGrath, in the Solana State Forest in southern Aitkin County. It flows 90 miles south and east, and about 560 feet down, to the St. Croix River east of Pine City. This largely forested watershed is 646,000 acres in size. Most of the state trail search corridor north of Pine City is located within the Snake River watershed.

Almost half of the watershed is forested and about a quarter is grassland, pasture or hay. Remaining land covers include wetlands, agriculture and development. Development pressure is moderate, with some farms, timberland and shorefront being parceled out for development, recreation or vacation homes. Slightly less than 75 percent of the land in the watershed is privately owned and about 25 percent is owned by the state of Minnesota. The remainder is tribal, county or federally owned land.

The Snake River is a state water trail and water levels fluctuate greatly. The river is gentle with few rapids between Mora and Pine City. Class I-III rapids are present from Cross Lake to the St. Croix River.

Kettle River Watershed

The Kettle River watershed covers 672,000 acres in northeast Minnesota, including parts of Aitkin, Carlton, Kanabec and Pine counties. The headwaters for the Kettle River begin in Carlton County, and the river flows 104 miles south to its confluence with the St. Croix River south of Hinckley. Parts of the state trail search corridor that surround Hinckley are within this watershed.

The Kettle River watershed includes dozens of lakes and wetlands and a few small streams that flow into the St. Croix River. There are 23 lakes 100 acres or greater in the Kettle River watershed. Major cities include Hinckley, Barnum, Willow River, Moose Lake, Sturgeon Lake, Sandstone and Finlayson. The watershed also includes part of the Fond du Lac tribal lands. Over half of the watershed's land cover is forested with about 20 percent agriculture and 19 percent wetlands. About 24 percent of land in the watershed is publically owned, most of which has forest or shrub land cover. Currently impairments are bacteria, biota, and mercury, for lakes and the Kettle River.

The Kettle River is a state designated wild and scenic river. It is part of the state water trail system and provides paddlers with class I-IV rapids.

Wetlands

Several large wetland complexes and many scattered wetlands are located within the state trail search corridor. The most common wetland types are wet meadows and wooded swamps, according to the national wetlands inventory Circular 39 classification system. There are about 20,000 acres of wetlands within the search corridor.

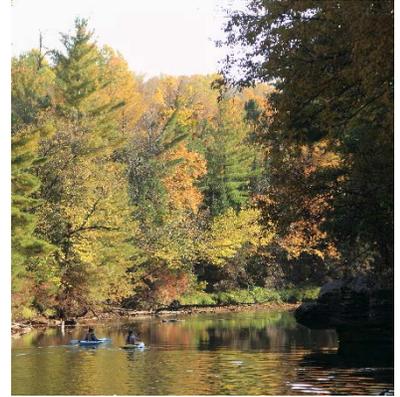
Wetlands inventories for this area are not necessarily comprehensive or up-to-date. All wetlands must be delineated in the field prior to any development. State trail development should avoid wetlands if at all possible. If avoidance is not possible, then impacts must be minimized, and losses replaced if impacts cannot be avoided. Existing state laws and rules encourage or require wetland mitigation to occur on the site of the impact or within the same watershed or county in order to replace the types and functions that were lost.

Water Resources Recommendations

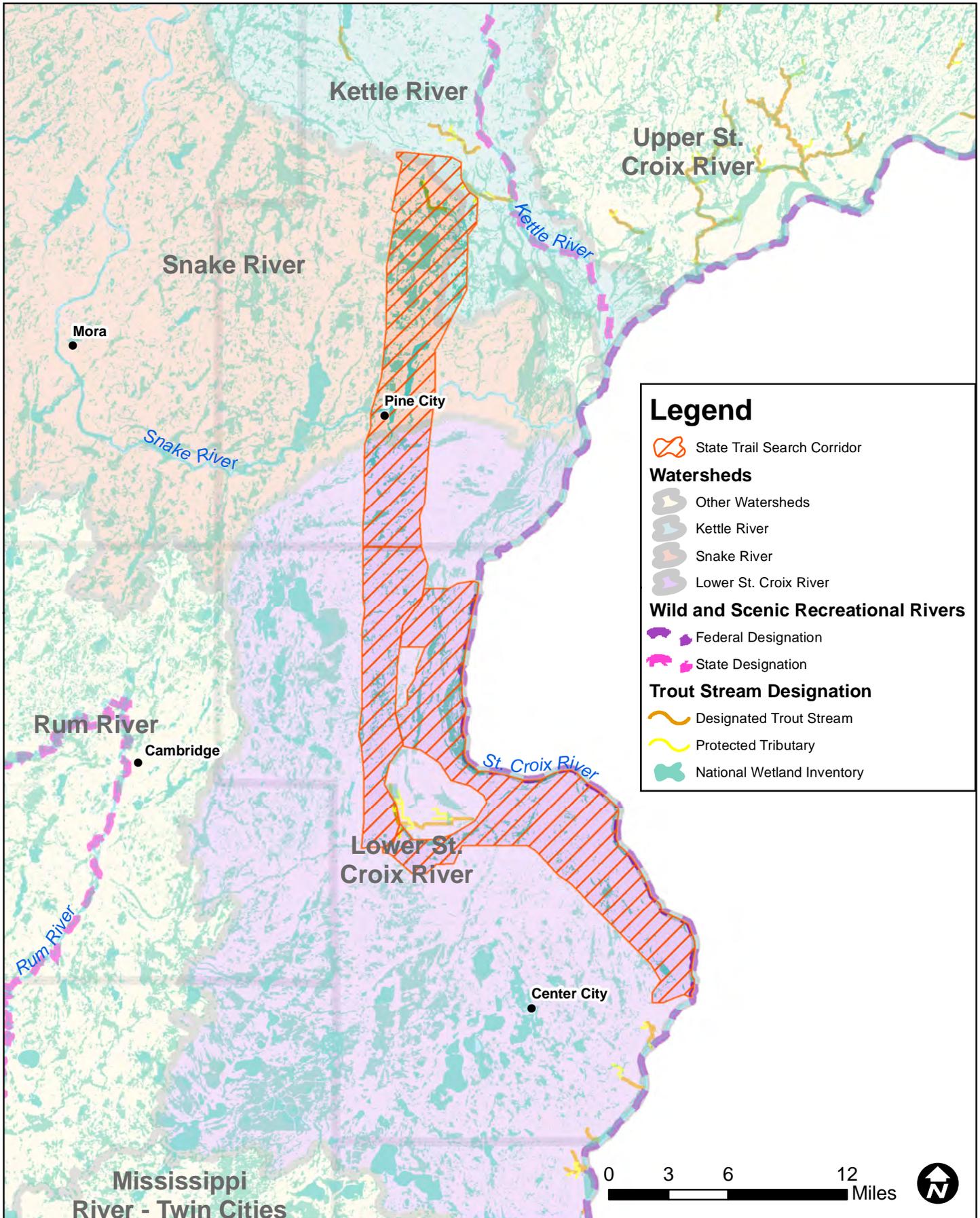
Recommendation 1: *Develop trail routes that avoid and minimize disturbances to wetlands, flood plains, and other sensitive hydrological features. Seek trail routes that share water crossings with existing infrastructure.*

Recommendation 2: *Provide a permanent vegetative buffer strip and/or other stormwater best management practices (BMPs) between the trail and water where the trail is located near hydrological features. Riparian zones will be planted with native grasses, shrubs, and trees to help stabilize banks.*

Recommendation 3: *The trail should enhance connections to water resources where feasible. These connections may include facilities designed for shore fishing, scenic viewing, or water access.*



Two kayakers paddle the Kettle River State Water Trail.



