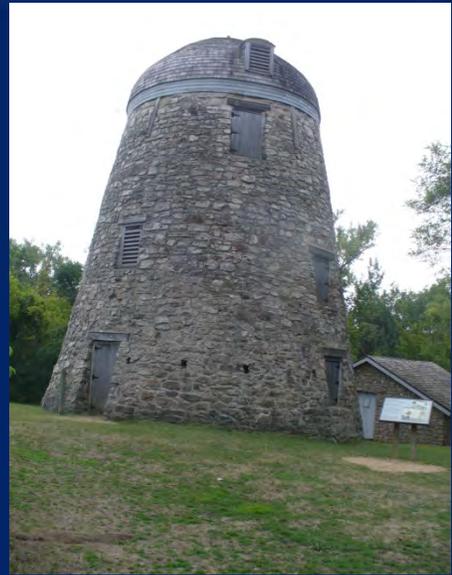


MINNESOTA RIVER STATE TRAIL FRANKLIN TO LE SUEUR MASTER PLAN



Minnesota Department of Natural Resources
Division of Parks and Trails
October 2015



The Minnesota Department of Natural Resources, Parks and Trails Division would like to thank all who participated in this master planning process. Many individuals and groups in trail communities have been working for many years to help establish this trail. Many DNR staff, city, county, and state officials, trail association members, and local citizens contributed their time and energy to the planning process as well.

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Minnesota Department of Natural Resources Approval of Minnesota River State Trail – Franklin to Le Sueur Master Plan

Minnesota Statutes, Section 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 Minnesota River State Trail from Franklin to Le Sueur, for a distance of approximately 120 miles. This trail was authorized in 2002 and amended in 2007, in Minnesota Statutes, Section 85.015, Subdivision 22.

The Minnesota Department of Natural Resources interdisciplinary team developed the Master Plan with assistance from many user groups, local government agencies, and other stakeholders located throughout the trail corridor. The plan received input and comments from the public during a 30-day public review period and an open house meeting held in Mankato.

The Minnesota River State Trail – Franklin to Le Sueur Master Plan has been reviewed by the Division of Parks and Trails and by the Southern Regional Environmental Assessment Team.

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

Erika Rd Rivers
Erika Rivers, Director
MNDNR, Division of Parks and Trails

10/30/2015
Date

TABLE OF CONTENTS

- 1. Executive Summary..... 1
- 2. Planning Process, Purpose and Scope..... 3
 - Planning History 3
 - Public Involvement and Partnerships 4
 - Legislative Authorization..... 8
 - Outdoor Recreation Act 8
 - Guiding Principles for Sustainable Trails..... 12
 - Vision and Goals for the Minnesota River State Trail 13
 - Regional Trail Connections..... 14
- 3. Recommended Trail Uses 16
- 4. Trail Alignments 18
 - Overview 18
 - Segment 1: Franklin to Fort Ridgely State Park 22
 - Segment 1 Trail Communities and Connections..... 23
 - Segment 2: Fort Ridgely State Park to New Ulm 29
 - Segment 2 Trail Communities and Connections..... 31
 - Segment 3: New Ulm to Mankato..... 36
 - Segment 3 Trail Communities and Connections..... 38
 - Segment 4: Mankato to Saint Peter..... 46
 - Segment 4 Trail Communities and Connections..... 48
 - Segment 5: Saint Peter to Le Sueur 53
 - Segment 5 Trail Communities and Connections..... 55
 - Segment 6: Chief Sleepy Eye Segment..... 58
 - Segment 6 Trail Communities and Connections..... 60
- 5. Trail Management..... 63
 - Projected Trail Use 63
 - Trail Maintenance 64
 - Information and Education 65
 - Enforcement 67

6. Trail Corridor Resources..... 69

- Ecological Classification System..... 69
- Climate 73
- Vegetation..... 74
- Water Resources, Recreation and Fisheries 78
- Wildlife 88
- Historical and Cultural Resources 92
- Socioeconomic Resources..... 95

7. Implementation 97

- What Happens After the Master Plan is Finished? 97

References 101

Appendix A: Summary of Meeting Results and Public Comments 103

- Initial Open Houses 103
- Public Review Period..... 104

Appendix B: Special Concern, Threatened or Endangered Species, and Natural Features 109

LIST OF FIGURES

Figure 1: Trail Planning Process Chart..... 6

Figure 2: Authorized and Developed State Trails 7

Figure 3: Regional Context 20

Figure 4: Segment 1 21

Figure 5: City of Franklin 24

Figure 6: Fort Ridgely State Park Summer Map..... 28

Figure 7: Segment 2 30

Figure 8: City of New Ulm 32

Figure 9: Flandrau State Park Summer Map..... 35

Figure 10: Segment 3 37

Figure 11: City of Courtland 39

Figure 12: City of Mankato..... 40

Figure 13: Minneopa State Park 45

Figure 14: Segment 4 47

Figure 15: City of Kasota 50

Figure 16: City of Saint Peter 51

Figure 17: Segment 5 54

Figure 18: City of Le Sueur 56

Figure 19: Segment 6 59

Figure 20: Map of Redwood Falls 62

Figure 21: Ecological Subsections 72

Figure 22: Presettlement Vegetation..... 75

Figure 23: Current Land Cover 76

Figure 24: Watersheds 83

Figure 25: Hydrology and Wetlands – Segments 1 and 2 84

Figure 26: Hydrology and Wetlands – Segment 3..... 85

Figure 27: Hydrology and Wetlands – Segments 4 and 5 86

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1. EXECUTIVE SUMMARY

Trail Alignment and Development

The Minnesota River State Trail is a legislatively authorized state trail which, when complete, will connect Big Stone Lake State Park to the city of Le Sueur. A master plan for the section between Big Stone Lake State Park and the city of Franklin was completed in February 2008. This master plan addresses the section between Franklin and Le Sueur, as well as a loop connecting the cities of Redwood Falls and Sleepy Eye to Fort Ridgely State Park. The trail is envisioned to connect communities, state and county parks, regional trails, and historic and cultural sites in the Minnesota River Valley. In Le Sueur, it will ultimately connect to the Minnesota Valley State Trail, which is planned to extend to Fort Snelling State Park.

In 2015, the Division of Parks and Trails created a System Plan to advance new approaches to managing DNR's state parks, recreation areas, trails, forest recreation areas, and water recreation system. This plan designated the Franklin to Le Sueur section of the Minnesota River State Trail as a Core: Division-led state trail and the Sleepy Eye loop as Core: Partner-led. This master plan was developed prior to adoption of the System Plan; however, the System Plan will guide implementation of the Minnesota River State Trail.

For planning purposes, this section of the trail has been divided into six segments:

- Segment 1: Franklin to Fort Ridgely State Park
- Segment 2: Fort Ridgely State Park to New Ulm
- Segment 3: New Ulm to Mankato
- Segment 4: Mankato to Saint Peter
- Segment 5: Saint Peter to Le Sueur
- Segment 6: Chief Sleepy Eye Segment: Redwood Falls through Sleepy Eye to Fort Ridgely State Park

A specific alignment has not been determined for the trail. The plan identifies search corridors in which specific alignments will be sought, and describes some potential alignments within these corridors. Points that should be connected by the trail and criteria for selecting trail alignments are identified for each segment.

Since much of the land in the Minnesota River Valley is in private ownership and is subject to frequent flooding, trail alignments may follow county or township roads or, in some cases, state highways. However, it is not envisioned that the trail will be located entirely in or along road rights-of-way. The goal is to find alignments that take trail users away from the road to provide access to scenic views of the river and natural and cultural amenities. The trail must also avoid wetlands, high quality plant communities, and other sensitive resources. Land acquisition from willing sellers will be necessary in order to accomplish this goal.

It is anticipated that the trail segment between the cities of Mankato and Saint Peter may be closest to implementation, based on the planning efforts of those communities. However, implementation will depend on many factors, and cannot be tied to an exact time frame. An interim step towards off-road trail development is identification of on-road cycling routes, using road shoulders or signed bike routes in cities.

Recommended Trail Uses

The Minnesota River State Trail is proposed to be a multi-use trail with the following recommended trail uses: bicycling, walking and running, dog walking, in-line skating/skate skiing, cross-country skiing and snowshoeing, horseback riding, snowmobiling, fishing access, environmental education, and interpretation. Hunting in the trail corridor will generally be allowed except where regulated or prohibited by community ordinance or state park rules and regulations. Limitations of width, compatibility of uses, landowner agreements, land use restrictions, and resource constraints may dictate that not all recommended uses can be accommodated at all times for the entire length of the trail. Additional alternative trail alignments will be pursued as necessary to accommodate proposed uses. Trail development will be accessible to people with disabilities wherever possible.

Trail Management

The plan contains recommendations for maintenance, enforcement, and interpretation of natural and cultural resources. Trail maintenance is critical to provide and sustain the quality experience trail users expect and appreciate. The plan recommends an adequate level of enforcement be provided, via a multifaceted approach, to help maintain a safe and secure trail environment. The goal is to encourage trail users to understand and obey trail rules, respect other trail users, and respect adjoining properties.

Natural and Cultural Resources

The ecological value of the trail corridor will be enhanced wherever possible through resource management. The vegetation within the trail right-of-way will be managed to prevent and reduce invasive species and provide a healthy diversity of native woodland, wetland, and prairie communities for wildlife habitat and for the enjoyment of trail users and adjoining landowners. Native flowers, grasses, trees and shrubs that are consistent with the natural plant communities of the area will be planted and managed. Areas disturbed during construction will be seeded with native plants. Cultural resources will be preserved and managed for interpretive purposes. Trail users will have opportunities to experience the history of the Minnesota Valley region through existing historical and proposed interpretive sites.

2. PLANNING PROCESS, PURPOSE AND SCOPE

Planning History

The Minnesota River State Trail was authorized in 2002, but the idea of a trail extending the length of the river valley has been around since the 1970s. A number of plans since that time have advanced the concept.

- In 1971, Itasca Engineering, Inc. completed a study for the DNR entitled **Recreation Trail System, Le Sueur to Ortonville in the Minnesota River Valley**. The purpose of the study was “To provide a preliminary recreational trails plan in the Minnesota River Valley from Le Sueur to Ortonville including the desirability and feasibility of this work with the expressed purpose of preserving, developing, and using the natural attributes of the Minnesota River Valley.” The study recommended extending recreational trails the length of the river valley.
- The US Fish and Wildlife Service and the DNR jointly produced **Comprehensive Plan: Minnesota Valley National Wildlife Refuge, Recreation Area and State Trail** in 1984. The plan balanced priorities for recreational developments and resource protection on lands under a variety of federal, state, and local jurisdictions. Recommendations were made for the development of multi-use trail corridors from Fort Snelling State Park to Le Sueur. Looped trail systems on both sides of the river, as well as dual treadways, were recommended to accommodate all user groups.
- In 1996, the Minnesota Legislature directed the DNR to work with Minnesota River communities to develop a plan for recreational facilities and opportunities, including trails, throughout the river corridor. The plan, entitled **Minnesota River Watershed Comprehensive Recreational Guidance Document and Trail Corridor Concept Plan (1998)**, included an inventory of existing facilities, goals and objectives, recreation needs, implementation strategies, and a trail corridor concept plan.
- **Linking Communities: The Minnesota River Trail** was prepared by the Center for Changing Landscapes (CCL), an interdisciplinary design center of the University of Minnesota – College of Architecture and Landscape Architecture and College of Natural Resources in 2004. CCL worked with DNR and local communities to analyze the ecology of the trail’s landscape from Montevideo to New Ulm, assess future development and land use trends, and develop trail alignment and trailhead design options for Granite Falls. The study was funded by the Legislative –

Citizen Commission on Minnesota Resources (LCCMR) through the Environment and Natural Resources Trust Fund.

- In 2007, with additional LCCMR funding, the Center for Changing Landscapes prepared a second report, ***Minnesota River Trail Communities: Designs for Trails & Waterfronts in Redwood Falls, New Ulm, and Saint Peter***. The report makes recommendations for trail alignments and trailheads in these communities, as well as connections to existing trails, byways, and regional attractions.
- The DNR completed the ***Minnesota River State Trail Master Plan*** in 2008 for the section of the trail from Big Stone Lake to Franklin. The plan recommended potential trail corridors, points of interest to be connected by the trail, and trail uses. Looped trails connecting both sides of the river and multiple trail surfaces were recommended for portions of the trail. Three portions of this trail totaling 13 miles have been developed to date. Many portions of the 2008 plan were used to inform this master plan.
- Another CCL publication related to the Upper Minnesota River Valley is ***County Trail System Design: Brown, Lyon, Redwood and Renville Counties (2010)***. This study includes designs and plans at the county, community, district, and site scales within each of the four counties. Major regional trails discussed in the report include the proposed Chief Sleepy Eye Trail between Redwood Falls and the city of Sleepy Eye.
- ***Conservation in the Middle Minnesota Valley: A Blueprint and Action Plan (2010)*** was a joint effort of Great River Greening, Green Corridor, Inc., and the Southwest Initiative Foundation. Green Corridor, Inc., is an organization formed by a coalition of engaged citizens, community and business leaders within the mid-section of the Minnesota River Valley with a goal of developing outdoor recreational opportunities that would promote regional economic growth, development, and tourism in this area. The plan, funded by the Legislative and Citizens Commission on Minnesota Resources, identifies conservation targets and establishes priorities for land protection, restoration, and recreational improvements such as trails.

These studies, as well as others focused on related natural resources of the Minnesota River Valley, have helped to inform this master plan.

Public Involvement and Partnerships

Communities in the Mankato - Saint Peter area have been working for some time as part of a regional transportation group to develop a trail that would

connect both cities and the Sakatah Singing Hills State Trail between Mankato and Faribault.

The Mankato Area Transportation and Planning Study (MATAPS) is a regional transportation planning effort that includes the counties of Blue Earth, Nicollet, LeSueur; and the cities of Mankato, North Mankato, Saint Peter, and Eagle Lake, as well as MnDOT. Since completion of the Center for Changing Landscapes 2007 plan, the MATAPS Partners have pursued trail implementation. In 2009 the partnership requested \$400,000 in State of Minnesota Capital Improvement Bonding funds for planning and environmental study to establish a preferred alignment and to begin design work. The legislation was passed, but was vetoed by the Governor.

As part of the MATAPS 2010 update of the *2035 Multi-Modal Transportation Plan*, the connections of regional and state trails were incorporated, including the connection between Mankato and Saint Peter. In 2011, the original partners in the 2009 bonding requests met along with MnDOT and DNR to discuss next steps in the trail planning. Development of this plan grew out of this initiative.

Master plans for state trails must be complete before state funds can be used for trail development. While the Mankato-Saint Peter connection may be the most implementable segment of the trail in the short term, it makes sense for the plan to address the entire trail section between Franklin and Le Sueur.

The MATAPS Partners held two well-attended open houses in May 2012, in Mankato and Saint Peter, to assess community interest.

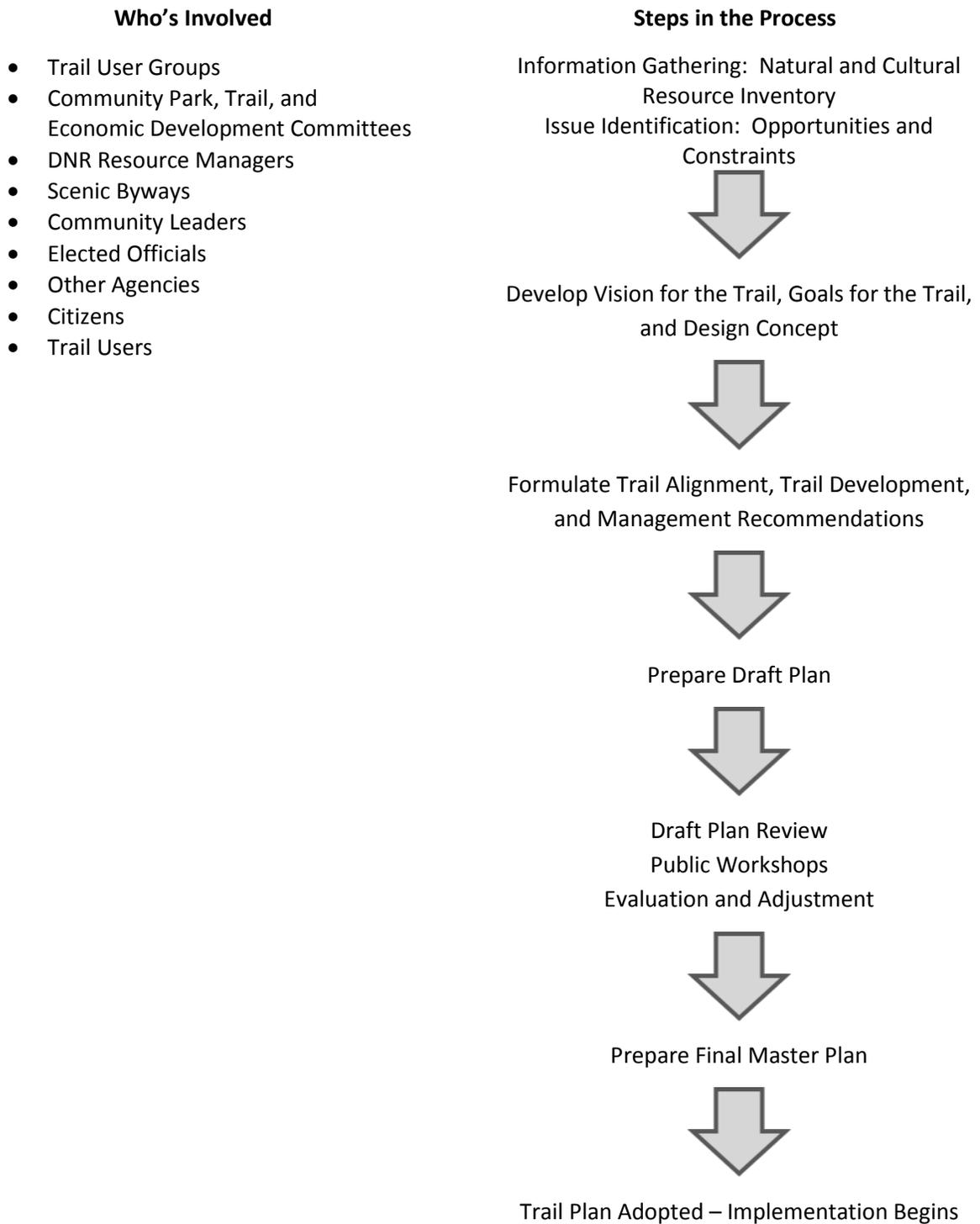
Two open houses, in New Ulm and Mankato, were held by the DNR in May 2013 to provide direction for the planning process. Several posters were displayed around the room depicting potential trail routes and the vision for the trail. A short presentation outlined the goals of the trail, planning process, and trail benefits.

A 30-day public review period was held from December 2013 to January 2014 and about 40 people attended a public open house meeting in Mankato. Posters were displayed at the meeting to inform attendees about potential trail routes and resources located in the Minnesota River Valley. DNR staff were present to answer questions, and comment forms were provided for people to fill out and submit.

A detailed summary of meetings and public comments received is provided in [Appendix A](#).

[Figure 1](#) on the following page illustrates the planning process used to develop the master plan.

Figure 1: Trail Planning Process Chart



Legislative Authorization

Legislation authorizing the Minnesota River State Trail system was first passed in 2002 (Minn. Statutes Chapter 85.015, Subd. 22). The statute was amended in 2007 to include the Chief Sleepy Eye “loop.” [Figure 2](#) depicts the legislatively authorized state trail system. Current legislative language is as follows:

Subd. 22. Minnesota River Trail, Big Stone, Le Sueur, Redwood, Brown, and Chippewa Counties.

The trail shall originate at the entrance to Big Stone Lake State Park and extend along the Minnesota River Valley to connect to the Minnesota Valley Trail at the city of Le Sueur. The trail shall include a loop between Fort Ridgely State Park and the cities of Redwood Falls and Sleepy Eye. A segment shall be established connecting the cities of Granite Falls and Montevideo.

Outdoor Recreation Act

The Minnesota River State Trail is one of the legislatively authorized state trails in the Minnesota State Trail System. 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 Franklin – Le Sueur section of the 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.*

The Minnesota River State Trail will eventually link state parks, historic sites, scientific and natural areas (SNA), and other state trails to communities along the trail. It will provide a scenic route along the Minnesota River Valley, paralleling the river for much of its length, and providing access to the Minnesota River itself, a designated State Water Trail.

- 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;

The Minnesota River Valley offers a rich diversity of natural, scientific, cultural, and historical resources. The importance of the trail route is underscored by the parallel Minnesota River Valley National Scenic Byway, a route that has already been designed to recognize, link, and interpret many of these resources. The sampling below illustrates the variety of the resources that will be connected by the trail.

Franklin to Fort Ridgely State Park

- Cedar Mountain SNA – scenic and unique high quality rock outcrops and prairie habitats
- Fort Ridgely State Park – Historic Fort Ridgely, an important site of the US – Dakota War of 1862; varied recreational opportunities
- FairRidge Regional Trail – 7-mile paved trail connects the city of Fairfax to the park

Fort Ridgely State Park to New Ulm

- Little Rock Trading Post – established in 1834, this site was an important early trading site
- Harkin Store – living history site maintains general store as it appeared in late 1800s
- City of New Ulm – multiple historic and cultural sites reflecting the city’s rich German heritage and the US – Dakota War of 1862, including the Hermann Monument, Brown County Historical Museum and Wanda Gag House
- Flandrau State Park – diverse natural communities, recreational opportunities (camping, hiking and swimming), WPA-era buildings along the Cottonwood River

New Ulm to Mankato

- Minneopa State Park – a major waterfall on Minneopa Creek, historic wind-powered stone mill, recreational opportunities
- Swan Lake – one of the largest prairie pothole lakes in North America, with a number of Wildlife Management Areas (WMA)
- Mankato’s extensive regional trail system, including the Red Jacket Trail and trail connections to Minneopa State Park
- Mankato’s historic and cultural resources, including the Carnegie Art Center, Betsy-Tacy Houses, Minnesota River Center

Mankato to Saint Peter

- Seven Mile Creek County Park – 628 acres along a designated trout stream with varied recreational opportunities
- Kasota Prairie SNA and Kasota Prairie Preserve
- Saint Peter parks and historic sites, including Gustavus Adolphus College Arboretum and Sculpture Garden
- Traverse des Sioux Treaty Site History Center – home of Nicollet County Historical Society

Saint Peter to Le Sueur

- Ottawa Bluffs Preserve
- W.W. Mayo House in Le Sueur
- Le Sueur Museum and Green Giant Interpretive Center

Chief Sleepy Eye Segment

- Gilfillan Estate – historic estate built by the Gillfillan family , host of annual Farmfest
- Sleepy Eye Depot Museum and Monument – Chicago-Northwestern Railroad depot built in 1902
- Sleepy Eye Lake recreation opportunities

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

The diverse topographic features of the Minnesota River Valley, including bluffs, terraces, flood plain, and wetlands create a highly scenic landscape and provide a variety of perspectives from which to appreciate its beauty. Wooded bluffs, granite outcroppings, prairie, and wetlands are set within a pastoral agricultural landscape, interspersed with historic small towns and cities, which offer additional scenic amenities.

(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 design guidelines for state trails are developed with slower modes of travel (walking, cycling, jogging, in-line skating, horseback riding, etc.) in mind. Features such as carefully designed vistas and views, variations in horizontal and vertical alignment, and attention to trailscape detailing are used to enhance trail users’ interaction with the natural environment.

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



The Mayo House is the historic home of the founders of both the Mayo Clinic and Minnesota Valley Canning Company, which later became the Green Giant Company.



The sun sets over the Minnesota River near the Traverse des Sioux Treaty Site. ©Explore Minnesota Tourism

The Minnesota River was an extremely significant travel corridor throughout the state's history. It was used by American Indians as a travel route and the valley is rich with archaeological resources. The river was later used by early explorers and fur traders. Segments of the Red River Oxcart Trails paralleled the river. Steamboats traveled on the river beginning in the 1850s, making it one of the primary avenues for settlers into Minnesota's interior. By the late 19th century, railroads also paralleled the river and became critical in the growth of the region's agricultural economy.

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

This section of the Minnesota River State Trail will connect many units of the outdoor recreation system, including three state parks – Fort Ridgely, Flandrau, and Minneopa. This trail will connect to the already-planned section of the Minnesota River State Trail from Big Stone Lake to Franklin; the Minnesota Valley State Trail, from Fort Snelling State Park to Le Sueur; and the Sakatah Singing Hills State Trail from Mankato to Faribault. Numerous SNAs, WMAs, and water access sites are located within the trail corridor. In addition, the entire Minnesota River is a designated State Water Trail, and a number of state historic sites are located within the corridor.

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

The majority of land in the trail search corridor is privately owned. This poses a significant challenge to assembling a contiguous trail corridor. Public land will be used when trail development is compatible with the management objectives of the administering agency. State, county, and township road rights-of-way may also be used.

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*

The Minnesota River Valley landscape is already recognized for its scenic, natural, and cultural resources, with routes such as the National Scenic Byway and the State Water Trail providing opportunities for interpretation of these resources. Plant community restoration projects, wildlife habitat improvement projects, and interpretive features at trailheads are all projects that could benefit trail users.

The trail corridor can be a corridor for both habitat and recreation, across landscapes developed for agricultural, commercial, and residential use. The ecological value of the corridor could be enhanced by working to restore healthy native plant communities.

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

The master plan evaluates and uses current research and trends on existing use of trails and demand for trail opportunities. Current demographic data is taken into account, as well as information gathered at public workshops.

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 trail development. 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 2007b).

Applications of these principles will minimize the impact of trails on natural resources and sensitive ecological systems. Importantly, the strict application of these guiding principles must be balanced with the desire to locate trails where they will be of high recreational value to the targeted users, who often want to be close to nature, enjoy beautiful scenes, and observe wildlife. This is an important consideration and underscores the need for resource managers, trail designers, and other interested individuals to work together to determine which values are the most important for any given trail alignment.

Vision and Goals for the Minnesota River State Trail

Vision:

The following vision and goals were developed as part of the planning process for the section of the Minnesota River State Trail from Big Stone Lake State Park to Franklin and have been adapted to address the character and features of the Franklin to Le Sueur section:

The Minnesota River State Trail will link the natural, cultural, and historical jewels of the valley, focusing state and regional attention on Minnesota’s “namesake” river. The trail will link river valley communities engendering new partnerships. The trail will provide a way to a healthier lifestyle for valley residents and their guests; tell the story of the people who have come and gone and the stories of those who live here today. The trail will bolster the rural economy, catalyzing new economic opportunities and stability in rural Minnesota. Trail users will benefit physically, psychologically, and spiritually from learning about and experiencing the resources of this landscape.

Goals:

- Adhere to the [guiding principles for sustainable trails](#).
- The Franklin to Le Sueur section of the Minnesota River State Trail will be developed and managed according to criteria for state trails in the 2015 Division of Parks and Trails System Plan.
- Serve many different types of users throughout all seasons of the year.
- Increase awareness of the natural and cultural features of the Minnesota River Valley, including the river’s significance to growth and development of the state; native plant communities, especially prairie; bird populations and other wildlife; geological history of the valley, including the impact of the Glacial River Warren on the landscape seen today; and the history of the Dakota people.
- Preserve and protect environmental resources.
- Promote economic growth in the area by increasing tourism, attracting and retaining businesses, and linking tourist attractions.
- Provide a fun, safe, recreational resource for residents of all ages and interests, thereby benefiting their health and improving their quality of life.

Vision Statement

The Minnesota River State Trail will link the natural, cultural, and historical jewels of the valley, focusing state and regional attention on Minnesota’s “namesake” river. The trail will link river valley communities engendering new partnerships. The trail will provide a way to a healthier lifestyle for valley residents and their guests; tell the story of the people who have come and gone and the stories of those who live here today. The trail will bolster the rural economy, catalyzing new economic opportunities and stability in rural Minnesota. Trail users will benefit physically, psychologically, and spiritually from learning about and experiencing the resources of this landscape.

- Serve as an alternate means of transportation in the region, connecting rural areas to town centers, commercial districts, parks and schools, and reducing vehicle trips, thereby improving the environment.
- Connect to existing and future trail networks.
- Provide new links between cities and townships and connect local, county, and state parks and conservation areas.
- Showcase the unique cultural themes of the Minnesota River Valley, including settlement history, Dakota culture, and agriculture.

Regional Trail Connections

There are many other trails of statewide or regional significance in the river valley that will either parallel or connect to the Minnesota River State Trail. These connections will allow more people easy access to the state trail and increase desirability of trail usage in the area.

Minnesota Valley State Trail: This multi-use trail is authorized to extend from Le Sueur to Fort Snelling State Park, a distance of about 75 river miles. The developed portion of the trail runs through the Minnesota Valley State Recreation Area (SRA), which encompasses several separate units (specific land areas) between Belle Plaine and Shakopee. A six-mile trail portion between Chaska and Shakopee is paved, while an additional 29 miles are natural surface for mountain bike and horse use. In winter, the SRA offers 5 miles of ungroomed cross-country ski trails and 35 miles of groomed snowmobile trail.

Sakatah Singing Hills State Trail: Located on a converted rail-trail, the Sakatah Singing Hills State Trail is a 39-mile paved trail between Mankato and Faribault. The trail begins at Lime Valley Road near State Highway 14, connects to Mankato's trail system, follows a signed route on city streets through Waterville, passes through three miles of Sakatah Lake State Park, and ends east of Interstate 35 in Faribault. The trail has been developed for bicycling, in-line skating, horseback riding, skiing, hiking, and snowmobiling. It is generally level and wheelchair accessible.

Mankato Area Trails: Mankato and Blue Earth County have developed an extensive trail system, as shown in [Figure 12](#), including the Red Jacket, North Minnesota River, South Route, and Minneopa Trails, with a connection to the Sakatah Singing Hills State Trail.

FairRidge Trail: This regional trail extends for approximately 7 miles between the Fairfax Depot Park and Fort Ridgely State Park. The trail is developed for bicycling, hiking, jogging, and in-line skating.



Two cyclists ride the Sakatah Singing Hills State Trail on a fall day.

Minnesota River State Trail, Big Stone Lake to Franklin section: Several portions of the Minnesota River State Trail between Big Stone Lake and Franklin have been developed through local initiatives and joint powers agreements:

- Montevideo to Wegdahl – 5 miles were developed by Chippewa County on an abandoned railroad grade.
- Big Stone Lake State Park to Ortonville – 4 miles were developed by Big Stone County.
- Milan – 4 miles of trail connect the small town of Milan to Milan Beach Resort on Lac qui Parle Lake.

Minnesota River Valley Scenic Byway: The scenic byway starts in Brown’s Valley on the Minnesota/South Dakota border and continues east down the river to end in Belle Plaine for a distance of 287 miles. It was designated as a state scenic byway in 1996 and as a National Scenic Byway in 2002. It is an automobile route that follows quiet county roads close to the river and connects many important natural and cultural resources in the Minnesota River Valley. The byway is managed by the Minnesota River Valley Scenic Byway Alliance, a nonprofit corporation. Its purpose is to promote, develop, and share the stories of the river. A well-developed web site allows byway users to create their own journey by providing a variety of routes, maps, and brochures that focus on a particular river story. Along the byway, many existing “discovery sites” have interpretive panels or plaques that were placed over time by a variety of organizations.

State Water Trails: Several rivers within the Minnesota River watershed are part of the State Water Trail system. In addition to the Minnesota River, its tributaries of the Blue Earth, Watonwan, Cottonwood, Redwood, Chippewa, and Pomme de Terre rivers are all state water trails. The river flows rather gently along the trail corridor and makes for easy paddling. Several of the smaller tributaries flow faster and have small rapids for portions of the year.

The Minnesota River was added to the Wild and Scenic River program in 1977. Segments of the river from Lac qui Parle dam to the Redwood County Highway 11 bridge are classified as either scenic or recreational rivers.



A group of kayakers paddle down the Blue Earth River. Photo courtesy of Minnesota State University - Water Resources Center

3. RECOMMENDED TRAIL USES

The Minnesota River State Trail will be a multi-use, multi-season trail, with different uses appropriate at different times of the year. Some trail segments will be developed as a single treadway with compatible multiple uses such as walking, bicycling and in-line skating, as well as snowmobiling. Other segments may be developed as separate treadways for specific uses; for example, a natural surface treadway for horseback riding. Not all uses may be accommodated on all segments of the trail due to limitations of right-of-way width, land use restrictions, landowner agreements, and resource constraints. The exact number and location of treadways will be determined on a segment-by-segment basis.

The recommended uses for the trail include the following:

Bicycling: Bicycling is a popular activity in Minnesota, with approximately 590 miles of paved or hardened/improved state trails to accommodate a portion of this rising demand. Although advanced cyclists often prefer riding on roads, trails provide a more comfortable and safer option for casual and recreational cyclists and children. Bicycling is a recommended use throughout the entire length of the trail.

Hiking and Walking: The relative flatness of this trail will lend itself to hiking and walking activities; which are second only to bicycling as popular low-impact cardiovascular fitness activities on state trails. Hiking and walking are recommended uses along the entire length of the trail.

Running and Jogging: Many people use 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.

In-Line Skating / Skate Skiing: In-line skating levels of use have declined, but it remains a popular sport. This activity requires a paved trail with a smooth, wide surface, and thus would be feasible only on paved portions of the trail.

Dog Walking: Dog walking is allowed 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.

Horseback Riding: Horseback riding is a popular activity in the Minnesota Valley and there are several active and organized riding clubs. Development of an interconnected horse trail system should begin at those locations where there are existing horse trails and horse campgrounds. The system could build and



expand from those locations, focusing on the development of loop trails that could eventually be connected by a linear trail. Existing horse trail hubs are:

- Fort Ridgely State Park
- Seven Mile Creek County Park

Snowmobiling: Snowmobiling should be considered as a use as trail alignments are acquired. There are significant gaps in the snowmobile trail network in the Minnesota River Valley, and strong interest in finding scenic, permanent alignments. By concentrating snowmobile use on the trail, environmental impacts will be limited to the trail corridor. This is especially important in portions of the corridor with extensive wetland environments. (Most state trails are open to snowmobiles and some trails include separate natural-surface treadways used for snowmobiling and/or horseback riding.)

Cross-Country Skiing and Snowshoeing: Cross-country skiing and snowshoeing are possible winter uses when snow conditions permit.

Hunting: State trails allow hunting within the trail right-of-way during the legal hunting season, except where restricted by local ordinance. The current rule 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.”

Communities may restrict firearms or bow and arrow discharge, or trapping, by ordinance. These ordinances take precedence over state trail rules.

Natural Resources Education/Interpretation: Use of state trails for natural 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 trail can enhance the trail users’ experience. Nature photography and geocaching are also popular activities.

Accessibility: The trail will be accessible to people with disabilities wherever possible. Grades in excess of 5% 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.

Fishing Access: The trail will provide access to the Minnesota River and its tributaries, including several state designated trout streams. The trail should be designed to connect anglers to fishing opportunities.

4. TRAIL ALIGNMENTS

Overview

The unique geology of the Minnesota River Valley and bluff lands is a distinct asset for the trail; its dramatic elevation changes, long distance views, and rock outcrops create spectacular scenery. Likewise, the valley bottoms provide an opportunity for trail users to view the surrounding bluffs from relatively flat terrain. The varying seasons and climatic changes allow for different uses at different times of the year making trail use attractive year-round.

For the purposes of this plan, this section of the Minnesota River State Trail has been divided into six planning segments:

1. Franklin to Fort Ridgely State Park
2. Fort Ridgely State Park to New Ulm
3. New Ulm to Mankato
4. Mankato to Saint Peter
5. Saint Peter to Le Sueur
6. Chief Sleepy Eye Segment

This chapter of the plan includes the following elements for each planning segment:

- An overview of the highlights of each segment, key connections, criteria for the location of the trail, and a description of potential trail alignments.
- A map illustrating search corridors for potential trail alignments.
- Profiles and maps of each community the trail will connect.
- A description and map of each state park the trail will connect.

Trail corridors illustrated in this section represent “search area” corridors for potential trail alignments. Any route, or combination of routes, within the search corridor could be a potential trail alignment. The alignments described further in this plan are not the only possible alignments, but rather, several potential options at the time of planning. The potential alignments generally follow the most scenic, feasible, and desirable routes.

The alignments generally follow road or abandoned railroad corridors. Where road corridors are used, the goal is to find alignments that take trail users off road rights-of-way, provide access to natural and cultural amenities, and find scenic routes that showcase the landscape. Land acquisition from willing sellers will be necessary to accomplish this goal.

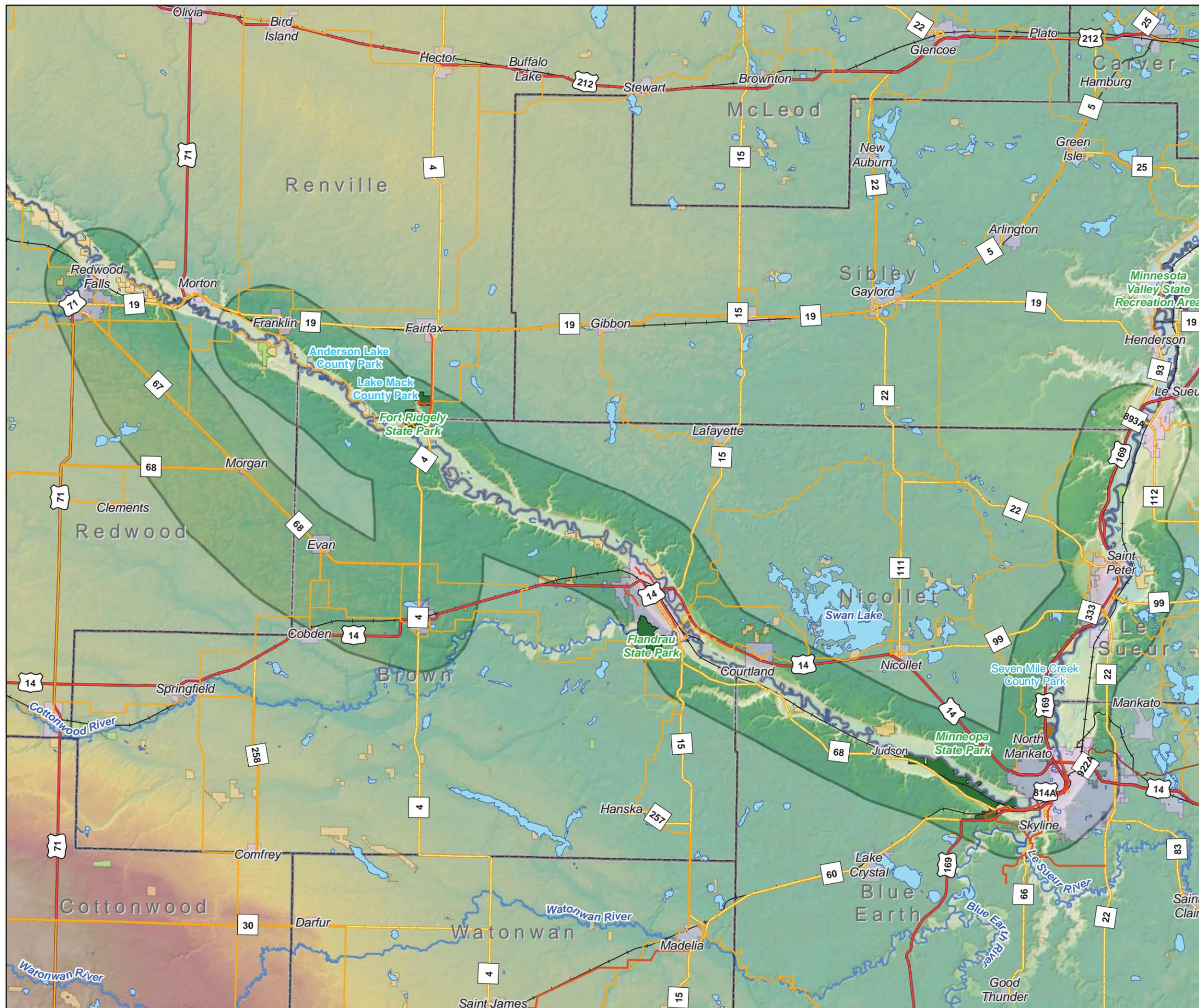
Utilizing a combination of designated bike routes and off-road trails could expedite the process of creating a contiguous trail segment. Directing state trail users onto bike routes would be a temporary solution until an entirely off-road trail alignment can be secured. Coordination between local governments, DNR, and Minnesota Department of Transportation will be critical throughout this process.