Wildlife

Wildlife and Habitat

The Mille Lacs Upland Ecological Subsection is characterized by extensive forest lands, riparian forests, and open waters. This mix of habitats supports bald eagles, common terns, sandhill cranes, ospreys, wood turtles, trumpeter swans, yellow rails, and sharp-tailed sparrows, as well as rare mussels like winged mapleleaf, spike, and round pigtoe. Sand terraces and rock outcrops along the St. Croix River provide habitat for bullsnakes. This subsection is a major migratory corridor for waterbirds, and is one of the most important subsections for forest-dwelling salamanders.

The Anoka Sand Plain Ecological Subsection is known for sandhill cranes, trumpeter swans, bald eagles, bobolinks and lark sparrows. Other important species include badgers, Blanding's turtles and gopher snakes. Habitat features like dry prairie associated with scattered wetlands, rivers, and streams provide excellent habitat for the Blanding's turtle, both species of hognose snakes, and bull snakes. Carlos Avery WMA and Sherburne National Wildlife Refuge (NWR) are important stopover sites for migratory birds.

Wildlife Management Areas

There are 26 different wildlife management areas (WMAs) in Chisago and Pine Counties. Ten of these, Carlos Avery, Janet Johnson Memorial, Kettle River, Kraft, Pine City, Pine County V&S 1, Pine County V&S 3, Rock Marsh, Rush Lake, Sandstone and Wild Rose, are located within five miles of the Oberstar State Trail search corridor. Wildlife management areas are publicly owned land that are acquired and managed for a diversity of habitats. Minnesota's WMA system started in 1951, when the State established its "Save the Wetlands" program to buy wetlands and other habitats from willing sellers to address the alarming loss of wildlife habitat in the state.

Aquatic Management Areas

Together, Chisago and Pine Counties contain all or part of twelve aquatic management areas (AMAs). Only the Cross Lake AMA, near the intersection of Forest and Cross Lake roads, is located within the state trail search corridor. The AMA program was created in 1992 as part of the Outdoor Recreation Act. The program administers hundreds of shoreland miles on lakes and streams across Minnesota. Aquatic management areas provide angler and management access, protect critical shoreline habitat, and provide areas for education and research.

State Forests

There are several state forests in east-central Minnesota but only one, the Chengwatana, is located near the Oberstar State Trail search corridor. The Chengwatana State Forest lies almost entirely in Pine County and covers 29,000 acres. A portion of the forest extends into Chisago County, along the St. Croix River, and overlaps the state trail search corridor. The state forest consists of a series of forested uplands islands surrounded by marsh and brush. White-tailed deer, bear, beaver, mink, muskrat, turkey and ruffed grouse can be found in the

forest. Migrating waterfowl are prevalent in the spring and fall. The forest is also home to many non-game species, including warblers, northern harriers, sandhill cranes, bald eagles and osprey.

Species in Greatest Conservation Need

Species in Greatest Conservation Need (SGCN) have been identified for each ecological subsection in Minnesota. This category, which includes both plant and animal species, includes:

- Species whose populations are identified as being rare, declining, or vulnerable in Minnesota, including species with legal protection status (federal or state endangered or threatened species).
- Species at risk because they depend upon rare, declining or vulnerable habitats.
- Species subject to specific threats that make them vulnerable (e.g. invasive species).
- Species with certain characteristics that make them vulnerable (e.g. highly localized distribution).
- Species with stable populations in Minnesota that are declining outside of Minnesota.

In the Mille Lacs Upland Subsection, 128 SGCN are known or predicted to occur, the third most of all subsections in Minnesota. Ninety-seven SGCN are known or predicted to occur in the Anoka Sand Plain Subsection. A total of 96 SGCN species (39 from Anoka Sand Plain and 57 from Mille Lacs Upland) in and around the Oberstar State Trail search corridor are federal or state endangered, threatened, or of special concern.

There are many factors influencing the vulnerability of SGCN. Vulnerability factors refer to the degree to which a natural community or population size of a species is likely to be diminished by environmental changes. The factors known or predicted to occur in the subsections, along with the percentage of SGCN impacted by those factors, are listed in Table 3.

Several areas within and near the state trail search corridor provide important habitat for SGCN. These areas include St. Croix and Wild River state parks; St. Croix National Scenic Riverway; Sandstone and Sherburne national wildlife refuges; Carlos Avery WMA; and St. Croix and Chengwatana state forests.



Locations in the state trail search corridor provide habitat for the Blanding's turtle, *Emydoidea blandingii*. The Blanding's turtle is a Species in Greatest Conservation Need and is listed as Threatened in Minnesota.

Table 3: Vulnerability Factors for Species in Greatest Conservation Need

Problem	Percentage of SGCN for Which This is a Problem	
	Mille Lacs Upland	Anoka Sand Plain
Habitat Loss in MN	80	82
Habitat Degradation in MN	89	87
Habitat Loss/Degradation Outside of MN	31	31
Invasive Species and Competition	30	26
Pollution	38	36
Social Tolerance/Persecution/Exploitation	17	24
Disease	2	3
Food Source Limitations	3	2
Other	12	12

Threatened, Endangered, and Special Concern Species

The Minnesota Natural Heritage Information database was used to identify species that are threatened, endangered or of special concern in and around the trail search corridor. These species are protected by state law, and protecting their habitat must be considered during trail planning, development and management. A table of species known to occur within, or adjacent to, the search corridor can be found in [Appendix C](#).

Wildlife Recommendations

Recommendation 1: Avoid impacts to threatened, endangered, and special concern species. Parks and Trails Division natural resource staff will use current Natural Heritage Information System data, consult with appropriate ecologists and land managers, and perform or contract on-the-ground surveys to avoid, minimize and mitigate impacts to wildlife.

Recommendation 2: Minimize disturbances to habitats that support SGCN. Maintain key habitats for SGCN that live along the trail corridor.