Overall Criteria for Location of the Trail

- Provide a scenic route that showcases the landscape of the Minnesota River Valley.
- Minimize trail user exposure to vehicular traffic.
- Minimize impact on wetlands and flood plains.
- Avoid negative impacts on rare and endangered species and avoid fragmentation or disturbance of significant native plant communities.
- Provide snowmobile and horseback riding access where they can be safely accommodated.
- Connect or link to existing trail systems and hubs of outdoor recreation.
- Provide connections to, and vistas of, the Minnesota River and surrounding bluffs.

Minnesota River State Trail

Figure 3: Regional Context



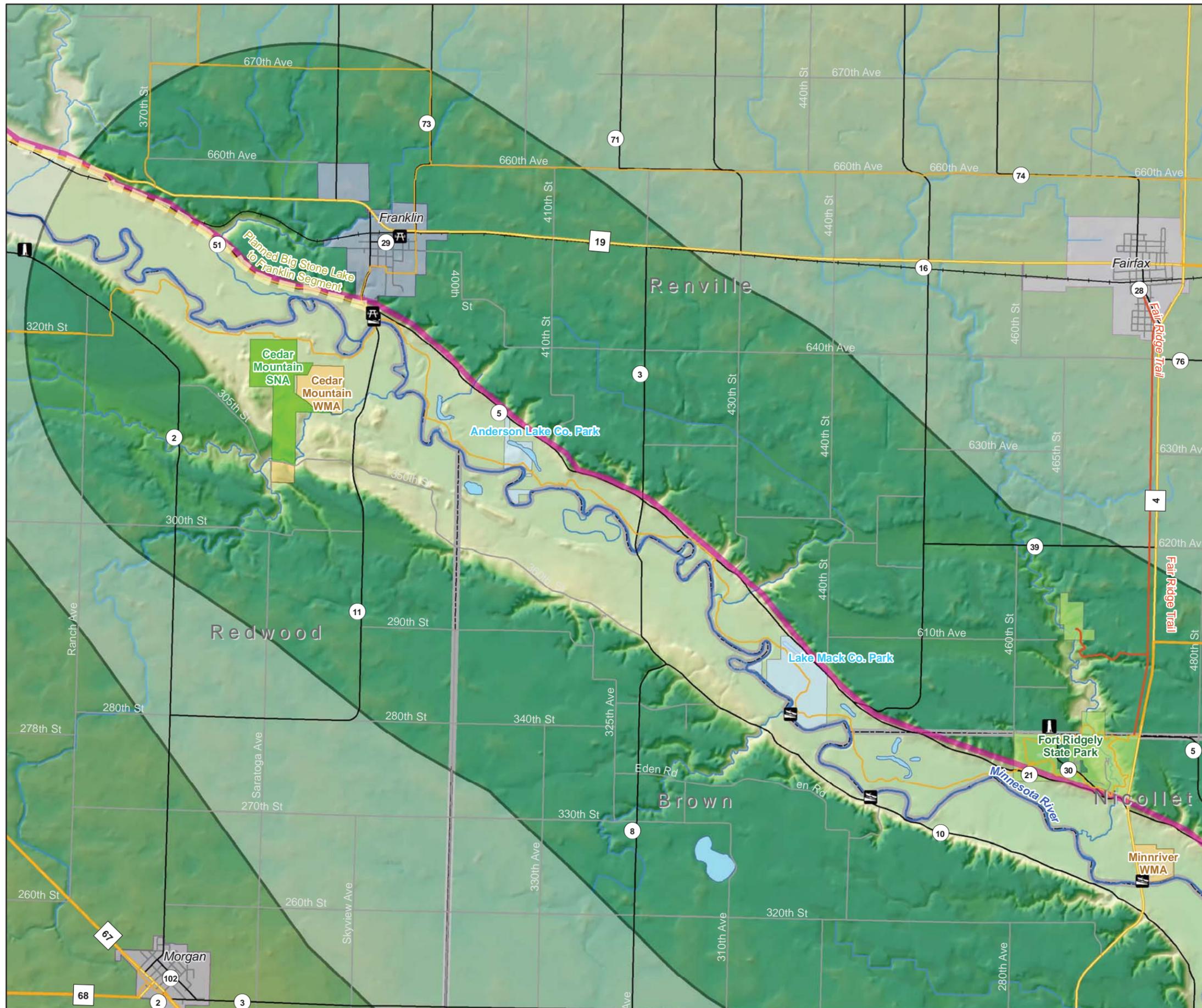
Legend

- U.S. Trunk Highway
- MN Trunk Highway
- Railroad
- Sakatah Singing Hills State Trail
- City and Regional Trails
- Minnesota Snowmobile Trail
- County Boundary
- City Boundaries
- State Park
- State Recreation Area
- Scientific and Natural Area
- Wildlife Management Area
- County Park
- Trail Search Corridor



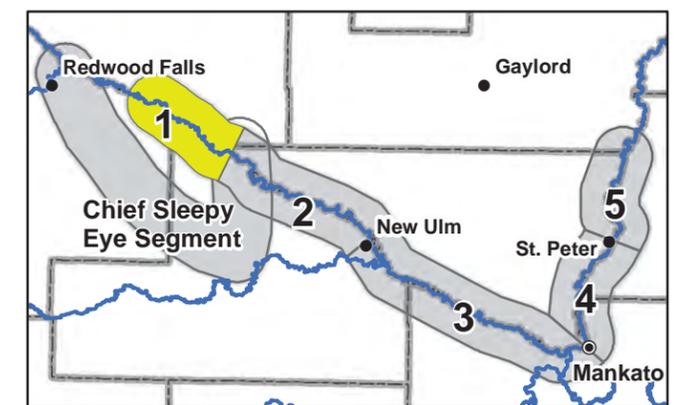
Minnesota River State Trail

Figure 4: Segment 1 - Franklin to Fort Ridgely State Park



Legend

- U.S. Trunk Highway
- MN Trunk Highway
- County Highway
- Local Roads
- Railroad
- Minnesota River Valley Scenic Byway
- Planned Big Stone Lake to Franklin Segment
- City and Regional Trails
- Minnesota Snowmobile Trail
- State Park
- Scientific and Natural Area
- Wildlife Management Area
- County Park
- City Boundaries
- Historic Site
- City Park
- Public Water Access Sites



Segment 1: Franklin to Fort Ridgely State Park

This segment begins in the city of Franklin and extends 12 miles southeast to Fort Ridgely State Park and the Highway 4 bridge. Important recreational areas in this segment include Fort Ridgely State Park and Anderson Lake and Mack Lake county parks. Several areas along the valley contain significant native plant communities; of particular interest is Cedar Mountain Scientific and Natural Area (SNA), which features ancient rock outcroppings and several rare species.

Criteria for this segment include:

- Connect Renville County's parks to the state and county parks both upstream and downstream.
- Take advantage of the Minnesota River Valley Scenic Byway alignment as an identified scenic route with unique design standards.
- Provide appropriate trail surface to complement the current use of the Fair Ridge Trail and trails in Fort Ridgely State Park.

Two potential options were identified for this segment, one on the north side of the river and one to the south. The route to the north is more desirable because it more easily allows for connections to Franklin, Renville county parks, Fort Ridgely State Park, Fair Ridge Trail, and it aligns with the scenic byway. The route to the south would have lower vehicular traffic and could provide better access to Cedar Mountain SNA/WMA. The intent is not to follow road right-of-way for the entire length but to assemble a scenic corridor from willing landowners.

The northern route would follow the Renville County Highway 5 corridor from Franklin east to the Trunk Highway 4 bridge. This road is a portion of the scenic byway. The route follows a generally level river terrace above the flood plain and connects to several county parks. 610th avenue, or several other local roads, could serve as an alternate route west from Fort Ridgely to Highway 5.

The route to the south would cross the Redwood County Highway 11 bridge; then follow local roads and Brown County Highway 10 to State Highway 4. This route includes steeper grades but is less traveled than Highway 5 and also offers scenic views of the river valley. An additional consideration is that the meander of the river has begun encroachment of the Highway 10 right-of-way.

Dual treadways or separate trail corridors could be developed in this area to accommodate all trail users. The area around Fort Ridgely State Park has the potential to be a focal point for a horse trail network. Additional trails connecting to the existing system of public and private trails could create a system of statewide significance.

The existing Fair Ridge Trail will connect to the Minnesota River State Trail and provide an off-road connection to the city of Fairfax.

Segment 1 Trail Communities and Connections

City of Franklin

Franklin is located in Renville County along State Highway 19 overlooking the Minnesota River Valley, with a total land area of 1.1 square miles. The city is the oldest surviving town in Renville County; it was platted in 1882 and incorporated as a village in 1888. Most of the early settlers in the area were Finnish immigrants. A nearby Finnish settlement on the river, known as Finn Town, was the site of a hotel where guests arrived via steamboat. Many Irish immigrants also settled near Franklin, as well as immigrants from Germany, Norway, and Sweden.

Franklin’s population was 510 at the 2010 census. The city is known as Minnesota’s “Catfish Capital,” with a three-day celebration known as Catfish Derby Days, held each year on the fourth weekend in July. The city provides two camping areas, one at the Boat Landing site adjacent to the river, and another at the Ball Park, located on Second Avenue, with public restrooms and showers.

The Boat Landing area is a city park and could be a potential trailhead. The park is located southeast of the intersection of State Highway 5 and County Highway 5. The park has a boat launch on the Minnesota River, several campsites, and parking. This park is also immediately adjacent to the potential routes between Franklin and Fort Ridgley.

Renville County Parks

Two Renville County parks, Anderson Lake and Mack Lake, are found in this segment. Both are located in floodplain areas between the main channel of the river and backwater lakes, and are popular fishing spots. Anderson Lake’s main attraction is shorefishing. Mack Lake’s shallow, spring fed lake provides excellent fishing, and shorefishing is also available on a sandbar at the end of the park road. Mack Lake Park provides overnight rustic camping with water, restroom facilities, and a picnic shelter. The park is also the site of the area’s only black granite deposit. Both parks are frequently subject to flooding.



Picnic Shelter at Mack Lake County Park

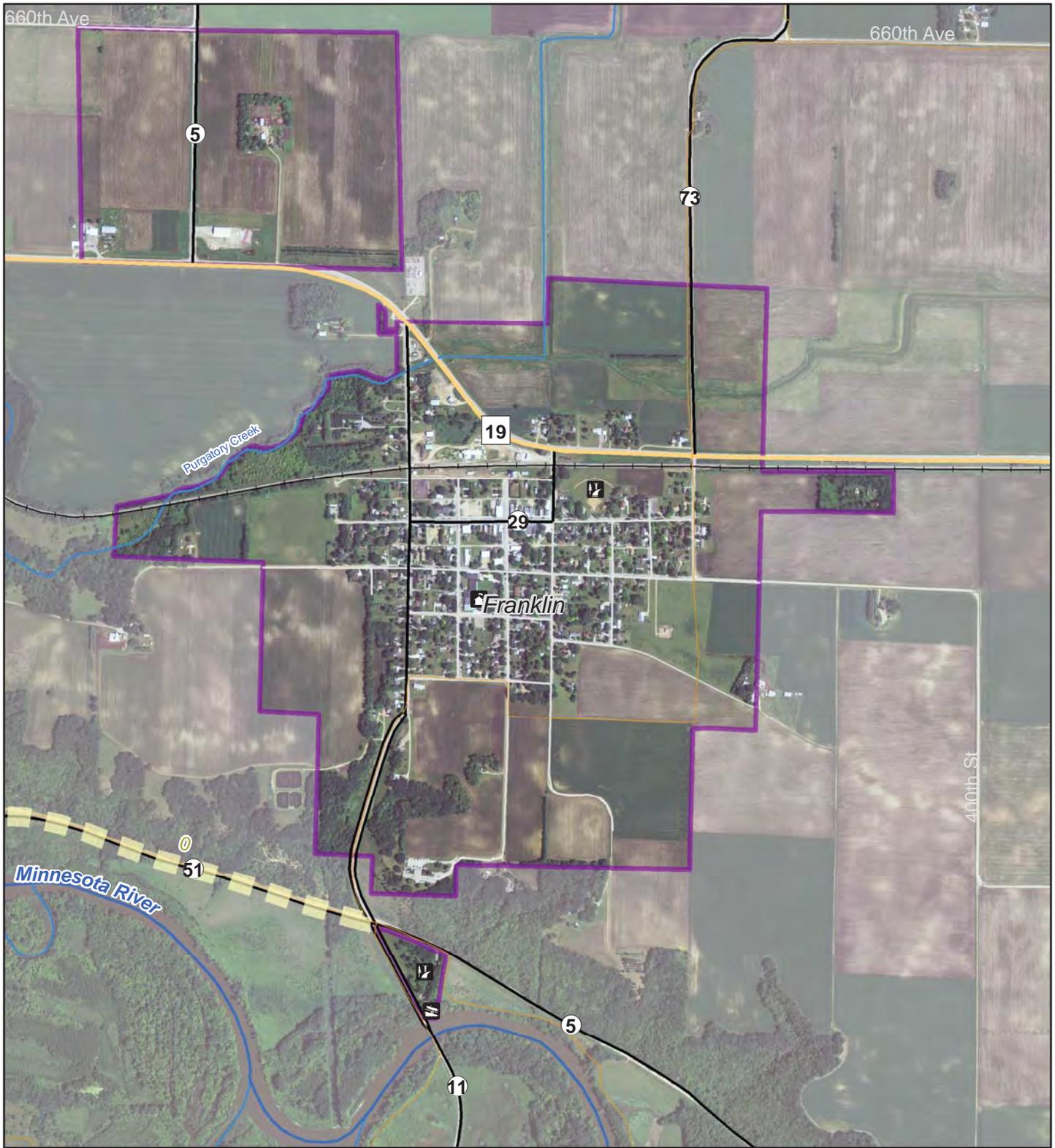
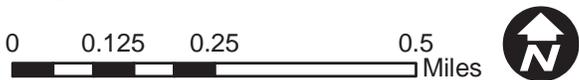


Figure 5: City of Franklin




 MN Department of Natural Resources
 Division of Parks and Trails
 September 2015

Legend

-  MN Trunk Highway
-  County Highway
-  Township Road
-  Municipal Road
-  Railroads
-  Big Stone Lake To Franklin Segment
-  Snowmobile Trail
-  City Boundaries
-  Regional Park
-  City Park
-  School
-  Water Access Site

Cedar Mountain Scientific and Natural Area

The 317 acre Cedar Mountain SNA is located about three miles south of Franklin on the south side of the Minnesota River, with access from Redwood County Highway 11. Cedar Mountain SNA lies on bedrock knobs and ridges that, at 3.4 billion years old, include some of the oldest rocks known to occur in North America. These knobs were once islands in Glacial River Warren, the huge river that drained Glacial Lake Agassiz at the end of the last glacial period and cut the valley now occupied by the Minnesota River. The central knob in the area includes two rock types known only from this site; Cedar Mountain Gabbro and Cedar Mountain Granodiorite.

The SNA supports areas of native dry and mesic prairie, rock outcrop, floodplain forest, and oak woodland habitats. The high quality prairies and rock outcrops of Cedar Mountain SNA are uncommon in Minnesota and becoming increasingly rare due mostly to human activities. They also contain several rare plant populations, including the state and federal threatened prairie bush clover; a state endangered lichen; and three rare plant species found in Minnesota almost exclusively on rock outcrops – plains prickly pear cactus, water hyssop, and Carolina foxtail.

Two parcels totaling 166 acres adjacent to the site are managed as Cedar Mountain WMA. Recreation opportunities at the SNA/WMA include: hiking, hunting, snowshoeing, and wildlife viewing.



The Plains Prickly Pear Cactus, *Opuntia macrorhiza*, is a special concern species in Minnesota. It reaches the eastern extent of its range in Minnesota and is found on rock outcrops and dry prairies like those at Cedar Mountain SNA.

Fort Ridgely State Park

Fort Ridgely, originally established in 1853 on an open plain above the Minnesota River, became the nucleus of one of Minnesota’s oldest state parks.

Fort Ridgely was built in 1853 as a US military garrison on Minnesota’s frontier, designed to provide protection for the newly settled lands of southern and central Minnesota. The fort’s role in the US-Dakota War is described on the [Minnesota Historical Society’s website](http://sites.mnhs.org/historic-sites/fort-ridgely/history) (sites.mnhs.org/historic-sites/fort-ridgely/history):

Nine years later, unkept promises by the US government, nefarious practices by fur traders and crop failure all helped create tensions that erupted into the US-Dakota War in August 1862. Dakota forces attacked the fort twice, on August 20 and August 22. The fort that had been a training base and staging ground for Civil War volunteers suddenly became one of the few military forts west of the Mississippi to withstand a direct assault. Fort Ridgely’s 280 military and civilian defenders held out until Army reinforcements ended the siege.

The Army abandoned the Fort in 1867. Civilians occupied the remaining buildings and later dismantled them for their own use. From 1935 to 1942 the Veteran Conservation Corps excavated the site, restored the foundations of eight fort buildings and reconstructed the entire commissary building. In 1970 the fort was added to the National Register of Historic Places, while much of the park was added in 1989. The Minnesota Historical Society assumed stewardship of the site in 1986.

The old fort site, with five acres of land, was purchased by the State of Minnesota in 1896 to create a memorial to settlers who had fought in the US-Dakota War. When an additional 148 acres were purchased in 1911, the site was designated as a state park. By the end of 1927, park facilities included a nine-hole golf course and an elaborate concrete stage which had been constructed in a natural amphitheater.

The park was developed by the US Department of Interior under the State Park Emergency Conservation Work Program during the 1930s. A 240-man unit of the Civilian Conservation Corps (CCC) developed the park under the supervision of the National Park Service. The CCC camp was located in the area now used as the rustic campground. The CCC, followed by the Veteran’s Conservation Corps, constructed many of the park buildings and assisted with road building, trail construction, tree planting, sodding, and major erosion control projects.



Memorial and commissary at Fort Ridgely State Park.



Fort Ridgely, is the only state park in Minnesota where visitors can golf.



A memorial stands for those who fought to protect the fort during US-Dakota War on August 18, 1862. The commissary, in the background, was reconstructed by the Veteran Conservation Corps who also excavated the foundations of eight other fort buildings.

The old fort site is now managed by the Nicollet County Historical Society, and is open regular hours during the summer months. The Interpretive Center at the fort site contains exhibits and information about garrison life and the people and events surrounding Fort Ridgely during the 1850s and 60s.

Fort Ridgely State Park will serve as a trailhead. Possible locations within the park could be the chalet or picnic areas. The chalet would provide trail users parking, refreshments, and restrooms. This location would be closer to the potential trail alignment and minimize disturbances from trail construction. The picnic area offers an excellent viewshed but would require a lengthier trail connection.

FORT RIDGELY STATE PARK

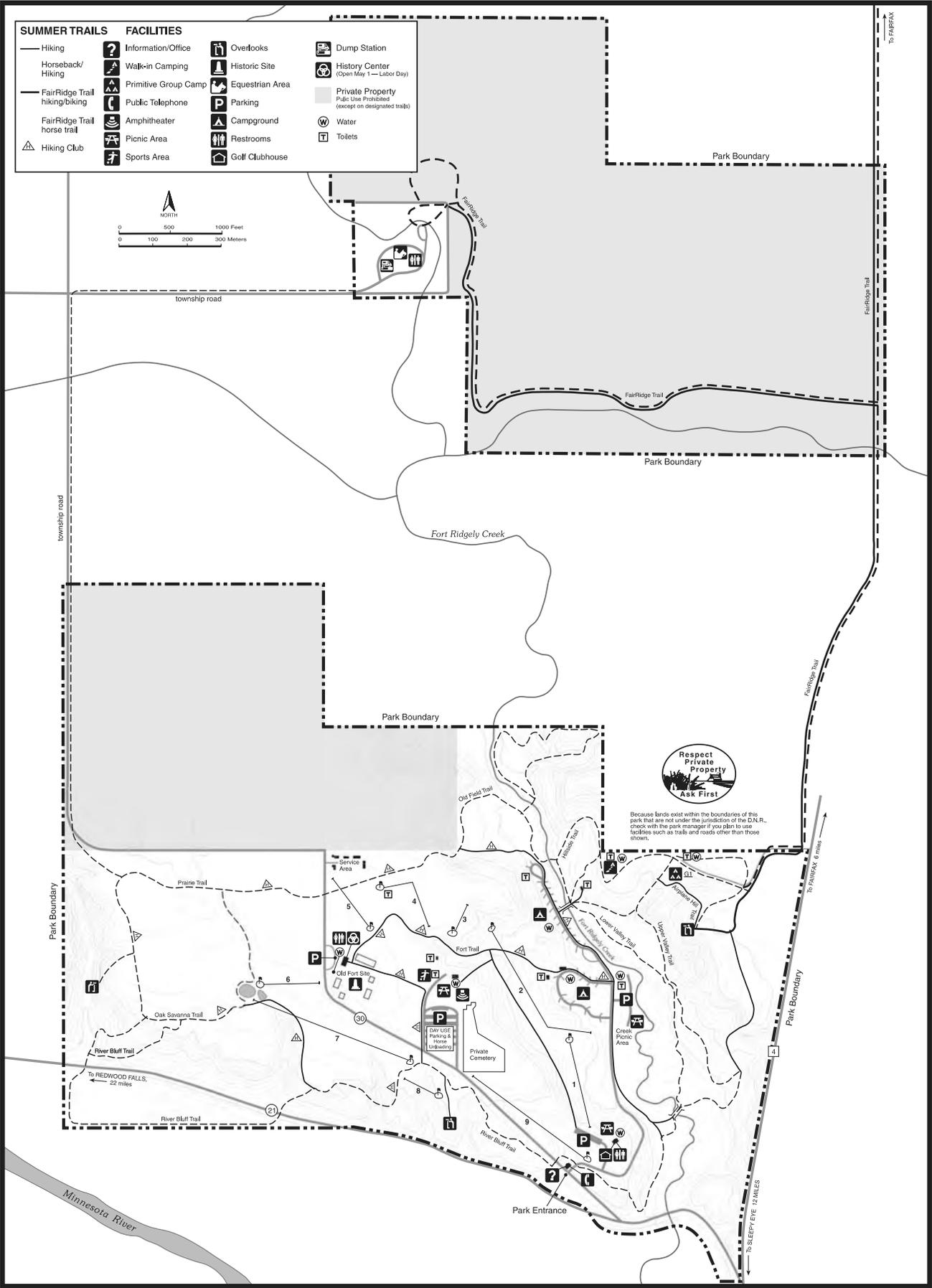
SUMMER FACILITIES AND FEATURES

- 22 semi-modern campsites (15 with electricity) with showers and flush toilets
- 9 rustic campsites
- 8 miles of hiking trail
- 12 miles of horseback trail
- 7.3 mile bike trail connecting Fairfax to Fort Ridgely
- 3 walk-in campsites
- 25-unt horse campground
- Primitive group camp
- 2 picnic grounds
- Nine-hole golf course
- Historic Fort Ridgely

HELP US PROTECT MINNESOTA'S PAST:
Please leave artifacts where you find them. Report findings to park staff.

LOOKING FOR MORE INFORMATION?
The DNR has mapped the state showing federal, state and county lands with their recreational use. Public Recreation Information Maps (PRIM) are available for purchase from the DNR's gift shop. DNR's website also has information on park trails, sports, and maps.

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Segment 2: Fort Ridgely State Park to New Ulm

This segment begins at Fort Ridgely State Park and extends southeast for about 18 miles to the city of New Ulm. Highlights of this segment include the Harkin Store and several Wildlife Management Areas (WMAs) in the flood plain. Many areas of cultural and historical significance are located in New Ulm along with parks and trails that would make this city a destination for trail users.

Criteria for this segment include:

- Connect Fort Ridgely State Park to the city of New Ulm.
- Provide connections to New Ulm parks and trails.
- Take advantage of the Minnesota River Valley Scenic Byway alignment as an identified scenic route with unique design standards.

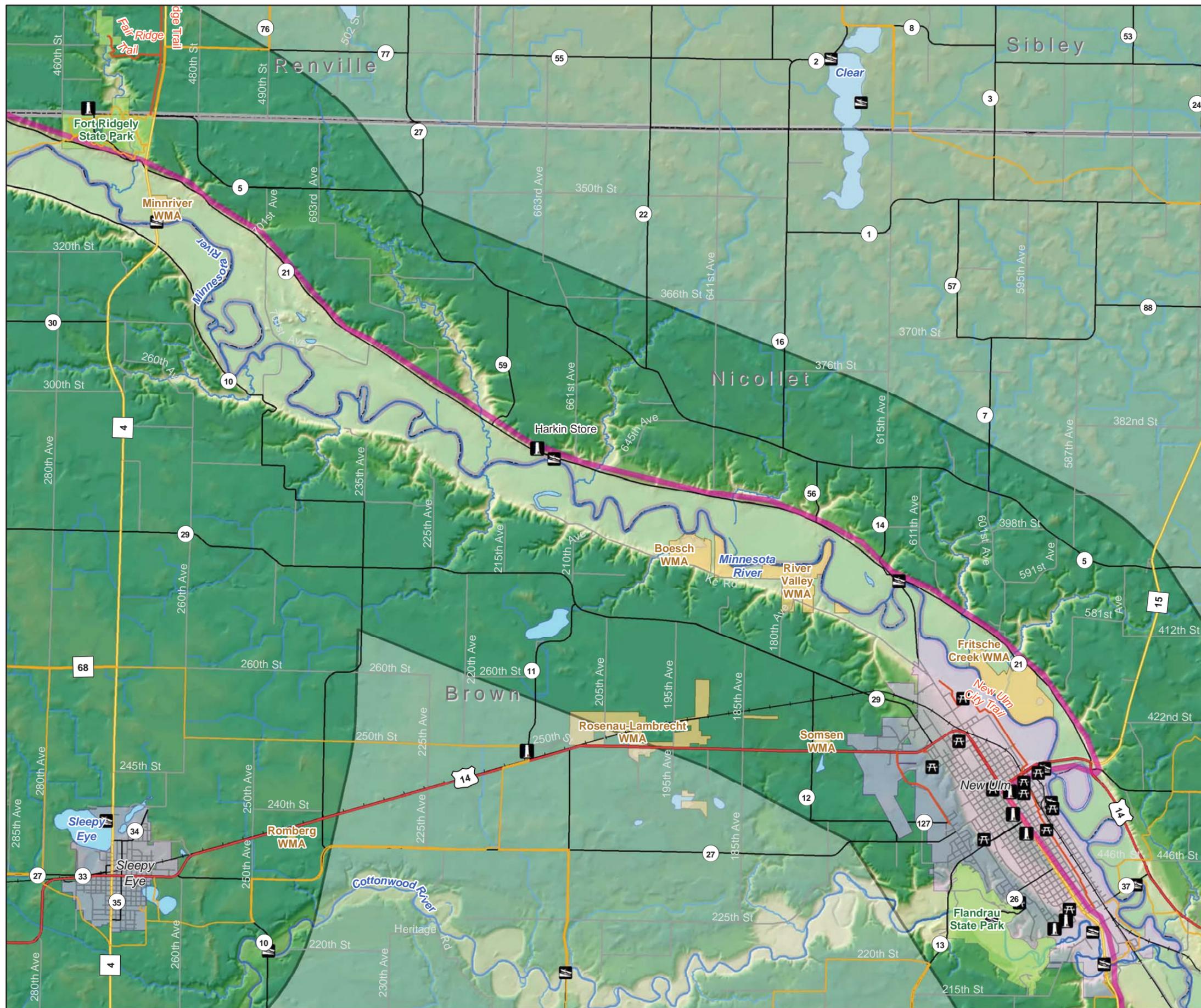
The first potential alignment follows Nicollet County Highway 21, the Minnesota River Valley Scenic Byway. This route follows the edge of the river valley through this entire segment and crosses to the south side of the valley at Brown County Highway 13, over the Buessman Bridge. This is already a scenic road with low traffic volumes and is considered desirable for biking. After crossing the river, the trail would follow the New Ulm city trail. Alternatively, the trail could follow Highway 21 to the interchange of US Highway 14 and State Highway 15, where a spur trail could connect to New Ulm.

On the south side of the river, one option might be a potential connection between Brown County Highway 10, 210th Avenue, and KC Road. The KC Road follows the foot of the bluff and links to New Ulm's city trail.

A third option would follow Brown County Highways 10 and 29. This route would be less desirable due to the distance from the river valley, higher traffic volumes, and a higher concentration of agricultural land uses.

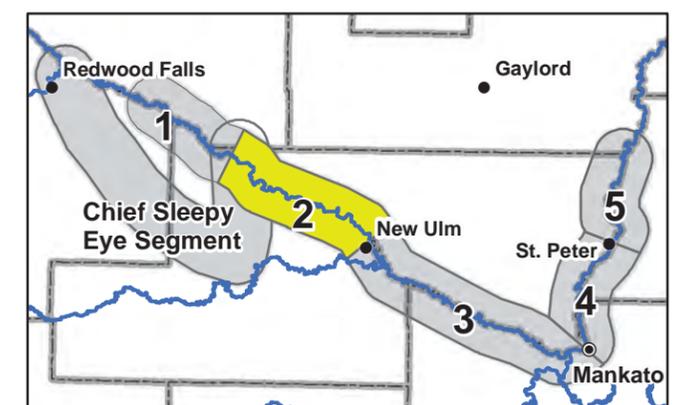
Minnesota River State Trail

Figure 7: Segment 2 - Fort Ridgely to New Ulm



Legend

- U.S. Trunk Highway
- MN Trunk Highway
- County Highway
- Local Roads
- Railroad
- Minnesota River Valley Scenic Byway
- City and Regional Trails
- Minnesota Snowmobile Trail
- State Park
- Wildlife Management Area
- City Boundaries
- Historic Site
- City Park
- Public Water Access Sites



Segment 2 Trail Communities and Connections

City of New Ulm

New Ulm, known for its German heritage, is located at the confluence of the Minnesota and Cottonwood rivers and is the county seat of Brown County. US Highway 14 and State Highways 15 and 68 are the major routes in town.

The idea for New Ulm as a settlement for German immigrants was developed in Germany. The Chicago Land Society sent settlers out to find land for a new city. They founded the site of present-day New Ulm in 1854 and the city was incorporated in 1857. The name, New Ulm, was selected because many of the original settlers were from the Province of Wurttemberg, Germany, of which Ulm is the principal city. Milling and brewing were the major industries in early New Ulm. The first local beer was brewed in March of 1858 and August Schell opened a brewery in 1860. Early on, the river was the primary form of transportation to New Ulm. In 1872, a railroad link was completed by the Winona & Saint Peter Company Railroad connecting New Ulm to the rest of early Minnesota. The German heritage of New Ulm is evident in the architecture, and especially in the neatness and care visible in the trim yards and well-kept houses and store fronts.

New Ulm is a city with agriculture, industries, retail stores, progressive parochial and public schools, a private college, and a population at the 2010 Census of 13,522, down from 13,594 at the 2000 Census. The central business district on Minnesota Street offers a variety of retail and dining options. The Minnesota Music Hall of Fame, Brown County Historical Society, 45 foot tall Glockenspiel, carillon clock tower, 102 foot tall Hermann Monument, and other monuments are points of interest for trail users.

The city of New Ulm operates an extensive parks system offering many services to the community. There are over 40 parks in New Ulm ranging from natural areas, to small neighborhood parks, to large athletic complexes that host sports leagues and tournaments. The city also maintains an off-road multi-use trail that traverses the center of New Ulm from 20th South Street to North Broadway and the KC road. Several parks including Minnecon, Riverside, and German could serve as potential trailheads for a state trail.

Should the trail enter New Ulm on the south side of the river, the trail route will connect to and mostly follow the New Ulm city trail. The trail will go under the Highway 14 bridge and into Minnecon Park. An old road grade runs north adjacent to Highway 14. This grade could be utilized for the trail but would require construction of a bridge over the river.

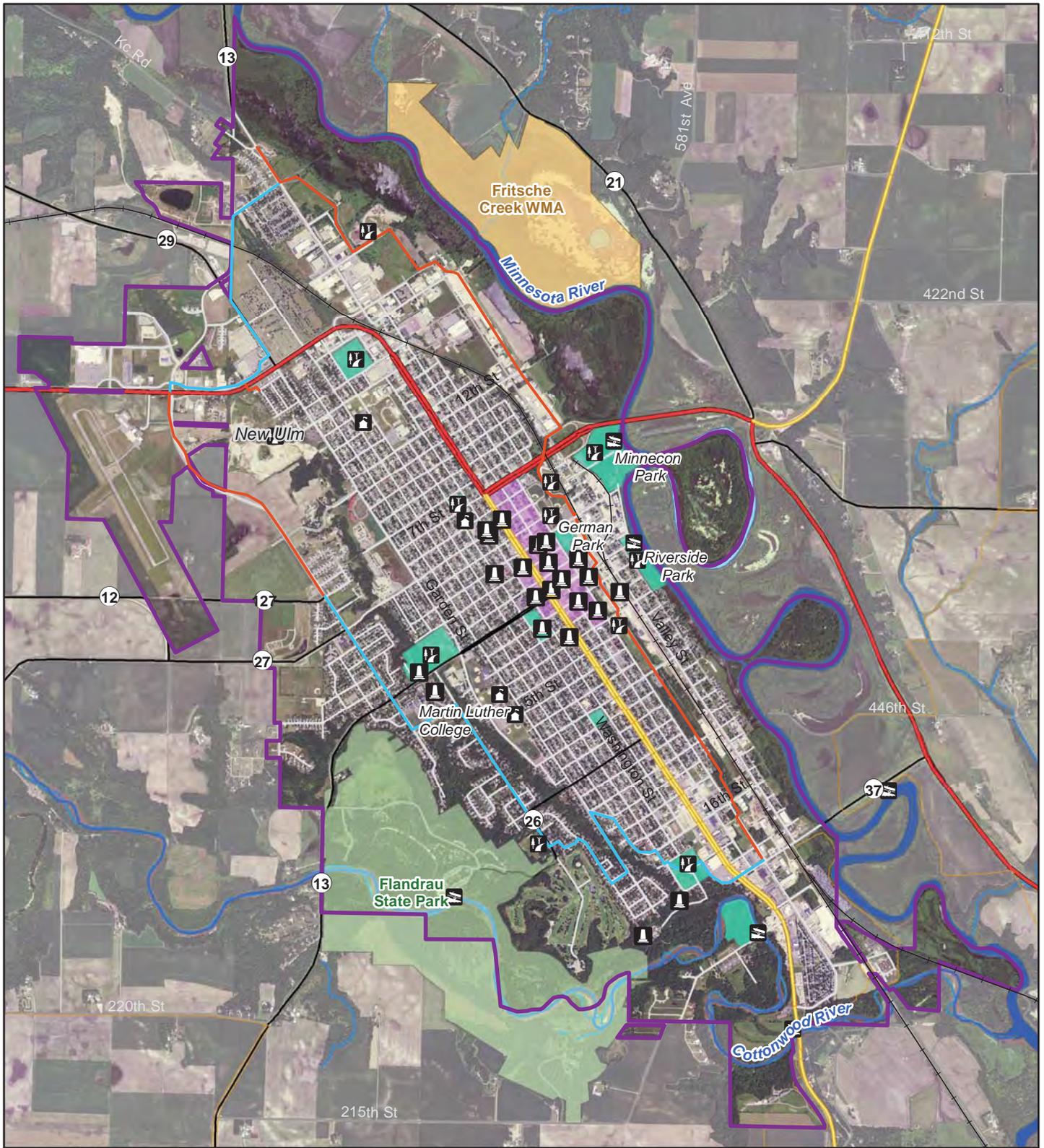


Figure 8: City of New Ulm

0 0.25 0.5 1 Miles



MN Department of Natural Resources
Division of Parks and Trails

September 2015

Legend

-  U.S. Trunk Highway
-  MN Trunk Highway
-  County Highway
-  Township Road
-  Municipal Road
-  Railroad
-  Regional Trail
-  On Street Bike Route
-  Snowmobile Trails
-  City Park Boundaries
-  Downtown
-  City Boundaries
-  Park
-  Historic Site
-  School
-  Water Access Site

If the trail enters New Ulm from the north side of the river, this same corridor could be used to link New Ulm to the trail. The trail could follow the city trail system through New Ulm to Highway 68.

The Harkin Store

This historical site managed by the Nicollet County Historical Society is located at roughly the midway point of this segment on County Highway 21. As described on the Minnesota Historical Society’s website:

In the 1870s, the Harkin Store had a big role to fill. The rural general store in the Minnesota River Valley was both the economic and social center of the growing community of West Newton. Steamboat trade made the town's future seem bright, but then - as with so many other rural towns - the railroad passed it by.

The store's original owners, Alexander and Janet Harkin, who were born in Scotland, arrived in the Minnesota Territory in 1856 to farm. After several difficult years, the Harkins and their farm began to prosper and Alexander was appointed or elected to a variety of positions including coroner, school board treasurer, justice of the peace and postmaster. In 1867, he opened a combination general store and post office.

Their fortunes changed soon after, however, when in 1873 the railroad bypassed the community and locusts descended on southern Minnesota - and stayed for four years. West Newton and the Harkin Store declined for the next few decades. The store eventually closed in 1901 as river and road traffic dwindled and the post office was replaced by free rural delivery. Its doors were locked and the store and its merchandise remained untouched until the site reopened as a museum in 1938.

The store is open five days a week in the summer season and on weekends in May and September.

Flandrau State Park

The Cottonwood River valley, in which Flandrau State Park lies, was formed as glacial melt water eroded 150 feet of glacial till. Below this layer of rock, sand, clay, and gravel is sandstone that was laid down millions of years ago. Near the park’s eastern boundary, orange colored iron-oxide bands and fossilized plant material can be seen in the exposed sandstone.

The Cottonwood River, a scenic prairie river, flows easterly through Flandrau State Park. Within the park, oxbow marshes trace the river’s past meanderings through floodplain forest and grassy expanses. Confining the river and forming the park’s boundaries are steep slopes covered with cool, moist forests and oak shaded bluffs dotted with dry prairie knolls.



Sign at Harkin Store depicts village at its peak.



The Cottonwood River meanders through Flandrau State Park.