Recommendation 3: Provide interpretation, educational information, and demonstration areas for habitat management/landscaping and special wildlife features. Incorporate messages that alert users to ways to avoid impacts to the wildlife they encounter.

Historical and Cultural Resources

Archeological and Historical Setting

People have been living and using resources in the St. Croix Valley for thousands of years. Artifacts indicate that the valley was inhabited as early as 3,000 B.C. Archeological sites, including burial mounds, campsites, quarries, wild rice processing areas, rock art and village sites, offer evidence of the seasonal and complex nature of prehistoric life along rivers.

Ancestors of the Dakota lived in the St. Croix Valley as early as 1500 A.D. Ojibwe people were forced to move west, into this area, as European immigration expanded from east to west. A seasonal subsistence cycle included deer, elk and bison hunting, fishing, and gathering of wild rice and maple sap.

The St. Croix River served as a transportation route for the Dakota and Ojibwe peoples and European settlers. Early explorers, Danial Greysolon, Sieur du Lhut and Henry Schoolcraft, are known to have traveled the St. Croix River near Chisago County. The river was an important route during the fur trade from the late 1680s to the mid-1800s. Several fur trade posts were established along the St. Croix and Snake rivers during this period.

A treaty opened up this area to settlement by European-Americans in 1837. Commercial logging began in the lower St. Croix Valley in the 1830s and 1840s and moved steadily upstream. Several early towns were built at this time, including Nashua and Amador. Settlers began to arrive and establish farms in the 1850s and 1860s. A second wave of settlers began in the 1880s, when thousands of Swedish immigrants came to Minnesota.

Historic Resources

Point Douglas to Superior Military Road

Construction on the Point Douglas to Superior Military Road, also known as the Old Government Road, began in the mid-1850s. It formed an important 185 mile link between the Mississippi River and Lake Superior that drew a large amount of early settler commercial traffic to the area. The purpose of this roadway, and four others authorized by the Minnesota Road Act in 1850, was to aid the protection of the frontier by creating roadways for troop movement, however it served more to promote settlement and development.

The road was very rough, and even incomplete, in many areas due to a lack of funding. In 1870, the Superior and Mississippi Railroad opened a line connecting St. Paul and Duluth, which ultimately made the road redundant. Some segments served as important local transportation routes and parts of the alignment have been improved over time. Other segments have been supplanted by new transportation infrastructure and retain their original character. The Old Stone Bridge over Brown's Creek in Stillwater and the Deer Creek Section in Wild River State Park are two remaining segments, both of which are now listed on the National Register of Historic Places.



A section of the historic Point Douglas to Superior Military Road now serves as a multi-use trail in Wild River State Park.

Old U.S. Highway 61

The 1,400 mile U.S. Highway 61, also known as the Blues Highway, was one of the original highways constructed in the U.S. highway system. The highway runs from the Gulf of Mexico to Canada and was built in 1926. The portion between Wyoming, MN and Duluth was retired in 1990 because its route paralleled I-35. The segment through Chisago, Pine and Carlton counties is now recognized as Old U.S. Highway 61 to acknowledge the economic and historical importance to local communities.

National Register of Historic Places

There are a number of other nearby sites that are listed on the National Register of Historic Places. These resources need to be considered when locating and designing the trail, and interpreting resources to trail users. Some historic resources within, or nearby, the state trail search corridor are listed in Table 4.

Table 4: National Register of Historic Places

Resource	City or Town
Angel's Hill Historic District	Taylors Falls
George Flanders House	Harris
Grant House	Rush City
Interstate State Park CCC/WPA/Rustic Style Campground	Shafer
Interstate State Park CCC/WPA/Rustic Style Historic District	Shafer
John Daubney House	Taylors Falls
J. C. Carlson House	Rush City
Munch-Roos House	Taylors Falls
Northern Pacific Depot	Hinckley
North West Company Post	Pokegama
Point Douglas to Superior Military Road: Deer Creek Section	Amador
Taylors Falls Public Library	Taylors Falls

7. IMPLEMENTATION: WHAT HAPPENS AFTER THE MASTER PLAN IS FINISHED?

Minnesota Statutes 86A.09 requires that a master plan be prepared for state trails before trail development can begin – although planning, design and land acquisition can take place before the plan is complete. The completion of a master plan is only one step in what is typically a long process of implementation.

Local trail advocates have worked throughout the planning process to identify feasible routes, contact landowners, seek funding from a variety of sources, and work with DNR staff. The process has been, and will continue to be, lengthy and complex.

The first generation of state trails in Minnesota were developed primarily on abandoned rail rights-of-way that state or local governments were able to acquire. Since that time, most of the remaining abandoned rail rights-of-way in the state have reverted to private ownership. The next generation of trails, including the Oberstar State Trail, must cross a variety of public and private lands, making them much more challenging to develop than the rail-trails of the past.

Identification of State Trail Routes

DNR staff work with individual landowners who are willing to sell land or easements to the state. A series of acquisitions on adjoining properties is needed to create contiguous trail segments with a logical beginning and end points. For instance, a trail segment often begins at an existing park or town center that can serve as a trailhead, preferably with parking and restroom facilities.

In this process, DNR acquisition and development staff frequently work with city and county governments, conservation organizations, and local trail interest groups to assess the feasibility of a particular trail route. Acquisition is done only with willing sellers.

Land can be acquired or otherwise set aside for trail development through a variety of methods:

- A trail may be located on non-DNR public land (such as county or city-owned land or a public road right-of-way) through a cooperative agreement.
- A local government or not-for-profit organization can acquire land from a willing seller and then sell or donate it to the DNR.
- Local interest groups and/or DNR staff may make the initial contact with landowners, after which DNR staff will assess the feasibility of a particular trail route and complete the land acquisition.

No matter which method is used, advance coordination with DNR staff is essential in order to ensure that the selected trail route is feasible to develop.

In the course of trail implementation, it may become apparent that a specific trail route will not be obtainable for some time – for example, until a parcel is sold or passed to another family member. In such situations, it may be advisable to assess the feasibility of utilizing a designated bicycle route or grant-in-aid snowmobile trail as an interim route for a portion of the trail.

A combination of off-road trails and on-road bicycle routes could create a contiguous corridor for some users before state trail development is completed. The DNR will continue to coordinate with Minnesota Department of Transportation (MnDOT) on planning for the Oberstar State Trail and the North Star Bicycle Route. Coordinated state trail and bicycle routes may offer mutual benefits like financial efficiencies and improved user experiences.

Sequence of State Trail Planning and Development

The following is a typical sequence of events in trail planning and development. However, the steps will likely overlap and the process will often require several rounds of feasibility assessment and landowner contacts.