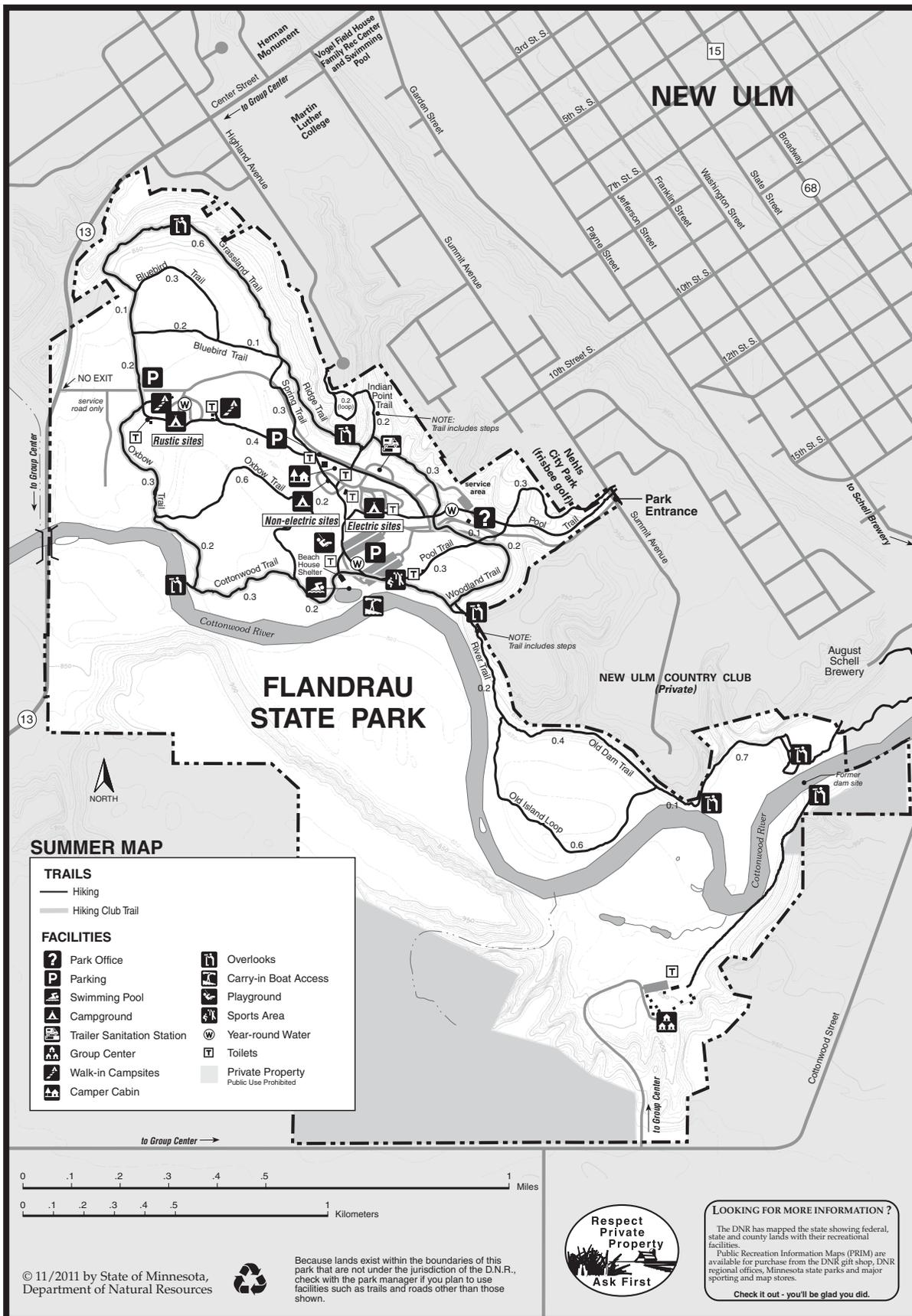
Originally named Cottonwood River State Park, Flandrau served as a Works Projects Administration camp in the late 1930s and early 1940s. In the 1940s the camp was used as a World War II German prisoner-of-war camp. Today, this camp is used as the park's modern group center consisting of 8 cabins, a dining hall, and restroom buildings. The Civilian Conservation Corps built a dam on the Cottonwood River during the same time period creating a 200 acre reservoir. The dam was damaged by several high water events and was eventually removed in 1995. The park was renamed in 1945 to honor Charles E. Flandrau, who served on the Minnesota Supreme Court and helped draft the first Minnesota constitution. He played a prominent local role in New Ulm during the US-Dakota War of 1862.

Park amenities include a variety of camping and lodging facilities, day-use areas, 8 miles of multi-use trails, and a sand bottom swimming pool. A trail connection to Flandrau State Park would likely have to be through a local or regional trail. Several on-road or sidewalk routes could be used to make this connection.

FLANDRAU STATE PARK

FACILITIES AND FEATURES

- 34 electric semi-modern campsites
 - 2 Camper Cabins
 - 18 non-electric semi-modern campsites
 - 33 rustic drive-in campsites
 - 3 rustic walk-in sites
 - Dumping station, showers, and flush toilets
 - Camping reservations accepted: 1-866-857-2757
 - Volleyball
 - Horseshoes
 - Log play structure
 - Modern group center (110 lodging capacity)
 - 60 picnic sites with an enclosed beach house shelter
 - Swimming pool with sand bottom
 - 8 miles of hiking trails
 - 6 miles of ski trails
 - 2 miles of groomed snoeshoe trails
- ## POINTS OF INTEREST
- Trail overlooks: Indian Point, Grassland, Cottonwood and River Loop
 - Swimming pool and beach house
 - Historic WPA-era buildings
 - Group center



SUMMER MAP

TRAILS			
	Hiking		
	Hiking Club Trail		
FACILITIES			
	Park Office		Overlooks
	Parking		Carry-in Boat Access
	Swimming Pool		Playground
	Campground		Sports Area
	Trailer Sanitation Station		Year-round Water
	Group Center		Toilets
	Walk-in Campsites		Private Property Public Use Prohibited
	Camper Cabin		



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Because lands exist within the boundaries of this park that are not under the jurisdiction of the D.N.R., check with the park manager if you plan to use facilities such as trails and roads other than those shown.



LOOKING FOR MORE INFORMATION ?

The DNR has mapped the state showing federal, state and county lands with their recreational facilities.

Public Recreation Information Maps (PRIM) are available for purchase from the DNR gift shop, DNR regional offices, Minnesota state parks and major sporting and map stores.

Check it out - you'll be glad you did.

Segment 3: New Ulm to Mankato

This segment continues from the city of New Ulm and extends to the city of Mankato traversing through the city of Courtland. This segment is the longest segment of the plan at approximately 30 miles in length. Connections to the Blue Earth County trail system will be a featured part of this segment. This segment is bookended with Flandrau and Minneopa state parks in New Ulm and Mankato, respectively. In addition to providing areas of interest to trail users, the Mankato-North Mankato Metropolitan Statistical Area has significant population that will drive local trail use.

Criteria for this segment include:

- Provide connections to Blue Earth County trail system and Mankato area parks.
- Connect Flandrau State Park to Minneopa State Park.
- Take advantage of the Minnesota River Valley Scenic Byway alignment as an identified scenic route with unique design standards.

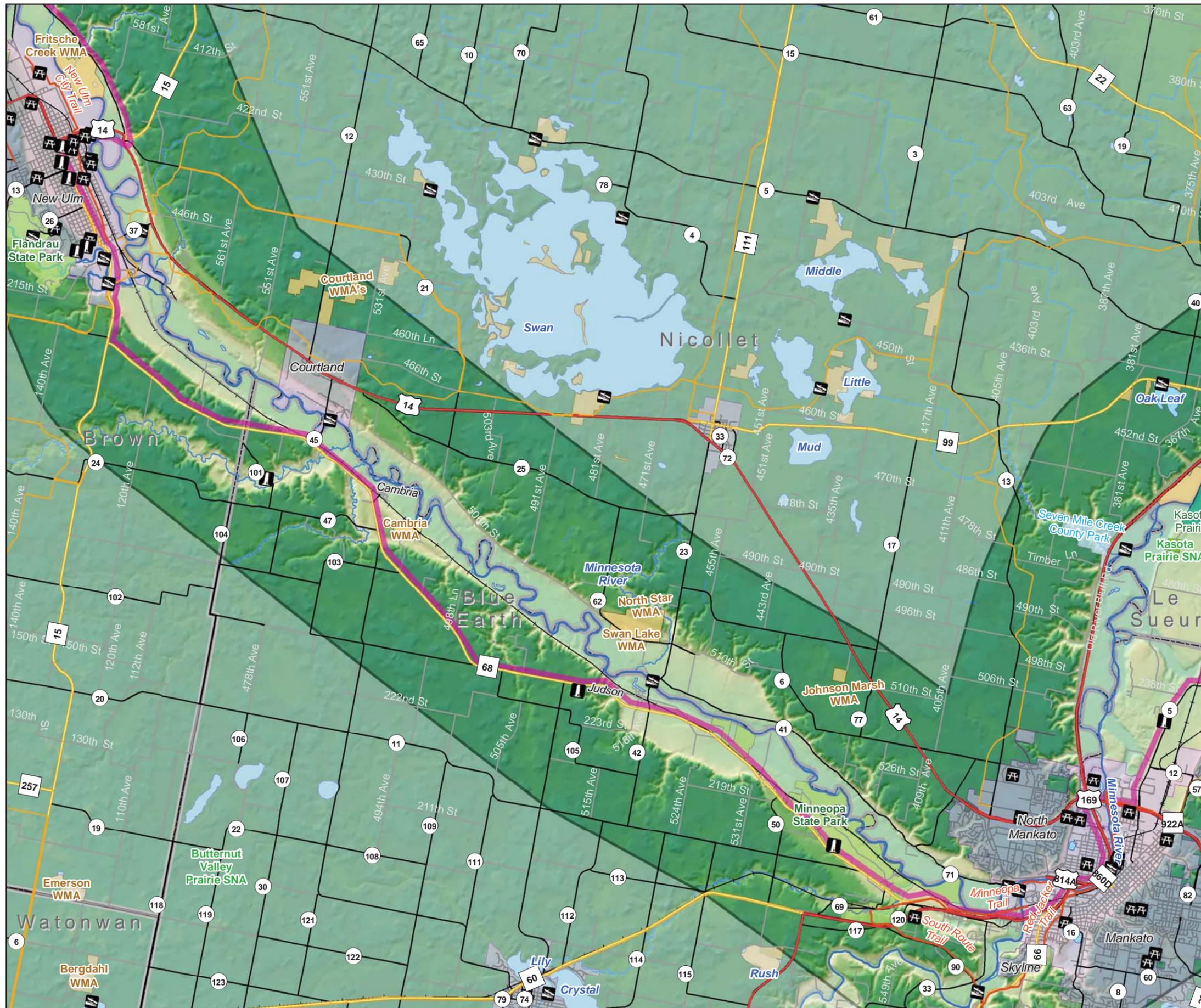
State Highway 14 is currently undergoing redesign from New Ulm to Courtland. The trail could be incorporated into this project. The potential trail route would follow 506th Street from Courtland to Nicollet County Highway 23, where it would cross into Judson on Blue Earth County Highway 42. This bridge currently has a bike and walkway physically separated from vehicular traffic. This route would then follow Blue Earth County Highway 68, travel through Minneopa State Park and into Mankato on city and county trails.

Alternatively, the trail could exit New Ulm on the south side of the river and follow Highway 68 all the way to Mankato. This option would feature a closer connection to Flandrau State Park, and directly link it to Minneopa State Park and Mankato.

Cyclists can ride from Judson to North Mankato on the Judson Bottom Road, which has widened shoulders from Nicollet County Highway 23 to Highway 71.

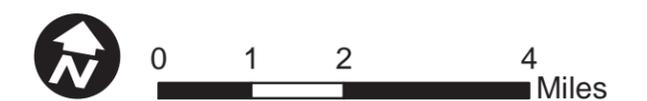
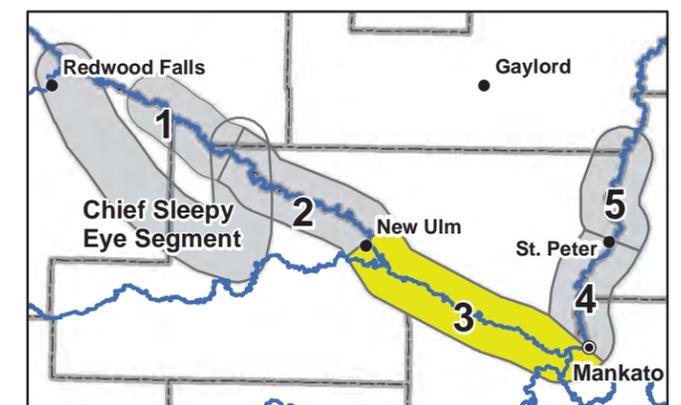
Minnesota River State Trail

Figure 10: Segment 3 - New Ulm to Mankato



Legend

- U.S. Trunk Highway
- MN Trunk Highway
- County Highway
- Local Roads
- Railroad
- Minnesota River Valley Scenic Byway
- Sakatah Singing Hills State Trail
- City and Regional Trails
- Minnesota Snowmobile Trail
- State Park
- Scientific and Natural Area
- Wildlife Management Area
- County Park
- Kasota Prairie
- City Boundaries
- Historic Site
- City Park
- Public Water Access Sites



Segment 3 Trail Communities and Connections

City of Courtland

The city of Courtland is located between the cities of New Ulm and Nicollet. Just about 20 miles from Mankato, Courtland is in Nicollet County and contains small city charm in the middle of bigger cities.

Courtland was not incorporated until 1892. Before this time it was in control by the Township Board. The city was first called Hilo, but changed to Courtland after a town in New York, had the spelling of "Cortland".

The first building erected was a warehouse, in 1872. In 1873, C. Bobsin opened a general store. In 1882, there were 3 general stores, 2 blacksmith and wagon shops, a harness shop, a shoe shop, hotel and saloon, about 8 dwellings, a depot, and an elevator.

Courtland station was on the line of the Winona and Saint Peter railroad, on section 8. At one time there were 4 passenger trains that went through town and 4 freight trains. The train tracks were taken out in 1973.

The population of Courtland according to the 2010 census is 611 people. The city contains several businesses that provide many services to the surrounding people and communities. Courtland is home to a saw mill. Minnesota Valley Forest Products deals in hardwood lumber. Two major industries in the city of Courtland include: Hancock Concrete and G and S Manufacturing, which was formerly located in New Ulm.

The trail corridor to Courtland from the west will be located between US Highway 14 and the river. The city of Courtland has proposed the acquisition and development of a park system and trail corridor that will serve residents and trail users. The Minnesota River State Trail could follow this alignment through the city of Courtland. There is space along this route to develop a trailhead that could serve city and state trail users.

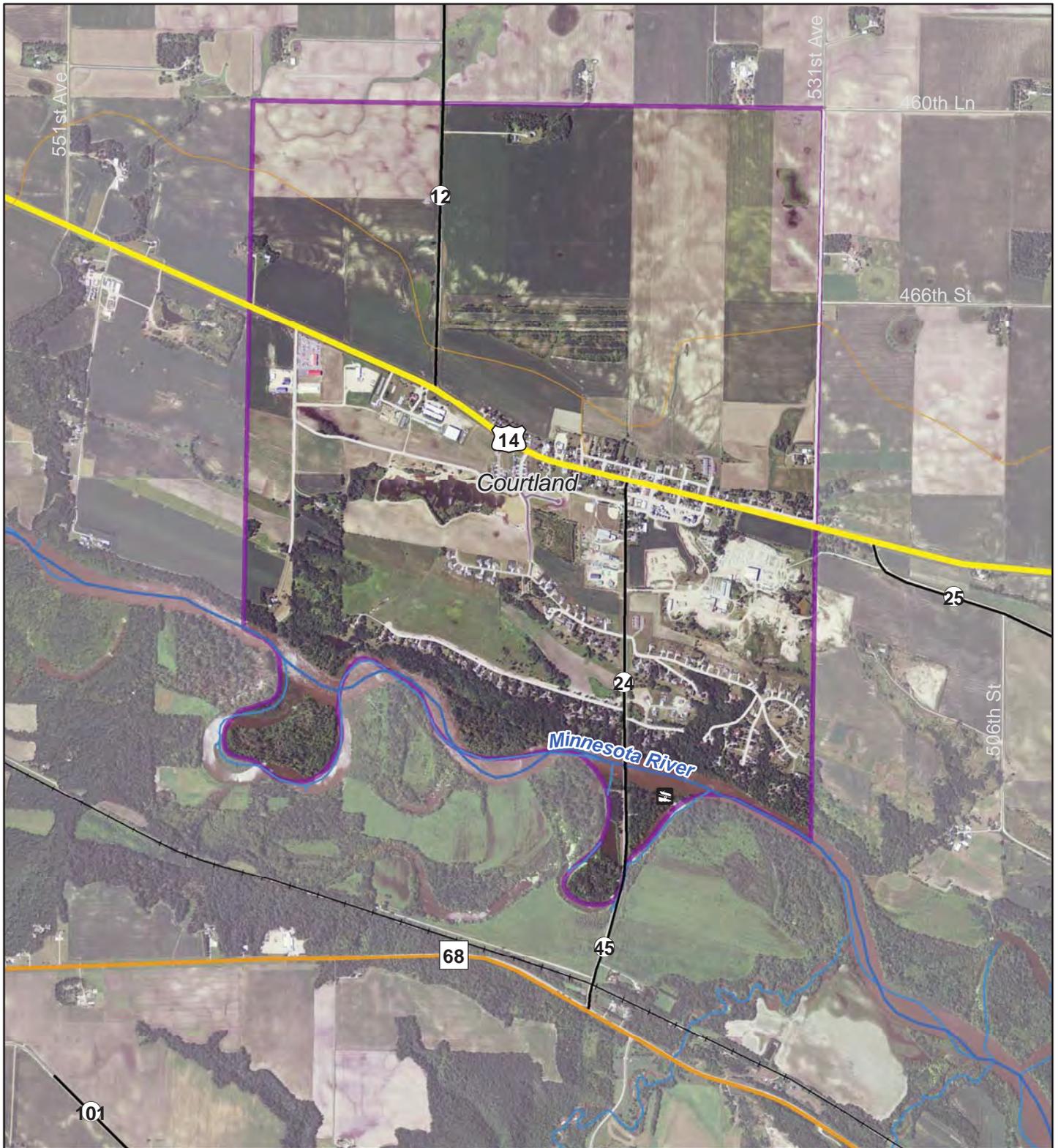
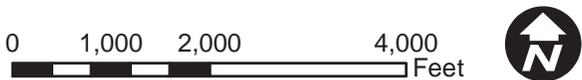


Figure 11: City of Courtland



Legend

-  US Trunk Highway
-  MN Trunk Highway
-  County Highway
-  Municipal Road
-  Township Road
-  Railroads
-  Snowmobile Trail
-  City Boundaries
-  City Park
-  School
-  Water Access Site

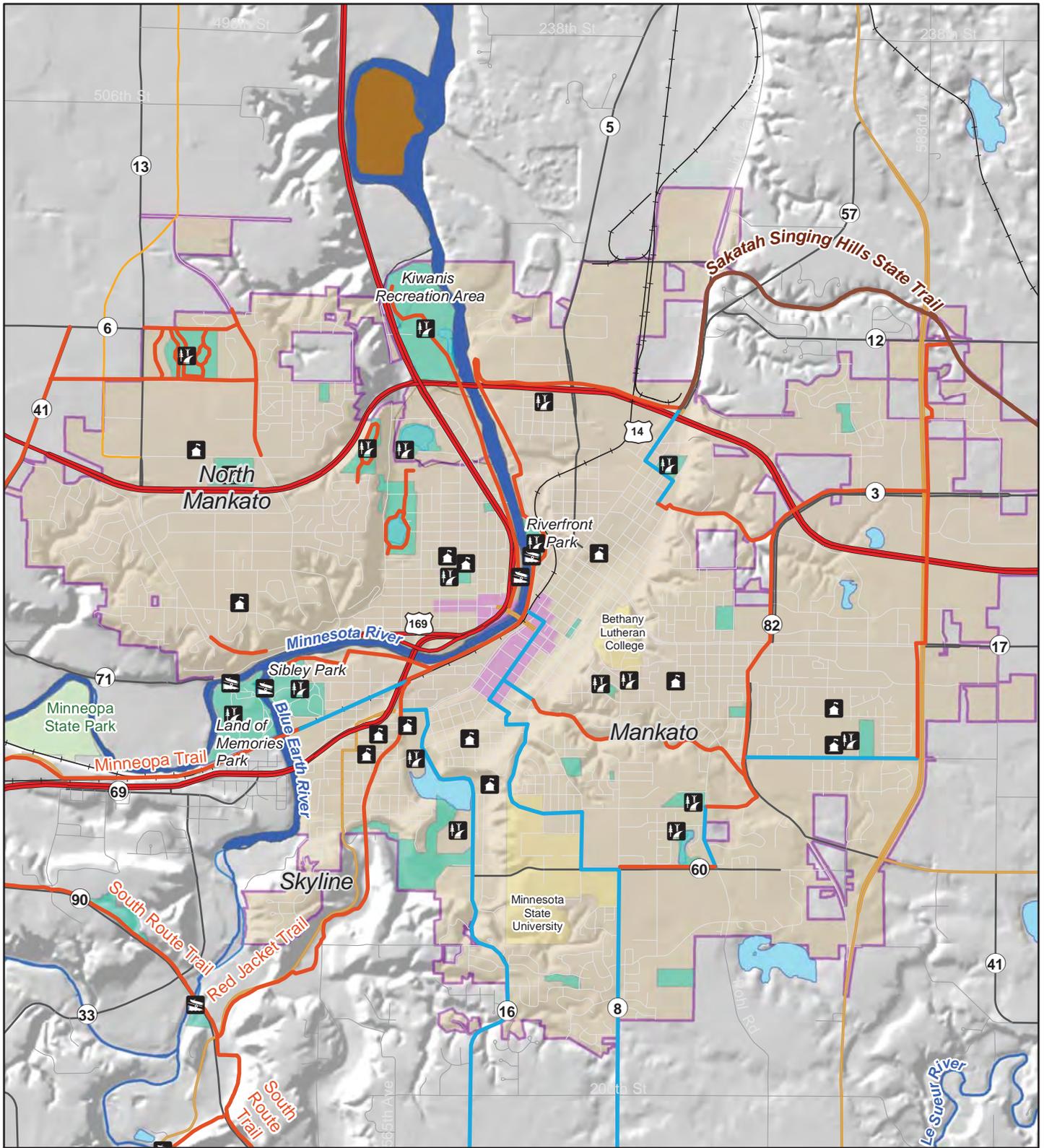


Figure 12: City of Mankato

0 0.5 1 2 Miles



Legend

- U.S. Trunk Highway
- MN Trunk Highway
- Township Road
- County Highway
- Municipal Road
- Railroad
- Minnesota State Trail
- Regional or City Trail
- On Street Bike Route
- Snowmobile Trail
- City Boundaries
- Minneopa State Park
- City Park Boundaries
- Central Business District
- City & County Park
- Historic Site
- School
- Water Access Site



MN Department of Natural Resources
Division of Parks and Trails

September 2015

City of Mankato

Mankato is located at the confluence of the Blue Earth and Minnesota Rivers 75 miles southwest of the Twin Cities. The city is the county seat of Blue Earth County. US Highways 14 and 169 and State Highways 22 and 60 are major routes in the city.

The area was first inhabited by the Dakota who called it Mahkato, meaning greenish blue earth. What is now Sibley Park was an important area for powwows and major tribal gatherings.

The first Europeans came to the area in the 1700s. The area was settled in 1852 by Parsons K. Johnson and Henry Jackson and received its charter in 1868. New settlers arrived by steamboat on the Minnesota River, but this was an unreliable mode of transportation in low-water years. A crude military road was built from Saint Peter to Mankato in 1852 allowing for stagecoach travel. In 1868, a railroad was built in Mankato, making it a railroad hub for southern Minnesota. The railroads allowed the agriculture industry to thrive and many mills were built. Quarries for “Mankato stone” were also prevalent.

According to the 2010 Census, Mankato’s population is 39,305, up from 32,427 at the 2000 Census. The population has been rising steadily since the 1980s.

Mankato is the primary retail center for the south-central Minnesota region. Most of the commercial development has been along the major road corridors in the city. Manufacturing in Mankato has focused on agriculture and mining, but telecommunications, mechanical, and distribution are also important industries. Major employers in Mankato include health care, education, government, and manufacturing.

The city offers many opportunities for fine arts including community theaters, symphonies and the Mankato Ballet among others. Minnesota State University and Bethany Lutheran College offer additional opportunities for fine arts, sports and other events.

Mankato is home to 45 park areas and numerous miles of trails. The park facilities range from neighborhood mini-parks to community sports complexes and also include trail corridors and undeveloped natural areas. The park facilities include picnic areas, playgrounds, ball fields, fishing areas, swimming areas and historic sites. Riverfront, Sibley, and Land of Memories parks could be trailheads and each offers a variety of services to trail users.

The city of Mankato maintains many miles of trails, both off-road and on-road. These trails provide connections between developed and natural areas of the city and the region. Some of the city’s trails include the Minnesota River Trail, the Red Jacket Trail, and the South Route Trail. The DNR maintains the Sakatah

Singing Hills State Trail, which enters Mankato on the northeast end of town and connects to the city's trail system.

The trail alignment will follow existing county and city trails through Mankato. From Minneopa State Park, the trail will follow the path of the Minneopa Trail to Land of Memories Park and Sibley Park. Construction of a bridge over the Blue Earth River will be necessary to connect these two parks. From Sibley Park, the trail will follow the path of the Sibley Parkway Trail and Minnesota River Trail. The Minnesota River Trail is located between the river and river wall, as it passes by downtown Mankato. This trail passes through Riverfront Park, goes underneath the US Highway 14 Bridge, turns east and connects to the Sakatah Singing Hills State Trail.

City of North Mankato

The city of North Mankato is located across the Minnesota River from Mankato in Nicollet County. US Highway 169 travels through the city along the Minnesota River and US Highway 14 crosses east to west.

Even though the city was platted in 1857 by Issac Marks, Asa White, and Joseph Guenther, North Mankato was not incorporated until 1897. Originally, North Mankato was little more than two ferry boat landings connected by a river road. The city has experienced steady population growth since it was incorporated. As of the 2010 census, North Mankato has a population of 13,394.

The city is part of the Mankato-North Mankato Metropolitan Statistical Area which is a regional center of health care, shopping, education, sports, and recreation. The city's central business district is located on Belgrade Avenue across Veterans Memorial Bridge from downtown Mankato. North Mankato has seen an increase in its residential, commercial, and industrial sectors as a result of being awarded its own Port Authority in 1985.

Sixteen parks are located in North Mankato ranging from neighborhood parks to natural areas to large athletic complexes. Caswell Park is one of the premiere softball complexes in the nation and has hosted numerous state, regional, and national tournaments since opening in 1987. Spring Lake Park, at 52 acres, features a unique sand bottom swimming facility among other recreational activities. Riverview Park, between US Highway 169 and the Minnesota River, provides access to the river and could be a potential trailhead. The Rex MacBeth River Trail also travels through Riverview Park from the Veterans Memorial Bridge to Kiwanis Recreation Area.

A possible trail corridor could be developed through North Mankato along the Rex MacBeth River Trail. This option would be most feasible if an alignment is developed along Highway 169 from Mankato to Saint Peter. The trail, or a connection to the trail, could be made across Veterans Memorial Bridge.

Connections to other parks and trails in the city could be made through local trails or on-road routes.

Minneopa State Park

In 1905 the State of Minnesota passed legislation establishing Minneopa State Park setting aside land around Minneopa Creek and the falls for public use. This made Minneopa the third state park in Minnesota. The park became a popular destination due to the scenic value of the Minneopa Falls. Thousands of visitors arrived by rail to the depot in the townsite of Minneopa while others made their way by steamboat.

The Seppmann windmill, in the northwest corner of the park, was donated by Albert Seppmann, son of its builder. It was designed by Louis Seppmann after windmills in his native Germany. One of the only wind-powered mills in Minnesota, it served the area until 1880 when two of the arms were broken by high winds. The main structure, made of stone, is still intact today.

The park holds two outstanding geologic features – the double waterfalls and the giant boulders on the park’s grassland. The word Minneopa means “water falling twice” in the Dakota language. In all, the water drops 45 feet making it the largest waterfall in southern Minnesota. Large boulders in the park’s prairie are referred to as glacial erratics. These erratics were transported over a hundred miles from their bedrock source and deposited here by glaciers over 15,000 years ago.



The remaining structure of the Seppmann windmill stands in the southwestern portion of Minneopa State Park.



Minneopa Falls was a primary tourist attraction in the early 1900s.

Minneopa’s diverse habitats support a myriad of wildlife that can be observed throughout the year. The southern portion of the park, around Minneopa Creek

and the falls, is hilly and wooded. Northern sections of the park feature the Minnesota River flood plain and restored prairies on the uplands. Turtles, beaver, and waterfowl are found near the flood plain while the southern portion is home to woodland animals including pileated woodpeckers.

The trail should parallel State Highway 68 along the length of the park. The trail will cross Minneopa Creek and join the Blue Earth County Minneopa Trail, where it terminates near the falls.

A connection across Highway 68 should be explored to link the main body of the park to the falls area. This connection could also serve to link the Minnesota River State Trail and Minneopa Trail to other Blue Earth County trails, including the South Route Trail and Red Jacket Trail.

Wildlife Management Areas

Trail users interested in wildlife viewing could find opportunities at one of several WMAs in this segment. Cambria WMA, located on the bluff south of the Minnesota River, provides both prairie and hardwood forest habitats. Wildlife viewing options include wetland, prairie, and forest wildlife. North of the river, Courtland, North Star, and Johnson Marsh WMAs could serve as stopping points for trail users. Snakes, butterflies, and bluebirds are abundant at North Star, which is located along Nicollet County 41 on river bluffs.

MINNEOPA STATE PARK

FACILITIES AND FEATURES:

- Two picnic areas
- Picnic shelter w/ electricity
- Semi-modern campground
- Heated camper cabin with electricity
- Hiking/Ski trails
- Primitive group camp
- Historic site
- Native prairie
- Visitor center
- Geologic formations
- Cross-country ski trails
- Volleyball court
- Horseshoe pit
- RV dump station

VISITOR FAVORITES:

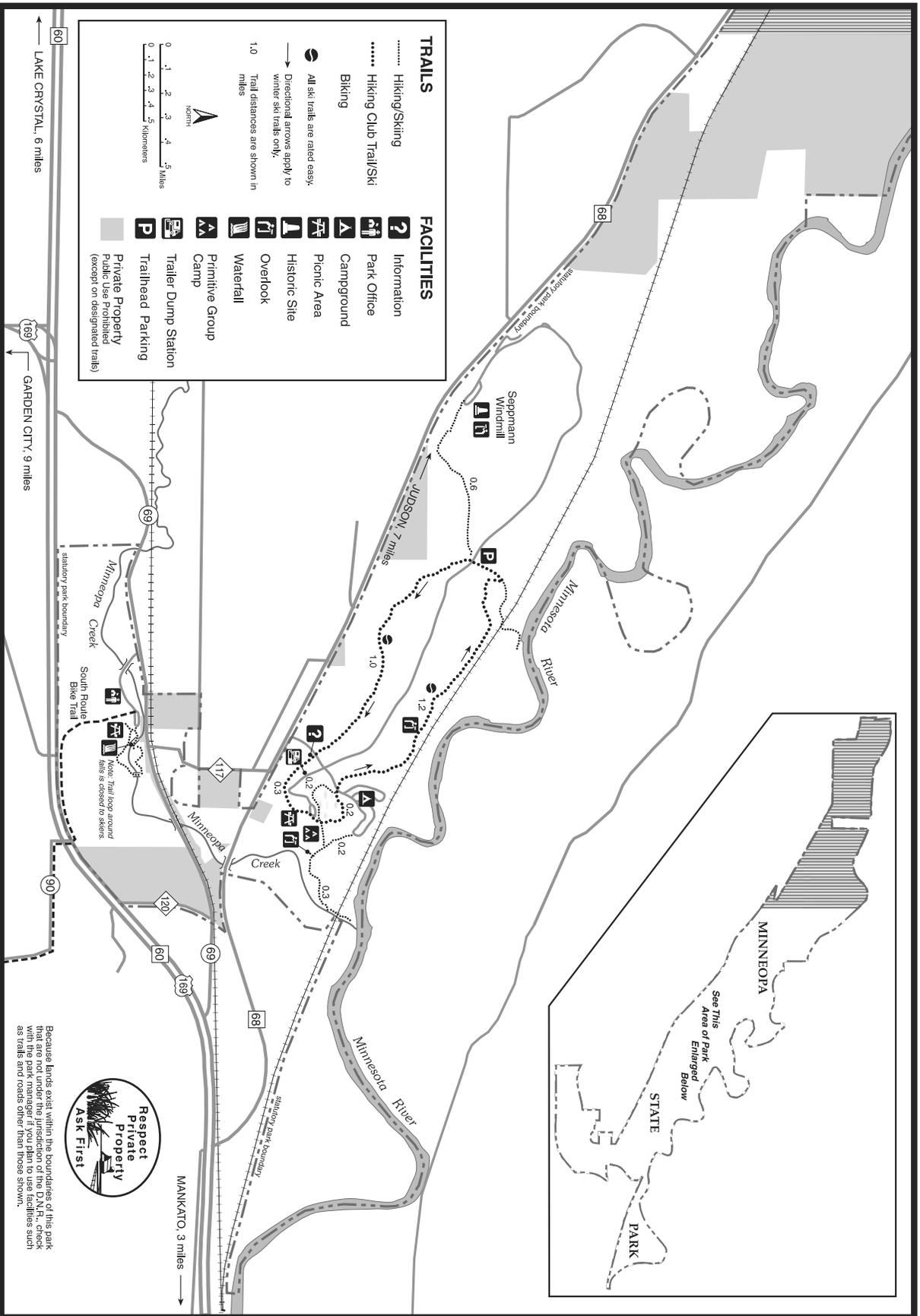
- Twin waterfall
- Seppann Windmill
- River fishing
- Wildlife viewing
- Hiking
- Photography

LOOKING FOR MORE INFORMATION?

The DNR has mapped the state showing federal, state, and county lands. Public Recreation Information Maps (PRIM) are available for purchase from the DNR gift shop, DNR sporting and map stores.

Check it out - you'll be glad you did.

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TRAILS	FACILITIES
..... Hiking/Skiing	? Information
..... Hiking Club Trail/Ski	PO Park Office
Biking	CA Campground
All ski trails are rated easy.	PA Picnic Area
Directional arrows apply to winter ski trails only.	HS Historic Site
Trail distances are shown in miles	OV Overlook
	WF Waterfall
	PG Primitive Group Camp
	TD Trailer Dump Station
	TP Trailhead Parking
	PP Private Property
	PU Public Use Prohibited
	(except on designated trails)



Because lands exist within the boundaries of this park that are not under the jurisdiction of the D.N.R., check with the park manager if you plan to use facilities such as trails and roads other than those shown.

Segment 4: Mankato to Saint Peter

This segment extends north from the city of Mankato 13 miles, to the cities of Kasota and Saint Peter. A significant portion of land in this segment is being utilized for mining. The Kasota stone found in this area is the same stone used to construct historic buildings in Ottawa Village and the Stone Arch Bridge in downtown Minneapolis. Several natural areas are present in this segment, including Seven Mile Creek County Park, which has extensive trail infrastructure in place.

Criteria for this segment include:

- Connect the cities of Mankato, Saint Peter, and Kasota to Seven Mile County Park.
- Connect to Sakatah Singing Hills State Trail.
- Take advantage of the Minnesota River Valley Scenic Byway alignment as an identified scenic route with unique design standards.

The preferred alternative for this segment will be on the east side of the river and west of State Highway 22. This segment could follow the Minnesota River Valley Scenic Byway, along Blue Earth County 5 and Le Sueur County 21 to Kasota. One of the principal property owners on the east side of the Minnesota River between Saint Peter and Mankato, Unimin Corporation, has stated its support for the trail proposal and has mentioned the potential for the company to permit a trail corridor on portions of its lands.

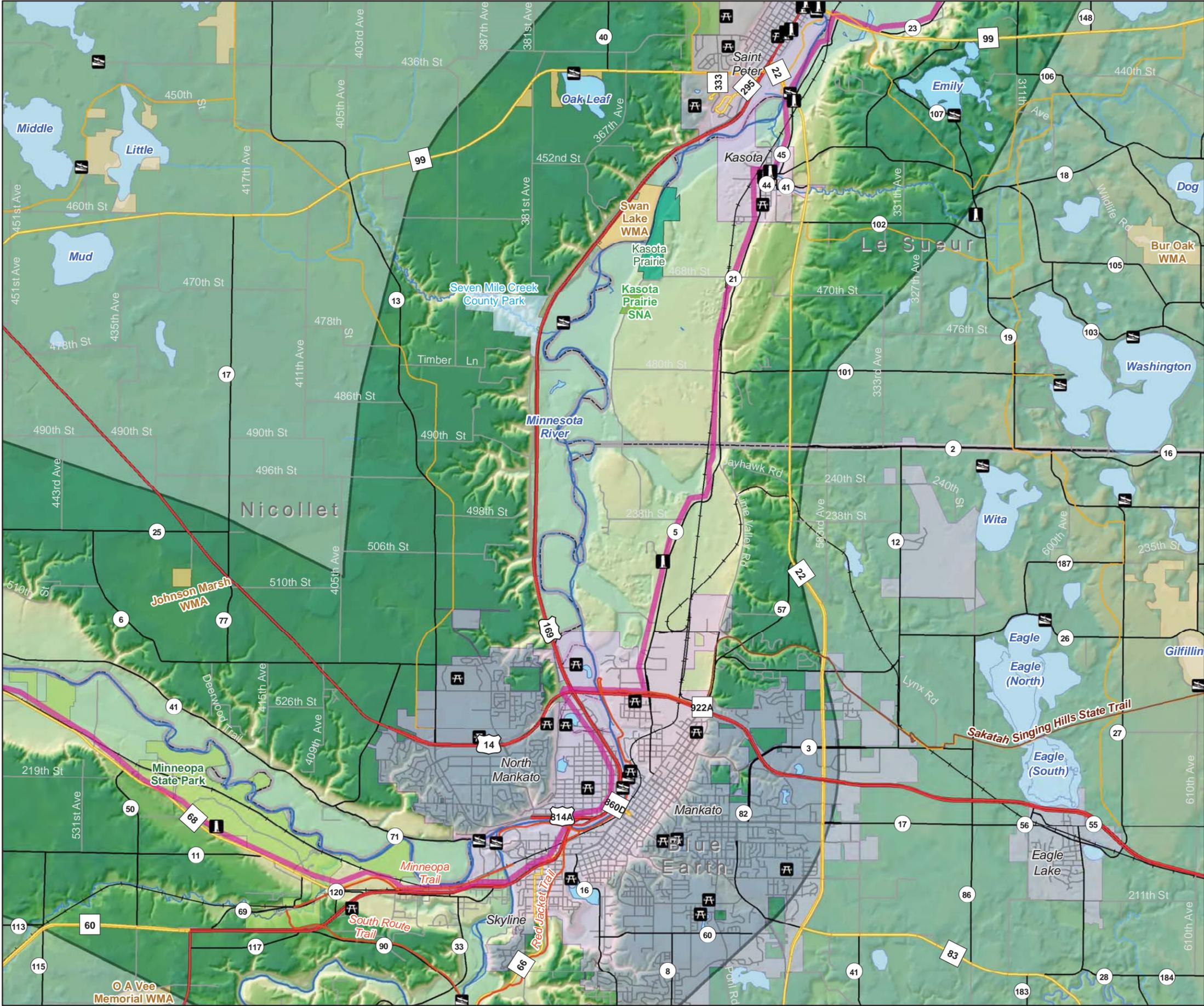
An alternative trail could be developed along the US Highway 169 corridor from the Kiwanis Recreation Area to Saint Peter. The trail could be routed across the Veterans Memorial Bridge in Mankato, then follow the Rex MacBeth River Trail through North Mankato to reach the Kiwanis Recreation Area. The benefit of this alternative is that the trail could link to the existing trail network, infrastructure, and the tunnel under Highway 169 at Seven Mile Creek County Park.

Another alternative is to develop a bridge across the Minnesota River north of Mankato. This would allow trail users to connect to Seven Mile Creek County Park.

Ultimately, dual treadways or separate trail corridors may be developed to accommodate all uses in this segment.