- **Complete the master plan.** The plan identifies a broad search corridor for the trail, within which one or more alternative routes are identified. The intent of the plan is to provide flexibility while identifying the most feasible routes, rather than “locking in” a specific route.
- **Explore feasibility of each route.** Assess land ownership, width of road right-of-way (is there enough room for a trail?), connectivity, physical conditions such as slope, wetlands and natural resources, cultural resources, scenic qualities and historical significance. The route must allow state and federal design guidelines and rules to be met, including trail width, shoulders, curvature and accessibility. Therefore, it is important for local governments and trail groups to coordinate their efforts with DNR staff.
- **Initial informal landowner contact.** It is often preferable for landowners to be initially contacted by local trail supporters (rather than DNR staff). Landowner concerns frequently relate to privacy, safety, and liability, and there are many information resources available to address these concerns.
- **Formal landowner contact; complete acquisition process.** As mentioned above and with proper coordination, the DNR or other entities may take the lead on land acquisition.
- **Seek funding.** State trails are typically funded through a variety of sources that include state bonding appropriations, federal Transportation Enhancement (TE) funds and federal trail grants. DNR may partner with other agencies and local groups when seeking funding.

- **Resource assessment.** Resource assessments take into consideration environmental review and permit requirements and may be conducted prior to, or during, the trail engineering and design process. The goal of the resource assessment is to evaluate a proposal and make recommendations to prevent, minimize, or mitigate undesirable effects on natural or cultural resources. A resource assessment may recommend not developing a particular trail segment or recommend an alternative route.
- **Trail engineering and design.** The design process offers an additional opportunity to assess feasibility, including the need to avoid sensitive natural or cultural resources and address constraints such as wetlands or steep slopes. Trail routes and design elements may shift during the design process.
- **Construction.** Initiate construction on one or more segments, while the processes of negotiation and design continue on others.
- **Ongoing maintenance and stewardship.** Trail associations often act as “eyes on the trail” to monitor conditions, notify the DNR of concerns and volunteer on certain efforts. Local units of government may provide trail maintenance via a cooperative agreement.
- **Orientation and interpretation.** All trails are developed with traffic safety and directional signs. Some trails provide interpretive signs that highlight notable natural and cultural resources and landscape features. Interpretive signs for the Oberstar State Trail should be provided in conjunction with partners or interpretive investments for other outdoor recreation facilities in the area.

Actions Local Governments Can Take to Support Trail Development

City and county governments can play an important role in trail development through their planning and development review processes, including the following:

- **Integrate the trail concept into community plans,** including comprehensive and land use plans, park and open space plans, and transportation plans.
 - Through the local park and trail plan, link the state trail corridor to local and regional trails; integrate it with local parks. If a proposed trail is within the state trail corridor, consult DNR staff during planning and development.
 - Seek opportunities to meet multiple goals through trail development – e.g., to improve water quality, protect natural areas, provide educational opportunities or provide additional transportation options.
- **Require park and trail set-asides.** Through their subdivision ordinances, cities and counties may require that developers dedicate a reasonable portion of land within a development to public use for such things as

Basic Design Standards for Hard-Surface Shared-Use State Trails

The following standards briefly highlight key points from the DNR publication *Trail Planning, Design and Development Guidelines*:

- Pavement width: 10 feet is typical; 12 feet an option in high-use areas, 8 feet is an option where limitations exist or lower use is expected.
- Shoulders: 2 to 5 feet, depending on conditions such as side-slopes and hazards.
- Maximum grade: 5% preferred, with certain exceptions.
- 2% maximum cross-slope (the slope from one side of a trail to the other).
- Corners gently curved to meet standards rather than right angles.
- 50' to 100' wide corridor width where possible to allow for buffers, storm water control and grading.

streets, utilities, drainage, and parks, trails and recreational facilities (Minnesota Statutes 394.25, Subd. 7c [applies to counties], 462.358, Subd. 2b [applies to cities]). If the set-aside is within a state trail corridor, coordinate with DNR staff in advance.

- **Work with DNR staff to seek funding for state trail acquisition and development.** State trails are typically funded by the Minnesota Legislature via bonding money or special appropriations, or through the Legislative-Citizen Commission on Minnesota Resources (LCCMR). Some federal grants are also eligible to be used in conjunction with state funding for development. Transportation enhancement project grants and other transportation funding sources may also be used for state trails. It is important for local government representatives to work closely with DNR regional staff in any pursuit of state trail funding.
- **Seek funding for local and regional trail connections.** Local and regional trails can be funded through a variety of sources, available through the DNR and other agencies. Some sources include:
 - **Snowmobile Trails Assistance Program - Grant-in-Aid (GIA) Program**
http://www.dnr.state.mn.us/grants/recreation/gia_snowmobile.html
 - **Cross-Country Ski Grant-in-Aid Program:**
http://www.dnr.state.mn.us/grants/recreation/gia_crosscountry.html
 - **Parks and Trails Legacy Grant Program:**
http://www.dnr.state.mn.us/grants/recreation/pt_legacy.html
 - **Local Trail Connections Grant Program:**
http://www.dnr.state.mn.us/grants/recreation/trails_local.html
 - **Federal Recreation Trail Grant Program** (also available for state trails):
http://www.dnr.state.mn.us/grants/recreation/trails_federal.html
 - **Regional Trail Grant Program:**
http://www.dnr.state.mn.us/grants/recreation/trails_regional.html
 - **Moving Ahead for Progress in the 21st Century Act (MAP-21)** - (Statutory citation: MAP-21 §1122; 23 USC 101, 206, 213; SAFETEA-LU §1404) establishes a new program to provide for a variety of alternative transportation projects, including many that were previously eligible activities under separately funded programs.
 - **Transportation Alternatives Program (TAP)** – The TAP replaces the funding from pre-MAP-21 programs including Transportation Enhancements, Recreational Trails, and Safe

Routes to School, wrapping them into a single funding source.
<http://www.dot.state.mn.us/map-21/tap.html>

The master plan allows the DNR to use state funding to develop and manage trail segments within the state trail corridor; it does not prohibit another unit of government from developing a trail within the corridor. The DNR encourages local governments to develop local and regional park and trail facilities. In fact, trail development may be more successful if local governments take the lead on projects within their jurisdictions. Local governments should consult with DNR staff if they are planning or developing a trail within the state trail corridor. Local partners should also utilize the criteria in this plan when designing and developing trail routes.

Local and regional trails are frequently utilized to connect state trails to communities and local destinations. Existing and planned local or regional trails could be utilized to make connections within the state trail corridor. Trail segments developed by cities and counties will be managed by the agency that developed them, unless another agreement is in place.

REFERENCES

The following sources were used in the development of this master plan. Additional information was also drawn from DNR reports and databases, park and trail brochures, and other Department documents.