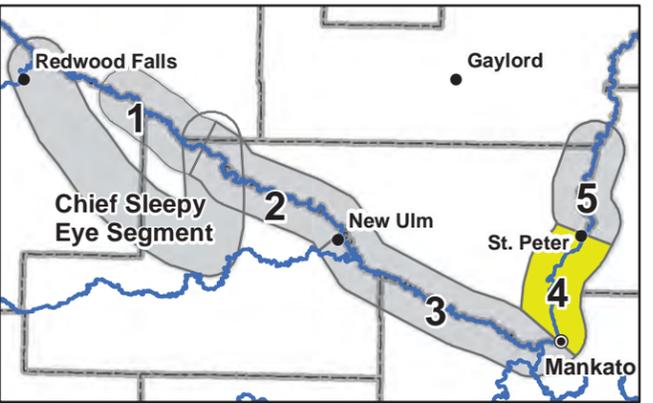
Minnesota River State Trail

Figure 14: Segment 4 - Mankato to Saint Peter



Legend

- U.S. Trunk Highway
- MN Trunk Highway
- County Highway
- Local Roads
- Railroad
- Minnesota River Valley Scenic Byway
- Sakatah Singing Hills State Trail
- City and Regional Trails
- Minnesota Snowmobile Trail
- State Park
- Scientific and Natural Area
- Wildlife Management Area
- County Park
- Kasota Prairie
- City Boundaries
- Historic Site
- City Park
- Public Water Access Sites



Segment 4 Trail Communities and Connections

City of Kasota

Reuben Buetters was the first settler in Kasota and all of Le Sueur County in 1851. J.W. Babcock founded the city and eventually established it as the Village of Kasota, the only establishment in the Kasota Township of any commercial or political importance.

The Kasota Village Hall is on the National Register of Historic Places. Babcock also was the first to begin quarrying Kasota limestone in and around the city of Kasota. The Babcock Company was the chief stone company throughout the early history of the city, and at one point, decided to blast within the city limits. This led to the creation of the park on County Road 21 in the town center, after the company was forced to fill in the quarry near the homes of city residents.

In the early 1980s, the Babcock Company went bankrupt. The Vetter Stone Company subsequently bought the Babcock quarries, further expanding the business, which currently operates just outside the Mankato city limits. The Vettters were former employees of the Babcock Company who left to start their own company in the 1950s. The former location of the Babcock Company in Kasota is now occupied by Door Engineering, a company manufacturing industrial doors.

The city of Kasota is a small community with a population of 675, according to the 2010 Census. The city covers one square mile in Le Sueur County.

Potential trail alignments through Kasota exist with a likely crossing into Saint Peter on State Highway 22. The trail could enter Kasota from the south on State Highway 22, County Highway 21, or on Mills Street. The trail would follow Hill Street and exit Kasota to the north on County Highway 102/45 or Highway 22 (See Figure 15).

City of Saint Peter

Saint Peter was founded in 1853 by Captain William Bigelow Dodd, who claimed 150 acres north of what is now Broadway Avenue. He named the new settlement Rock Bend because of the rock formation at the bend of the Minnesota River. The town site was platted and surveyed in 1854 by Daniel L. Turpin. In 1855, a group of Saint Paul businessmen interested in promoting the town formed the Saint Peter Company, and the town was renamed Saint Peter. The president of the Company was Willis A. Gorman, Territorial Governor of Minnesota. Many of the streets in Saint Peter were named after streets in New York City; Park Row, Chatham, Broadway, Nassau, and Union, for example. Captain Dodd was originally from Bloomfield, New Jersey. His second wife, Harriett Newell Jones, a native of Cabot, Vermont, was living in New York at the

time of their marriage at the Church of the Holy Communion in New York City, that church helped fund the church in Saint Peter which shares the same name.

In 1857, an attempt was made to move the Territory of Minnesota's capital from Saint Paul to Saint Peter. Governor Gorman owned the land on which the bill's sponsors wanted to build the new capitol building.

According to the 2010 Census, Saint Peter's population is 11,196, up from 9,747 in the 2000 Census. Some of the major industries in Saint Peter include educational services, health care, retail, and manufacturing. The downtown area is primarily retail and three blocks are designated as a historic district and are listed on the National Register of Historic Places.

Saint Peter is home to Gustavus Adolphus College. Founded in 1862 by Swedish Americans, Gustavus Adolphus College is a private liberal arts college rooted in its Swedish and Lutheran heritage. Approximately 2,600 students attend the college. A Nobel Conference is held annually and features science-based presentations by and discussions with notable scientists and Nobel Laureates. The conference has been held since 1965.

Numerous parks and recreation opportunities can be found in Saint Peter. Sixteen parks offer a variety of opportunities, including picnicking, ball fields, playgrounds, swimming, camping, trails, and fishing. The city's 2005 comprehensive plan lays out other priority areas for preservation, development, or expansion in the future.

A trail connection to Saint Peter will be made across the Highway 22 bridge. This bridge has a walk and bikeway separated from vehicular traffic with a barrier. Existing infrastructure could be utilized to connect trail users to downtown Saint Peter and the Traverse des Sioux Treaty Site to the north.

Traverse des Sioux Treaty Site History Center

For centuries, Traverse des Sioux has been a crossroads and meeting place for many cultures. Native Americans gathered here to hunt and traverse the river using the shallow crossing, calling the site Oiyuwege, meaning "the place of crossing."

The home of the Nicollet County Historical Society, the History Center museum was built next to the site where the Treaty of 1851 between the Dakota people and the federal government was signed. The museum contains three exhibit halls, an audio-visual room, archives, and trails.

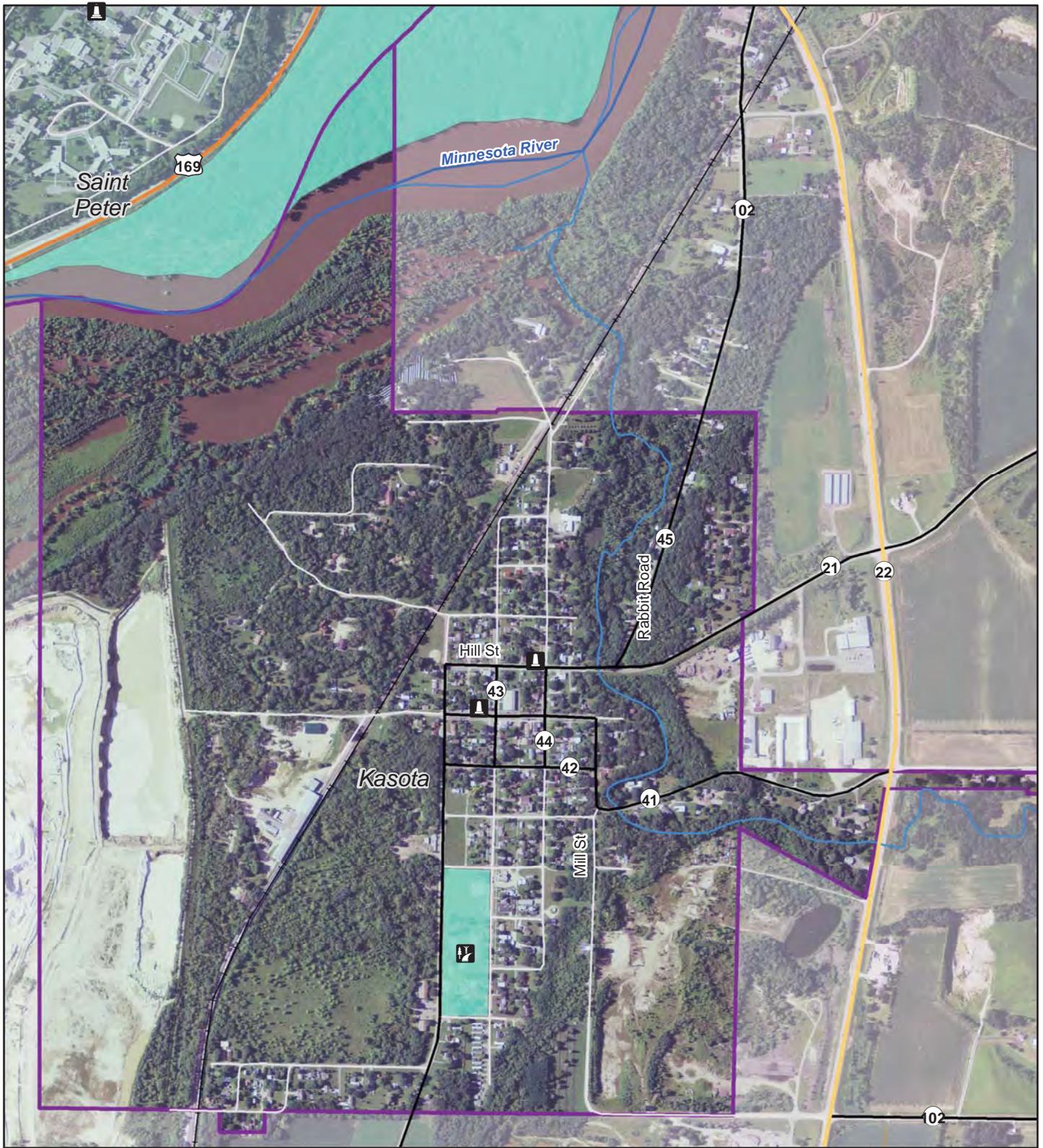


Figure 15: City of Kasota

0 500 1,000 2,000 Feet



MN Department of Natural Resources
Division of Parks and Trails

September 2015

Legend

-  U.S. Trunk Highway
-  MN Trunk Highway
-  County Highway
-  Railroad
-  Snowmobile Trail
-  City Boundaries
-  City Park Boundaries
-  City Park
-  Historic Site
-  Water Access Site

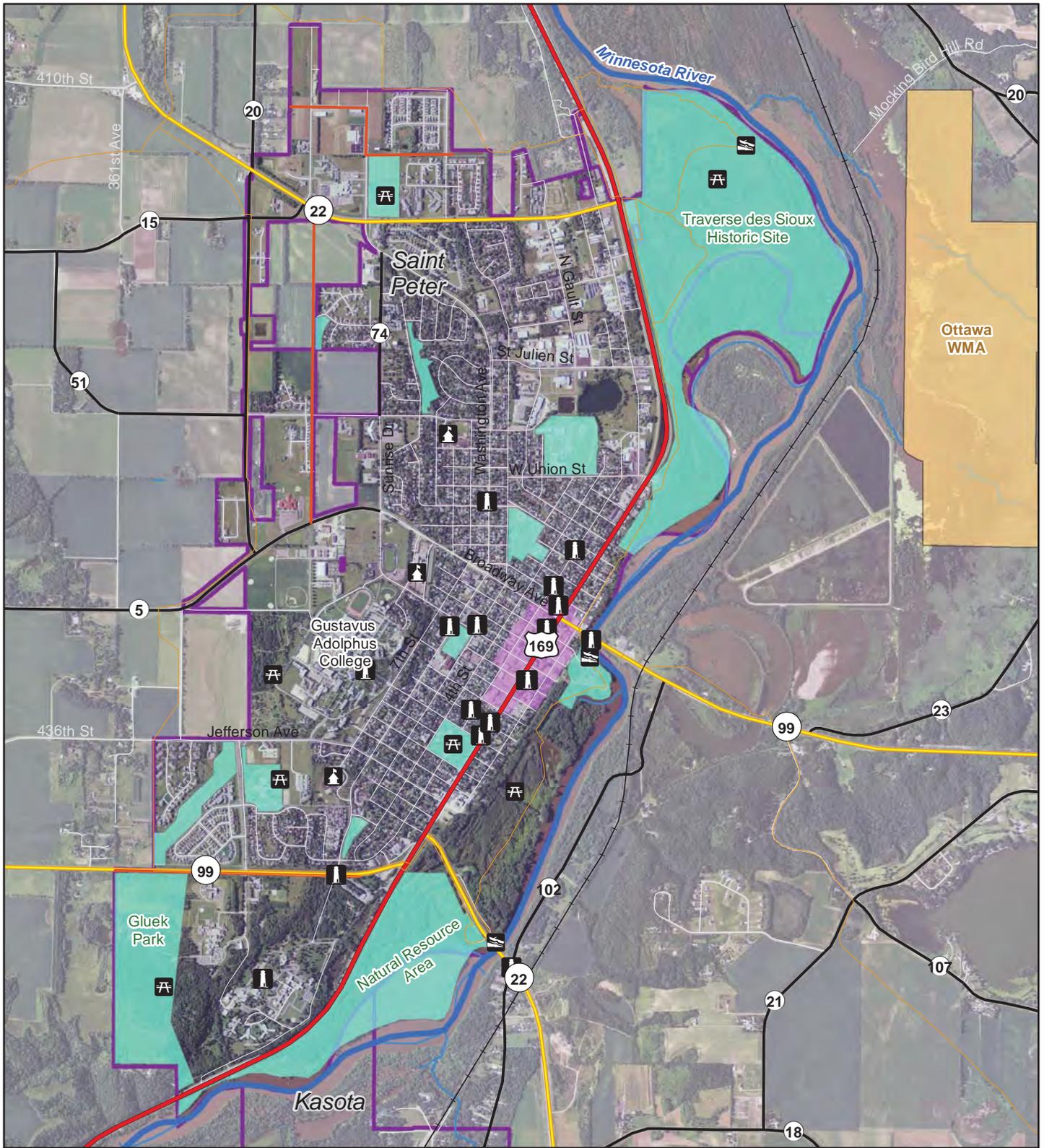


Figure 16: City of Saint Peter

0 0.25 0.5 1 Miles



MN Department of Natural Resources
Division of Parks and Trails

September 2015

Legend

- U.S. Trunk Highway
- MN Trunk Highway
- County Highway
- Local Road
- Railroad
- City & Regional Trail
- Snowmobile Trail
- City Boundary
- Central Business District
- City Park
- Historic Site
- School
- Public Water Access Site

Kasota Prairie Scientific and Natural Area

The Kasota Prairie SNA consists of 45 acres located on an extensive rock terrace overlooking the Minnesota River Valley. When the valley was originally carved by Glacial River Warren the flooded river covered this terrace. Today, prairie, wet meadow, oak woodland, and lowland hardwood plant communities thrive in the thin soils on site. Shrubby patches of wild plum, wolfberry, and narrow-leaved meadowsweet provide nesting and perching sites for horned larks, loggerhead shrikes, and upland sandpipers. Recreational uses include hiking, photography, snowshoeing, and wildlife viewing.



The 90 acre Kasota Prairie, located about one mile north of Kasota Prairie SNA, could be an additional trail connection in this segment. It is preserved and managed by a non-profit, Save the Kasota Prairie.

Seven Mile Creek County Park

Seven Mile Creek County Park is located south of Saint Peter and is accessed by US Highway 169. The 628 acre Nicollet County Park is comprised of wooded bluffs along Seven Mile Creek and the flood plain where the creek enters the Minnesota River. The park features 10 miles of multi-use trails, equestrian parking, and an underpass of Highway 169. Other facilities include shelters and picnic areas, a playground, sports fields, and a boat landing to the Minnesota River. Seven Mile Creek is one of few designated trout streams in south-central Minnesota.

Segment 5: Saint Peter to Le Sueur

This segment extends north approximately 12 miles from the city of Saint Peter to the city of Le Sueur. Highlights of this segment are Ottawa Village State Historic District, Traverse des Sioux Treaty Site, and the communities of Saint Peter and Le Sueur. Several natural areas on the east side of the river offer scenic vistas overlooking the river valley and could be rest areas for trail users. The Minnesota River State Trail will also connect to the Minnesota Valley State Trail in Le Sueur.

Criteria for this segment include:

- Provide connections to historic features in Ottawa Village and several natural features located in this corridor.
- Connect to Minnesota Valley State Trail at trailhead in Le Sueur.
- Take advantage of the Minnesota River Valley Scenic Byway alignment as an identified scenic route with unique design standards.

The most desirable alignment for this corridor would generally follow the scenic byway corridor on County Highways 23 and 36. These roads run along the edge of the flood plain and bluffs, and offer great views of the valley. Several natural areas in this corridor would provide excellent opportunities for users to get off the trail and see unique vegetation and wildlife. A benefit of this alignment is that it would take trail users near the Ottawa Village historic district.

An alternative alignment would be to follow State Highway 112 south from Le Sueur to where it connects with County Highway 109. This route could follow several county and local roads to provide connections back into the river valley from Highway 109. This alternative may have slightly higher vehicular travel near Le Sueur and would take trail users farther away from the river.

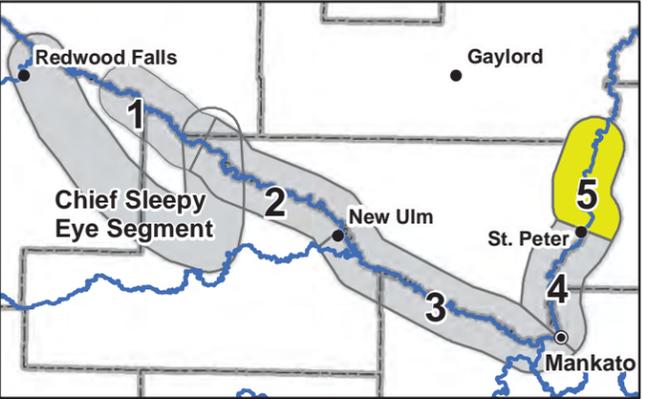
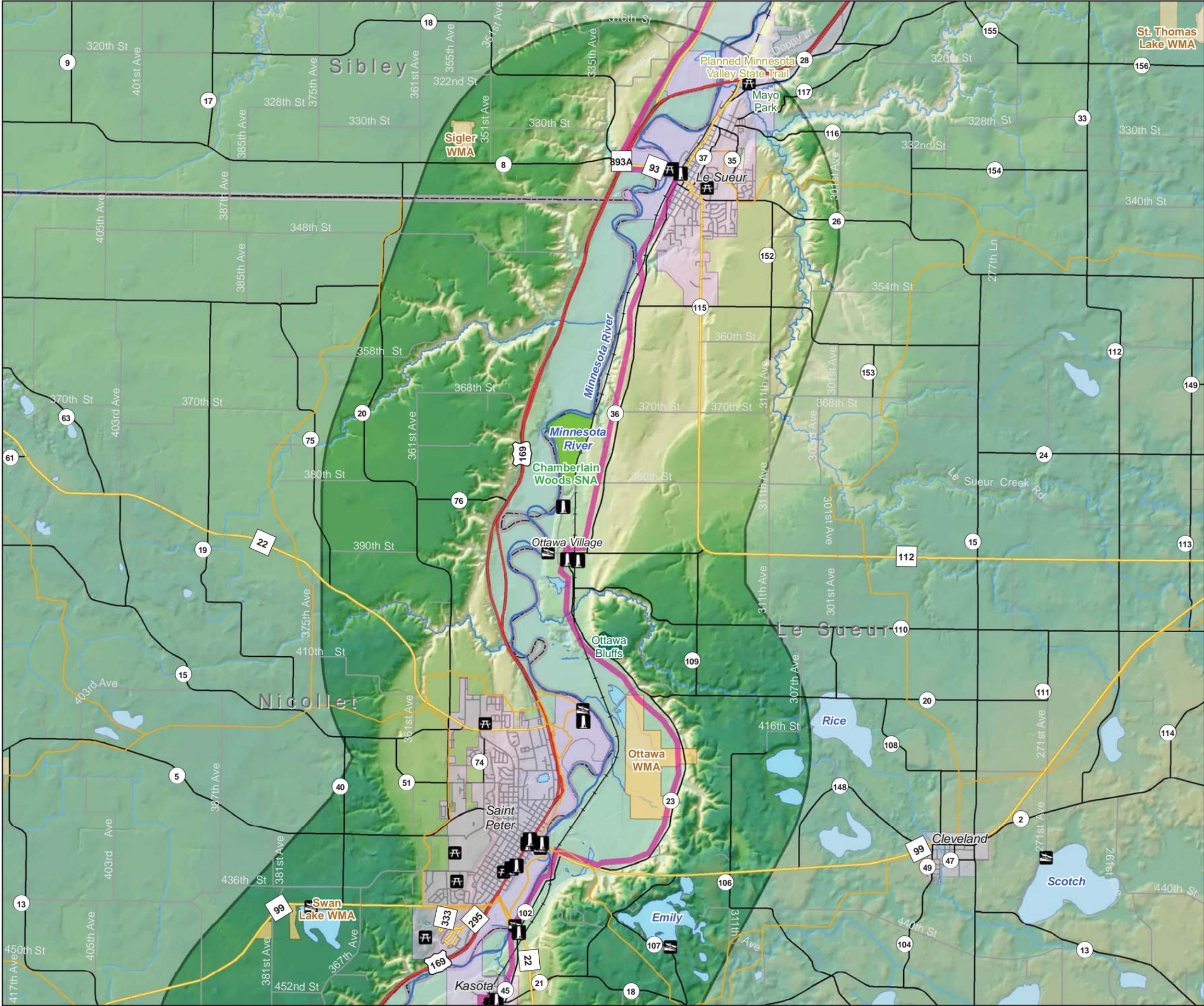
One of the principal property owners on the east side of the Minnesota River between Saint Peter and Le Sueur, Unimin Corporation, has stated its support for the trail proposal and has mentioned the potential for the company to permit a trail corridor on portions of its lands.