- Chisago County. (2015a). *Sunrise Prairie Regional Trail Master Plan*. Chisago County Environmental Services. Retrieved from: <http://www.co.chisago.mn.us/DocumentCenter/View/6642>.
- Chisago County. (2015b). *Swedish Immigrant Regional Trail Master Plan*. Chisago County Environmental Services. Retrieved from: <http://www.co.chisago.mn.us/DocumentCenter/View/6641>.
- Kelly, Tim. (2010). *Status of Summer Trail Use (2007-09) on Five Paved State Bicycle Trails and Trends Since the 1990s*. Saint Paul, MN: Minnesota Department of Natural Resources, Office of Management and Budget Services.
- McMahon, Eileen, and Karamanski, Theodore. (1953). *Time and the River: A History of the Saint Croix: A Historic Resource Study of the Saint Croix National Scenic Riverway*. Omaha, NE: United States Department of the Interior, National Park Service, Midwest Regional Office.
- Minnesota Department of Natural Resources. (1988). *Natural Vegetation of Minnesota at the Time of the Public Land Survey 1847-1907*. Natural Heritage Program, Section of Wildlife. Retrieved from: http://files.dnr.state.mn.us/eco/mcbs/natural_vegetation_of_mn.pdf
- Minnesota Department of Natural Resources. (2006). *Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife*. Retrieved from: <http://www.dnr.state.mn.us/cwcs/index.html>
- Minnesota Department of Natural Resources. (2007a). *Trail Planning, Design and Development Guidelines*. Saint Paul, MN: Division of Trails & Waterways
- Minnesota Department of Natural Resources. (2007b). *Wild River State Park Management Plan*. Saint Paul, MN: Division of Parks and Recreation.
- Minnesota Department of Natural Resources. (2009). *Interstate State Park Management Plan*. Saint Paul, MN: Division of Parks and Trails.
- Minnesota Department of Natural Resources. (2013a). *Ecological Classification System*. Retrieved from: <http://www.dnr.state.mn.us/ecs/index.html>
- Minnesota Department of Natural Resources. (2013b) *Minnesota Biological Survey Native Plant Community and Rare Species County Maps*. Retrieved from: <http://www.dnr.state.mn.us/eco/mcbs/maps.html>
- Minnesota Pollution Control Agency. (2014). *Lower St. Croix River Watershed Monitoring and Assessment Report*. <https://www.pca.state.mn.us/sites/default/files/wq-ws3-07030005b.pdf>
- Natural Resources Conservation Service. (____). *Rapid Watershed Assessment: Snake River (MN)*. United States Department of Agriculture. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_022261.pdf
- Natural Resources Conservation Service. (____). *Rapid Watershed Assessment: Kettle River (MN)*. United States Department of Agriculture. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_022921.pdf

Office of the State Demographer. (2007). *Annual estimates of county population, households and persons per household, 2000 to 2009 (dataset)*. Saint Paul, MN: Minnesota Department of Administration, Office of the Geographic and Demographic Analysis.

Schoenbauer, Kathy and Schoenbauer, Jeff. (2010). *Report of Findings: Trail Survey of Law Enforcement Agencies & Officers*. Minneapolis, MN: Schoenbauer Consulting, LLC.

St. Croix Scenic Byway. (2013). *St. Croix Scenic Byway: Follow the Road to Adventure*.
<http://stcroixscenicbyway.org/>

APPENDIX A: LEGISLATIVE AUTHORIZATION

Legislative Authorization

The James L. Oberstar State Trail is authorized as part of the Willard Munger Trail system in Minnesota Statutes 85.015, Subdivision 14. This trail system was first authorized in 1973 and has been amended several times. Amendments have added segments, removed segments, or provided additional detail for trail connections.

Current legislative language is as follows:

Subd. 14. Willard Munger Trail system, Chisago, Ramsey, Pine, St. Louis, Carlton, and Washington Counties.

(a) The trail shall consist of six segments.

- *One segment shall be known as the Gateway Trail and shall originate at the State Capitol and extend northerly and northeasterly to William O'Brien State Park, thence northerly to Taylors Falls in Chisago County.*
- ***One segment shall originate in Chisago County and extend into Hinckley in Pine County.***
- *One segment shall be known as the Brown's Creek Trail and shall originate at Duluth Junction and extend into Stillwater in Washington County.*
- *One segment shall be known as the Munger Trail and shall originate at Hinckley in Pine County and extend through Moose Lake in Carlton County to Duluth in St. Louis County.*
- *One segment shall be known as the Alex Laveau Trail and shall originate in Carlton County at Carlton and extend through Wrenshall to the Minnesota-Wisconsin border.*
- *One segment shall be established that extends the trail to include the cities of Proctor, Duluth, and Hermantown in St. Louis County.*

(b) The Gateway and Browns Creek Trails shall be developed primarily for hiking and nonmotorized riding and the remaining trails shall be developed primarily for riding and hiking.

(c) In addition to the authority granted in subdivision 1, lands and interests in lands for the Gateway and Browns Creek Trails may be acquired by eminent domain.

Additional direction for this trail segment was provided in 2014 Laws of Minnesota, Chapter 312, Section 6, Natural Resources:

Subd. 4. Parks and Trails Management

... \$350,000 in 2015 is for the development of the segment of the Willard Munger Trail system that originates in Chisago County and extends into Hinckley in Pine County, to be named the James L. Oberstar Trail...

Outdoor Recreation Act

State trails are one unit of the state's outdoor recreation system established by the Legislature. In 1975, the Minnesota Legislature enacted the Outdoor Recreation Act (ORA) (Minnesota Statutes, Section 86A.05, Subdivision 4 and Section 85.015). This act established an outdoor recreation system comprised of eleven components or "units" classifying all state-managed recreation lands. The ORA requires that the managing agency prepare a master plan for the establishment and development of each unit. This plan fulfills this mandate. The Oberstar State Trail meets the following criteria established for state trails in the ORA:

- a. *A state trail shall be established to provide a recreational travel route which connects units of the outdoor recreational system or the national trail system, provides access to or passage through other areas which have significant scenic, historic, scientific, or recreational qualities or reestablishes or permits travel along an historically prominent travel route or which provides commuter transportation.*
- b. *No unit shall be authorized as a state trail unless its proposed location substantially satisfies the following criteria:*
 1. *permits travel in an appropriate manner along a route which provides at least one of the following recreational opportunities:*
 - (i) *travel along a route which connects areas or points of natural, scientific, cultural, and historic interest;*

There are diverse natural, scientific, cultural and historical resources along the Oberstar State Trail search corridor. The following examples highlight the variety of resources along the trail corridor:

- St. Croix River National Scenic River. The upper riverway flows through generally undeveloped terrain featuring deciduous and coniferous forests, marshlands, and pine barrens.
- Interstate State Park, including globally significant geologic formations, floodplain and upland forests, habitat for rare and endangered species, and historic buildings constructed by the Works Progress Administration.
- Wild River State Park, including sites of early fur trading posts, a segment of the historic military road from Point Douglas to Superior, WI, and thousands of acres along the St. Croix National Scenic Riverway.
- Ten Wildlife Management Areas are publicly owned land that are acquired and managed for a diversity of habitats.
- Sites and districts listed on the National Register of Historic Places, including the Point Douglas to Superior Military Road.

(ii) travel through an area which possesses outstanding scenic beauty;

The trail search corridor includes deciduous and coniferous forests, wetland expanses, lakes and streams, and open landscapes that afford scenic views. Existing public lands, such as Wild River State Park and the St. Croix National Scenic Riverway, provide opportunities to experience outstanding scenic beauty.

(iii) travel over a route designed to enhance and utilize the unique qualities of a particular manner of travel in harmony with the natural environment;

The Oberstar State Trail is planned to parallel existing scenic and historic travel routes. The scale of the trail will match that of the topography, natural features, and developed areas in the trail corridor. Recommended trail uses will more closely match the pace of historical means of travel than fast-pace highway travel common today.

(iv) travel along a route which is historically significant as a route of migration, commerce, or communication;

The Oberstar State Trail travels follows the middle St. Croix River Valley, which is a historical travel route. The St. Croix River served as a natural passage between the Mississippi River and Lake Superior. Burial mounds, rock art, wild rice processing stations and village sites are evidence of prehistoric life along the river. The St. Croix River was an important fur trade route and was later important to the logging industry.

The trail search corridor parallels the historic Point Douglas to Superior Military Road, Lake Superior and Mississippi Railroad, Old U.S. Highway 61, and the St. Croix Scenic Byway. Parts of the state trail route have the potential to follow alongside some of these travel routes.

(v) travel between units of the state outdoor recreation system or the national trail system; and

The Oberstar State Trail has potential for many connections to existing recreational areas, including state and national facilities. The trail may include connections to Interstate and Wild River state parks, Gateway State Trail, Willard Munger State Trail, Chengwatana State Forest, and several wildlife management areas. The state trail corridor also parallels the St. Croix National Scenic Riverway, St. Croix Scenic Byway, and North Star Bicycle Route. The Oberstar State Trail could enhance access to water resources including the St. Croix, Snake and Kettle river state water trails.

- 2. Utilizes, to the greatest extent possible consistent with the purposes of this subdivision, public lands, rights-of-way, and the like;*

Public land will be used when trail development is compatible with management objectives of the administering agency. State, county, and township rights-of-way may also be used. There are opportunities for existing local and regional trails to create connections through the state trail corridor.

3. *Provides maximum potential for the appreciation, conservation, and enjoyment of significant scenic, historical, natural, or cultural qualities of the areas through which the trail may pass; and*

Existing interpretive facilities and opportunities are already provided throughout the trail corridor. These opportunities include Interstate and Wild River state parks, St. Croix Scenic Byway, Folsom House in Taylors Falls, North West Company Fur Post, Hinckley Fire Museum, and many other local facilities. These opportunities will increase trail users understanding of the natural and cultural resources in the area. The trail will complement other recreational opportunities located throughout the region. The DNR may partner with other organizations to develop themes and deliver interpretive services that enhance appreciation of scenic, historical, natural or cultural resources.

4. *Takes into consideration predicted public demand and future uses.*

This plan evaluates and uses current research on existing trail use, demand for trail opportunities, visitation at nearby outdoor recreation areas, demographic data and recreational trends. Information gathered at public meetings and through other public participation techniques is also considered and incorporated into the plan.

APPENDIX B: SUMMARY OF PUBLIC PARTICIPATION

The Oberstar State Trail Master Plan was prepared by the DNR through a public planning process. The planning process provided opportunities for people to stay informed about the project and provide input at multiple planning stages. The DNR used a variety of methods to engage people in the planning process. These methods included in-person meetings, a project Web page, a DNR-maintained mailing list and targeted communications.

Some of the most effective outreach was completed by local governments, trail advocates and community leaders. These groups engaged their neighbors, residents and constituents to inform them of the project and invite them to participate in the process. The DNR appreciates the role these organizations and individuals played in development of this master plan.

Public Engagement Process

A group of trail advocates began meeting in 2015 to pursue trail connections through east-central Minnesota. This group consisted of local government staff, elected and appointed officials, and citizen advocates from Pine, Isanti, Chisago, Kanabec and Mille Lacs counties (PICKM trail group). These five counties also comprise the east-central Minnesota economic development region.

The DNR began the master planning process with a meeting with the PICKM trail group. The meeting was held to identify local priorities, and share information about the state trail system and the master planning process.

The DNR gained early public input in-person and online. Staff gathered information informally from local stakeholders and trail advocates. The DNR used an online questionnaire to gain a wide breadth of input about the project. The questionnaire was available on the project Web page and was dispersed through a project mailing list.

The planning team used this early input when refining the project scope. This input is reflected in the vision and goals for the trail, as well as the recommended trail uses. The planning team considered input when developing recommendations for trail routes and connections.

The DNR also held meetings throughout the planning process with various stakeholders. Some of these meetings were held to provide information about the project while others were to gain feedback on components of the draft master plan. During master plan development, the DNR met with groups including Pine County, Chisago County, Wild River State Park Friend's Group, and the PICKM trails group. The DNR also provided information about the Oberstar State Trail at two public meetings hosted by MnDOT for the North Star Bicycle Route.

The draft master plan was released for a 30-day public review period in 2017. The review period was also announced with a news release on August 31, 2017, an update on the project Web page, and with an email to the project mailing list. The DNR accepted public comments on the draft master plan until October 2, 2017.

The DNR held a public open house meeting on September 19, 2017 in Pine City. DNR staff were present to answer questions about the master plan and trail development. Copies of the draft master plan were available for review and attendees were able to submit comments.

Initial Online Questionnaire

The DNR administered an online questionnaire to gather early public input for the Oberstar State Trail. A total of 128 responses were submitted in 2015. The vast majority of survey respondents were from Zip codes located within the project area, including Pine and Chisago counties.

This public input tool is not a “vote” or a “scientific survey.” The survey was not designed to gather responses representative of the Minnesota population or the population of the project area. Survey responses were used by the planning team to inform decisions and conversations during development of this master plan.

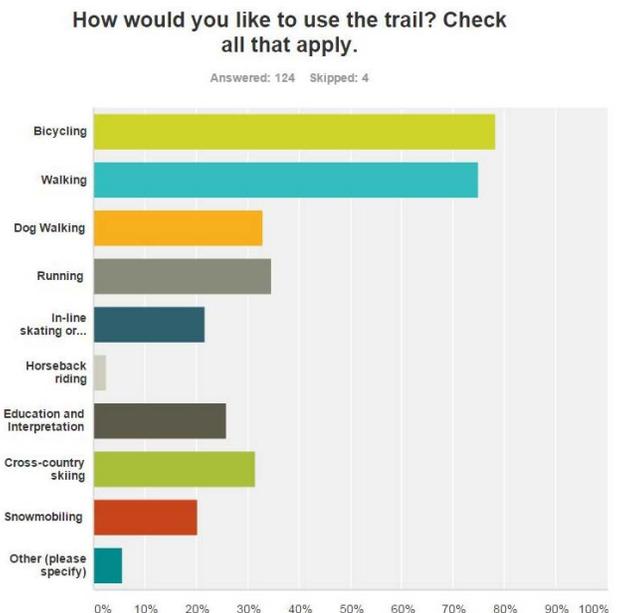
Survey responses identified a wide range of potential trail connections. Not surprisingly, many responses identify the importance of connecting existing trails in the area like the Sunrise Prairie and Swedish Immigrant regional trails. Many responses recommended connections to communities and local parks. Ideas for trail routes fell into two general categories: one, providing a scenic corridor that utilizes existing public lands; and two, utilizing road rights-of-way to connect cities and existing trails.

Over 90 percent of respondents said that people should be able to use the trail for bicycling, walking and running. About 30 percent of respondents indicated that people should be able to use the trail for horseback riding or snowmobiling. However, nearly 20 percent of people said they would use the trail for snowmobiling while relatively few people said they would use it for horseback riding.

The survey asked respondents to identify the importance of 11 different outcomes of the trail. On average, respondents rated all of these statements quite highly. The least important outcome was providing a route for travel and commuting. The top three statements were:

1. Provide recreational opportunities for area residents.
2. Foster a healthy lifestyle.
3. Provide a safe alternative to on-road bike routes.

Three statements generated a mixed rating, indicating they may be more controversial. These statements included connecting to communities and population centers, traveling through the St. Croix River Valley, and providing a route for travel and commuting.



Public Review of Draft Master Plan

The DNR received about 20 comments on the draft master plan in 2017. These comments were received through mail, email and phone, and in-person at the public open house meeting.

Public comments are summarized in the following table. The table does not include every individual comment, but rather includes overall comment themes. The table also indicates what, if any, changes the DNR made to the draft master plan in response to the feedback.

Public Comment Theme	DNR Response
<p>Prioritize search corridors A and C along county highways 30/61 from North Branch to Hinckley because:</p> <ul style="list-style-type: none"> • This is the shortest route necessary to connect existing trails. • More people live in communities along county highways 30/61 who could use the trail. • Rides and events, which could utilize the trail, are already held in this corridor. • More local park and trail advocacy and governmental groups support this trail corridor. • More funding potential and confidence in the ability to complete trail development in this corridor. 	<p>The DNR acknowledges that each trail search corridor is different and has a unique set of benefits. See pages ii, 13-14, and 16-19 for information about assets and tradeoffs of each search corridor.</p> <p>All three search corridors remain in the master plan as potential options. This master plan does not “lock in” a specific trail route; it preserves flexibility for the DNR to work with partners to identify and evaluate specific trail proposals. Any route or combination of routes within a search corridor is a potential state trail alignment. The DNR will collaborate with local organizations and governments to pursue the most feasible and beneficial state trail routes.</p>
<p>Prioritize search corridors B and C along the St. Croix River from Taylors Falls to Hinckley because:</p> <ul style="list-style-type: none"> • The route is scenic and would provide a more enjoyable riding experience. • It connects to Wild River State Park. • It parallels the St. Croix Scenic Byway. 	<p>See above.</p>
<p>Restrict trapping as a use within the state trail corridor to minimize the risk of dogs being injured or killed. Create a no-trapping buffer near the trail or restrict trapping to submerged or elevated traps.</p>	<p>Hunting and trapping is allowed within state trail corridors during legal hunting and trapping seasons, unless restricted by a local ordinances or other controls.</p> <p>While generally allowed, trapping is an uncommon use within state trail corridors. The DNR does use trapping for animal damage control. Potential</p>

Public Comment Theme	DNR Response
	<p>conflicts between trapping and other uses are reduced by requiring that pets are attended to and kept on a leash 6’ or shorter. Also, the DNR discourages people from setting traps in areas with high public use, like near paved state trails.</p>
<p>Concern that people will be impacted by noise and air pollution from snowmobile use.</p>	<p>Snowmobiling is a recommended trail use through the majority of the trail corridor. State trail development presents the opportunity to enhance or secure existing grants-in-aid snowmobile connections through the search corridor. The DNR will work with landowners and neighbors to address the impacts of snowmobiling, or other trail uses, throughout the trail development process.</p> <p>Snowmobiles are required to follow equipment and noise laws and rules while on public lands (MN Rules 6100.5700).</p>
<p>Add opportunities for coordination between DNR and MnDOT or other partners.</p>	<p>The DNR added a statement about coordination of state trail and bicycle routes to page 53.</p>
<p>Several individuals asked the DNR to make specific changes to the master plan to correct information or add information about communities and local assets.</p>	<p>The DNR made revisions and additions as suggested by individual commenters.</p>
<p>Support for the draft master plan because:</p> <ul style="list-style-type: none"> • The trail will provide healthy access to recreational opportunities. • The trail will support tourism and provide value to local communities. • The trail completes a gap in the trail network between Twin Cities and Duluth. • The plan provides guidance for developing sustainable trails. • Master plan preparation included opportunities for input and participation from local organizations and the public. 	<p>Thank you for your support.</p>

APPENDIX C: SPECIAL CONCERN, THREATENED OR ENDANGERED SPECIES, AND NATURAL FEATURES

The following list is drawn from the database of the Natural Heritage Information System of the DNR, Ecological and Water Resources Division. This information is not based on a comprehensive inventory; additional species and features could be located in future surveys or through project implementation. All species and features within, or near, the proposed trail search corridor are included below. Species are classified as follows:

- SPC Special Concern
- THR Threatened
- END Endangered
- NON A species with no legal status, but about which the Ecological and Water Resources Division is gathering data for possible future listing.

Animal assemblages, terrestrial communities, and other ecological features are listed because they represent high-quality habitats or important natural features, but have no legal status.

Vertebrate Animal

Common Name	Scientific Name	State Status
Bald Eagle	<i>Haliaeetus leucocephalus</i>	NON
Blanchard's Cricket Frog	<i>Acris blanchardi</i>	END
Blanding's Turtle	<i>Emydoidea blandingii</i>	THR
Blue Sucker	<i>Cycleptus elongatus</i>	SPC
Cerulean Warbler	<i>Setophaga cerulea</i>	SPC
Common Five-lined Skink	<i>Plestiodon fasciatus</i>	SPC
Eastern Hognose Snake	<i>Heterodon platirhinos</i>	NON
Gilt Darter	<i>Percina evides</i>	SPC
Gophersnake	<i>Pituophis catenifer</i>	SPC
Henslow's Sparrow	<i>Ammodramus henslowii</i>	END
Lake Sturgeon	<i>Acipenser fulvescens</i>	SPC
Lark Sparrow	<i>Chondestes grammacus</i>	SPC
Louisiana Waterthrush	<i>Parkesia motacilla</i>	SPC
Milksnake	<i>Lampropeltis triangulum</i>	NON
Mudpuppy	<i>Necturus maculosus</i>	SPC
Pallid Shiner	<i>Hybopsis amnis</i>	END
Peregrine Falcon	<i>Falco peregrinus</i>	SPC
Red-shouldered Hawk	<i>Buteo lineatus</i>	SPC

Common Name	Scientific Name	State Status
Sandhill Crane	<i>Grus canadensis</i>	NON
Shovelnose Sturgeon	<i>Scaphirhynchus platyrhynchus</i>	NON
Southern Brook Lamprey	<i>Ichthyomyzon gagei</i>	SPC
Western Foxsnake	<i>Pantherophis ramspotti</i>	NON
Wilson's Phalarope	<i>Phalaropus tricolor</i>	THR
Wood Turtle	<i>Glyptemys insculpta</i>	THR

Invertebrate Animal

Common Name	Scientific Name	State Status	Federal Status
A Jumping Spider	<i>Pelegrina arizonensis</i>	SPC	
Black Sandshell	<i>Ligumia recta</i>	SPC	
Butterfly	<i>Ellipsaria lineolata</i>	THR	
Creek Heelsplitter	<i>Lasmigona compressa</i>	SPC	
Elktoe	<i>Alasmidonta marginata</i>	THR	
Fluted-shell	<i>Lasmigona costata</i>	THR	
Hickorynut	<i>Obovaria olivaria</i>	NON	
Higgins Eye	<i>Lampsilis higginsii</i>	END	END
Monkeyface	<i>Quadrula metanevra</i>	THR	
Mucket	<i>Actinonaias ligamentina</i>	THR	
Northern Barrens Tiger Beetle	<i>Cicindela patruela patruela</i>	SPC	
Pistolgrip	<i>Tritogonia verrucosa</i>	END	
Purple Wartback	<i>Cyclonaias tuberculata</i>	END	
Round Pigtoe	<i>Pleurobema sintoxia</i>	SPC	
Snuffbox	<i>Epioblasma triquetra</i>	END	END
Spectaclecase	<i>Cumberlandia monodonta</i>	END	END
Spike	<i>Elliptio dilatata</i>	THR	
St. Croix Snaketail	<i>Ophiogomphus susbehcha</i>	THR	
Wartyback	<i>Quadrula nodulata</i>	THR	

Animal Assemblage

Common Name	Scientific Name
Colonial Waterbird Nesting Site	Colonial Waterbird Nesting Area
Mussel Sampling Site	Freshwater Mussel Concentration Area

Vascular Plant

Common Name	Scientific Name	State Status
American Ginseng	Panax quinquefolius	SPC
American Water-pennywort	Hydrocotyle americana	SPC
Bog Bluegrass	Poa paludigena	THR
Butternut	Juglans cinerea	END
False Mermaid	Floerkea proserpinacoides	THR
Kitten-tails	Besseyia bullii	THR
Least Moonwort	Botrychium simplex	SPC
Long-bearded Hawkweed	Hieracium longipilum	NON
Old Field Toadflax	Nuttallanthus canadensis	SPC
Rhombic Evening Primrose	Oenothera rhombipetala	SPC
Rough-seeded Fameflower	Phemeranthus rugospermus	THR
Seaside Three-awn	Aristida tuberculosa	THR
Small-leaved Pussytoes	Antennaria parvifolia	SPC
Spiny Hornwort	Ceratophyllum echinatum	NON
Spotted Pondweed	Potamogeton pulcher	END
Stemless Tick Trefoil	Desmodium nudiflorum	THR
Toothcup	Rotala ramosior	THR
Witch-hazel	Hamamelis virginiana	THR

Terrestrial Community - Other Classification

Common Name	NPC Code
Alder - (Maple - Loosestrife) Swamp	FpN73a
Basswood - Black Ash Forest	MHc47a
Black Ash - (Red Maple) Seepage Swamp	WFs57a
Black Ash - Yellow Birch - Red Maple - Basswood Swamp (Eastcentral)	WFn55b

Common Name	NPC Code
Central Dry Oak-aspen (Pine) Woodland	FDc25
Central Dry-Mesic Oak-Aspen Forest	MHc26
Crystalline Bedrock Outcrop (Transition)	ROs12b
Dry Sand - Gravel Oak Savanna (Southern)	UPs14b
Dry Sand - Gravel Prairie (Southern)	UPs13b
Graminoid Bog	APn90b
Gravel/cobble Beach (River)	RVx32c2
Northern Wet Meadow/Carr	WMn82
Red Oak - Basswood Forest (Noncalcareous Till)	MHc36a
Red Oak - Sugar Maple - Basswood - (Large-Flowered Trillium) Forest	MHc26b
Seepage Meadow/Carr	WMn82b
Silver Maple - (Virginia Creeper) Floodplain Forest	FFs68a
Tamarack Swamp (Southern)	FPS63a
Willow - Dogwood Shrub Swamp	WMn82a

Fungus

Common Name	Scientific Name	State Status
Salted shell lichen	Coccocarpia palmicola	THR

Other Ecological or Geological Feature

Common Name	Scientific Name
Esker (Quaternary)	Esker (quaternary)
Fossil Invertebrate (Cambrian)	Fossil invertebrate (cambrian)
Igneous Structure (Middle Proterozoic)	Igneous structure (middle proterozoic)
Igneous Unit or Sequence (Middle Proterozoic)	Igneous unit or sequence (middle proterozoic)
Mixed Unit or Sequence (Middle Proterozoic, Cambrian)	Mixed unit or sequence (middle proterozoic, cambrian)
Proglacial River Erosion (Quaternary)	Proglacial river erosion (quaternary)
Sedimentary Unit or Sequence (Cambrian)	Sedimentary unit or sequence (cambrian)
Sedimentary Unit or Sequence (Late Wisconsin)	Sedimentary unit or sequence (late wisconsin)
Tunnel Valley (Quaternary)	Tunnel valley (quaternary)