Minnesota River State Trail

Figure 17: Segment 5 - Saint Peter to Le Sueur

Legend

-  U.S. Trunk Highway
-  MN Trunk Highway
-  County Highway
-  Local Roads
-  Railroad
-  Minnesota River Valley Scenic Byway
-  Planned Minnesota Valley State Trail
-  City and Regional Trails
-  Minnesota Snowmobile Trail
-  Scientific and Natural Area
-  Wildlife Management Area
-  The Nature Conservancy Preserve
-  City Boundaries
-  Historic Site
-  City Park
-  Public Water Access Sites



Segment 5 Trail Communities and Connections

City of Le Sueur

The city of Le Sueur is located along the Minnesota River just off of Highway 169 in Le Sueur County. Le Sueur is known locally as the “Valley of the Jolly Green Giant” because of the Green Giant Company’s history in the town. The city is 4.7 square miles in area, with a population of just over 4,000. A small portion of the city extends across the Minnesota River into Sibley County.

The city of Le Sueur was named after the French explorer Pierre Charles Le Sueur. In 1700, Le Sueur traveled up the Saint Peter’s River, now known as the Minnesota River, looking for mineral deposits. He established a fort near the Blue Earth River and after experiencing some conflicts with Native Americans, he moved the establishment to the city’s present location. Le Sueur left the Minnesota Valley in 1702 and it wasn’t until the 1850s that settlers began to arrive in the area.

William W. Mayo began his medical practice in Le Sueur before moving to Rochester and starting the Mayo Clinic with his sons. His home has been restored to its mid-1800s appearance and is listed on the National Register of Historic Places.

The Minnesota Valley Canning Company was founded in Le Sueur in 1903. In the beginning, the cannery packed white cream style corn and peas. In 1925 the company began to market Green Giant Brand peas, and in 1950 the name was changed to Green Giant Company. Over the years, the company continued to expand and became a household name. The Green Giant label is now owned by General Mills. The canning processing plant in Le Sueur was used until 1995 and is still used for research on corn varieties.

The city’s population at the 2010 Census was 4,048 and has remained relatively steady (the population at the 2000 Census was 3,922). Manufacturing is the major employment sector in Le Sueur. Recent expansion by the Cambria Company, manufacturer of quartz countertops, is fueling an increase in employment.

There are two alternative routes through the city. One alternative is to follow the river corridor on the west side of town. The second is to use the city and county trails system. Both alternatives would connect to Mayo Park, where the Minnesota Valley State Trail is proposed to terminate. Mayo Park is identified as a potential trailhead for both state trails.

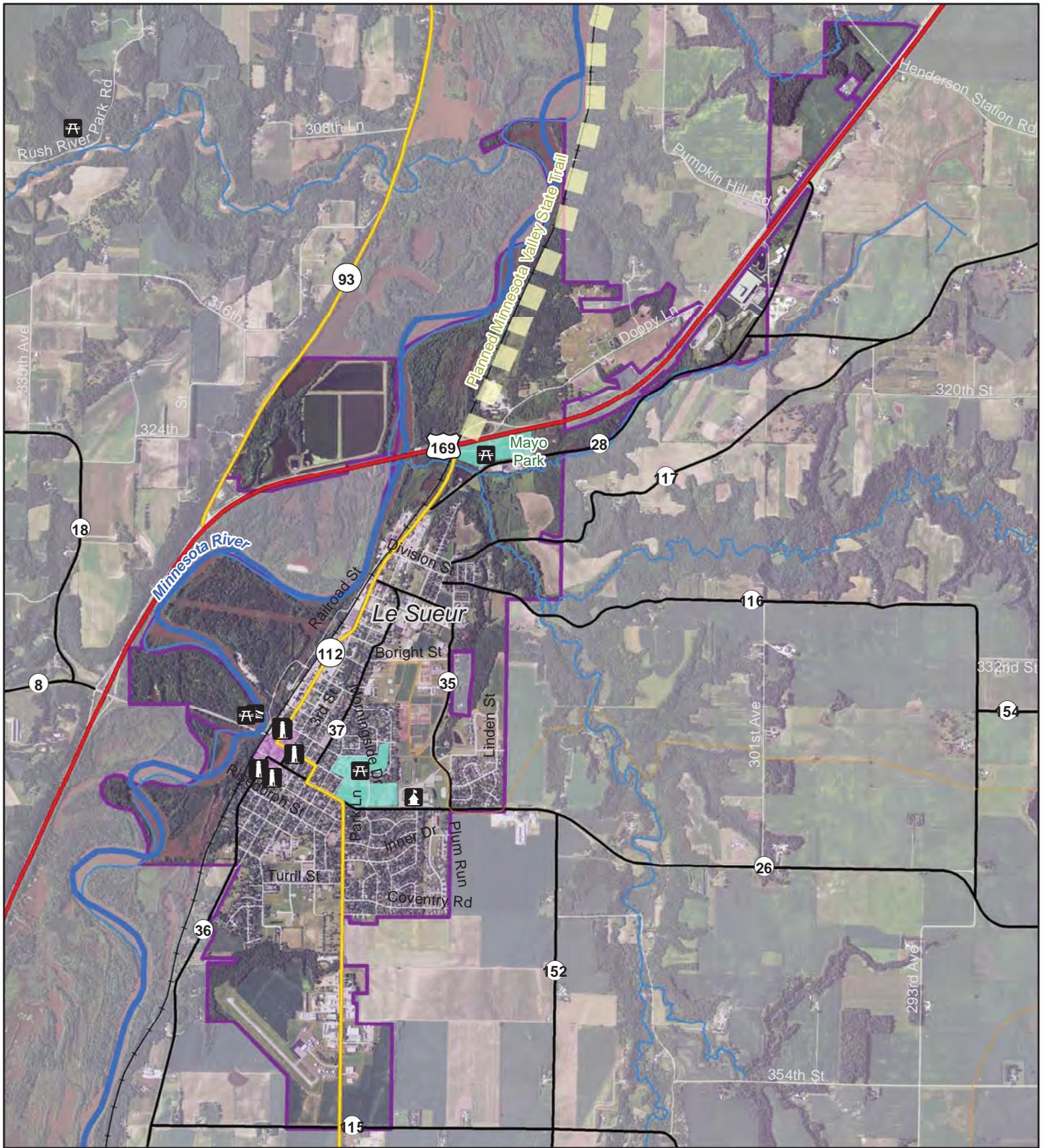


Figure 18: City of Le Sueur

0 0.25 0.5 1 Miles



MN Department of Natural Resources
Division of Parks and Trails

September 2015

Legend

-  U.S. Trunk Highways
-  MN Trunk Highways
-  County Highway
-  Local Road
-  Railroad
-  City & Regional Trail
-  Snowmobile Trail
-  Minnesota Valley State Trail
-  City Park Boundaries
-  Central Business District
-  City Boundaries
-  City Park
-  Historic Site
-  School
-  Public Water Access Sites

Ottawa Village

This state historic district dates back to 1860. The platted town site occupies a long narrow tract of land on the bluffs along the Minnesota River, between Saint Peter and Le Sueur. Ottawa developed between the 1860s and 1890s, but by 1900 was falling into decline. Seven locally quarried stone buildings are listed on the National Register of Historic Places. One of these sites, the Ottawa Methodist Church, was built in the 1860s of native limestone and is one of the oldest Methodist Church buildings in Minnesota.

Chamberlain Woods Scientific and Natural Area

This SNA protects a mosaic of vegetation types on 302 acres along the Minnesota River. The seasonally wet floodplain forest is dominated by cottonwood, basswood, and elm trees. A series of “point bars” mark the old banks of the river and capture a visual history of the changing river route. A variety of bird species including the Acadian flycatcher and bald eagle have been observed on the site. Recreational uses include hiking, photography, snowshoeing, and wildlife viewing.

Ottawa Wildlife Management Area

This WMA consists of 577 acres of marsh and shrubland in the Minnesota River flood plain. There are several areas of open water on site including three spring-fed ponds that are annually stocked with trout. Hunting options include: deer, small game, forest game birds, pheasant, waterfowl, and turkeys. Scenic views of the WMA would be an asset if an alignment along Le Sueur County Highway 23 was developed.

Ottawa Bluffs Preserve

The Nature Conservancy purchased this 62 acre property in 1975 to protect a remnant of the Minnesota River Bluffs. Since then, the Conservancy has been managing woody vegetation to restore prairie openings that were found on site in pre-settlement conditions. The preserve contains a Native American burial mound located at the top of the bluff (The Nature Conservancy 2013). This site offers visitors a great view of the Minnesota River Valley and a chance to observe prairie plants such as pasque flower, blazing star, and purple prairie clover.



This church, one of the oldest Methodist churches in Minnesota, is just one of seven historic limestone buildings in the village.

Segment 6: Chief Sleepy Eye Segment

The Sleepy Eye loop remains an interesting and viable option for trail development in the future. This segment is a 35 mile loop of the Minnesota River State Trail. It will connect Fort Ridgely State Park to the communities of Sleepy Eye, Morgan, and Redwood Falls. The Casey Jones State Trail is also planned to terminate in Redwood Falls.

A portion of this segment could follow an old railroad grade from Sleepy Eye to Redwood Falls. The rail line was constructed in 1878 and was crucial to the development of Evan, Morgan, and Redwood Falls. Passenger service was discontinued in the 1930s. Freight traffic continued to decline until the line was abandoned in 1977 (Schmidt 2007).

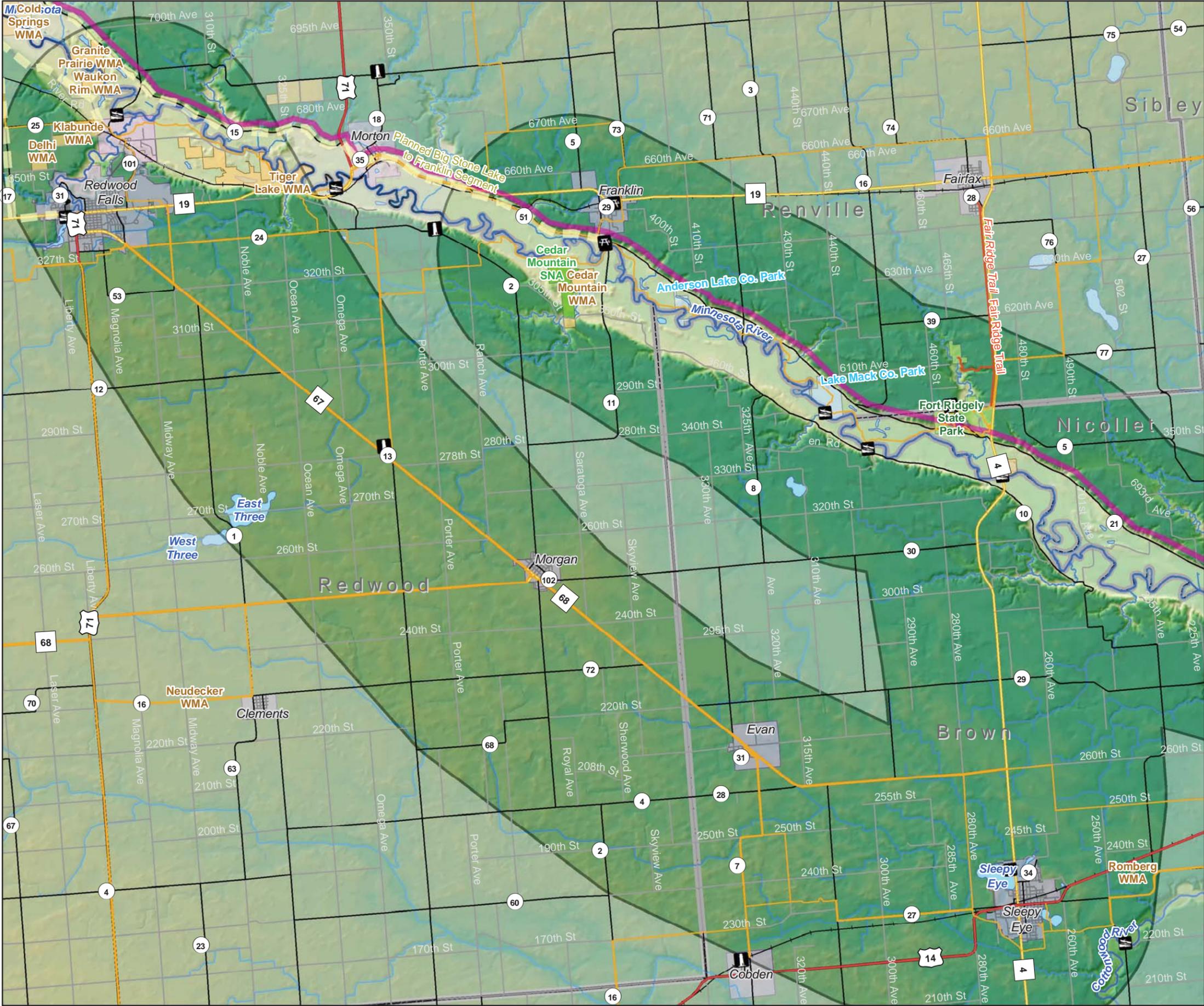
Criteria for this segment include:

- Former railroad right of way with flat topography and straight route.
- Facilitate connection to Casey Jones State Trail Extension that is authorized from Currie to Redwood Falls.

The trail would cross the Minnesota River on the State Highway 4 bridge and continue south towards Sleepy Eye. There are several local trails that could be used for a connection. The trail would travel west and likely utilize an old railroad grade that runs northwest to Redwood Falls. The trail would pass through the communities of Evan and Morgan. This segment would be an opportunity for trail users to experience a landscape dominated by agriculture. Prairie restoration along the trail corridor would create a unique state trail experience.

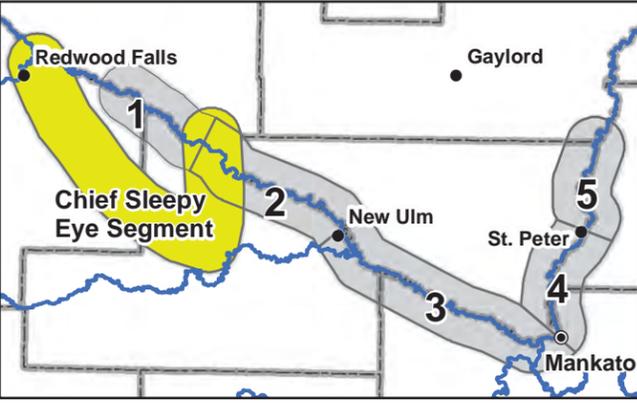
Minnesota River State Trail

Figure 19: Segment 6 - Chief Sleepy Eye Segment



Legend

- U.S. Trunk Highway
- MN Trunk Highway
- County Highway
- Local Roads
- Railroad
- Minnesota River Valley Scenic Byway
- Planned Big Stone Lake to Franklin Segment
- City and Regional Trails
- Minnesota Snowmobile Trail
- State Park
- Scientific and Natural Area
- Wildlife Management Area
- County Park
- City Boundaries
- Historic Site
- City Park
- Public Water Access Site



Segment 6 Trail Communities and Connections

City of Sleepy Eye

The city of Sleepy Eye is located at the junction of US Highway 14 and State Highway 4, to the southwest of Sleepy Eye Lake. The city limits cover just over 2 square miles in Brown County.

Sleepy Eye Lake is named after Dakota chief Ish Tak Ha Ba, which translates to Sleepy Eyes. Ish Tak Ha Ba's jurisdiction covered from Swan Lake and all of the Lower Sioux from Carver to Lac-Qui-Parle. He signed the Prairie du Chien, Mendota, and Traverse des Sioux treaties in his lifetime.

The city was platted in 1872 by Walter Brackenridge, a lawyer for the railroad, and Thomas Allison, a local settler. The Sleepy Eye Flour Milling Company began operations in 1883. At one time, the mill owned 27 grain elevators in Minnesota and South Dakota.

The population of Sleepy Eye is 3,599 according to the 2010 census. The community has three schools, a medical center, and a business district on Main Street, or US Highway 14, that serves the agricultural based area. The Sleepy Eye parks system includes an ice arena, water park, campground, and a three mile paved path around the lake.

City of Morgan

Morgan is a city in Redwood County with a population of 896 as of the 2010 census. The city covers over one section of land at the intersection of State Highways 67 and 68. The city was developed alongside the Chicago and North Western railroad that was constructed in 1878 and was used until 1977 when the line was abandoned.

City of Redwood Falls

Redwood Falls is located one mile south of the Minnesota River on the banks of the Redwood River. The city is sometimes referred to as the "Scenic City" and is known for its picturesque bluffs and gorges along the river.

Redwood Falls is named after the Redwood River, the banks on which the community is located. The Redwood River falls 140 feet here and descends in rapids the last three miles before it joins the Minnesota River. After the US Dakota War of 1862, the upper Minnesota River Valley ceased being part of the Dakota reservation and was opened up to European settlers. Redwood Falls was settled by Col. Samuel McPhail and J.S.G. Honner in 1864. It was platted in 1865, incorporated as a village in 1876, and as a city in 1891.

The city's natural and cultural assets make it an important destination for trail users. Many of the city's historic points of interest are located in the downtown

business district, just two blocks east of the falls. This area offers services to trail users including hotels, shopping, and restaurants. The population at the time of the 2010 census was 5,254.

Redwood Falls has nine parks that serve the community. Alexander Ramsey Park is located below the falls on the Redwood River. At 219 acres it is the flagship of the system and includes a campground, zoo, four miles of trails, and other day-use facilities. Redwood Falls also has a community center that includes a multi-purpose gymnasium, civic arena, conference center, and fitness center.

Downtown Redwood Falls has been identified as a trailhead for the Casey Jones State Trail and the Minnesota River State Trail in the 2008 Master Plan for the Minnesota River State Trail – Big Stone Lake to Franklin section. The Sleepy Eye loop would ideally connect to both of these trails at a trailhead. Trail connections in the city may be difficult due to the constraints of three highways that intersect the city, topography, and the river. The Sleepy Eye loop trail would enter the city along State Highway 67, Broadway Street, on the southeast edge of the city.

Gilfillan Estate

Charles Duncan Gilfillan purchased 13,000 acres of land in Redwood County. On the site now known as Gilfillan, Charles built a beautiful home and offices, and later a grain elevator, stock yard, and tenant homes. He raised livestock for export to Great Britain. The farm site was left to Redwood County Historical Society to be kept in memory of his son, Charles Oswin Gilfillan. Its intended purpose is to preserve the history of the Gilfillan Estate and the surrounding area and to make this history available to the public.

The estate hosts many gatherings including fundraisers, festivals, and private events. The gardens of the estate are open for free viewing on a daily basis and guided tours can be accommodated by appointment. The Gilfillan Estate Fall Festival is held annually and it provides participants the opportunity to see things made the old fashioned way such as: apple cider, butter, rugs, and other goods. The estate offers refreshments and activities during FarmFest, which is held adjacent to the property.

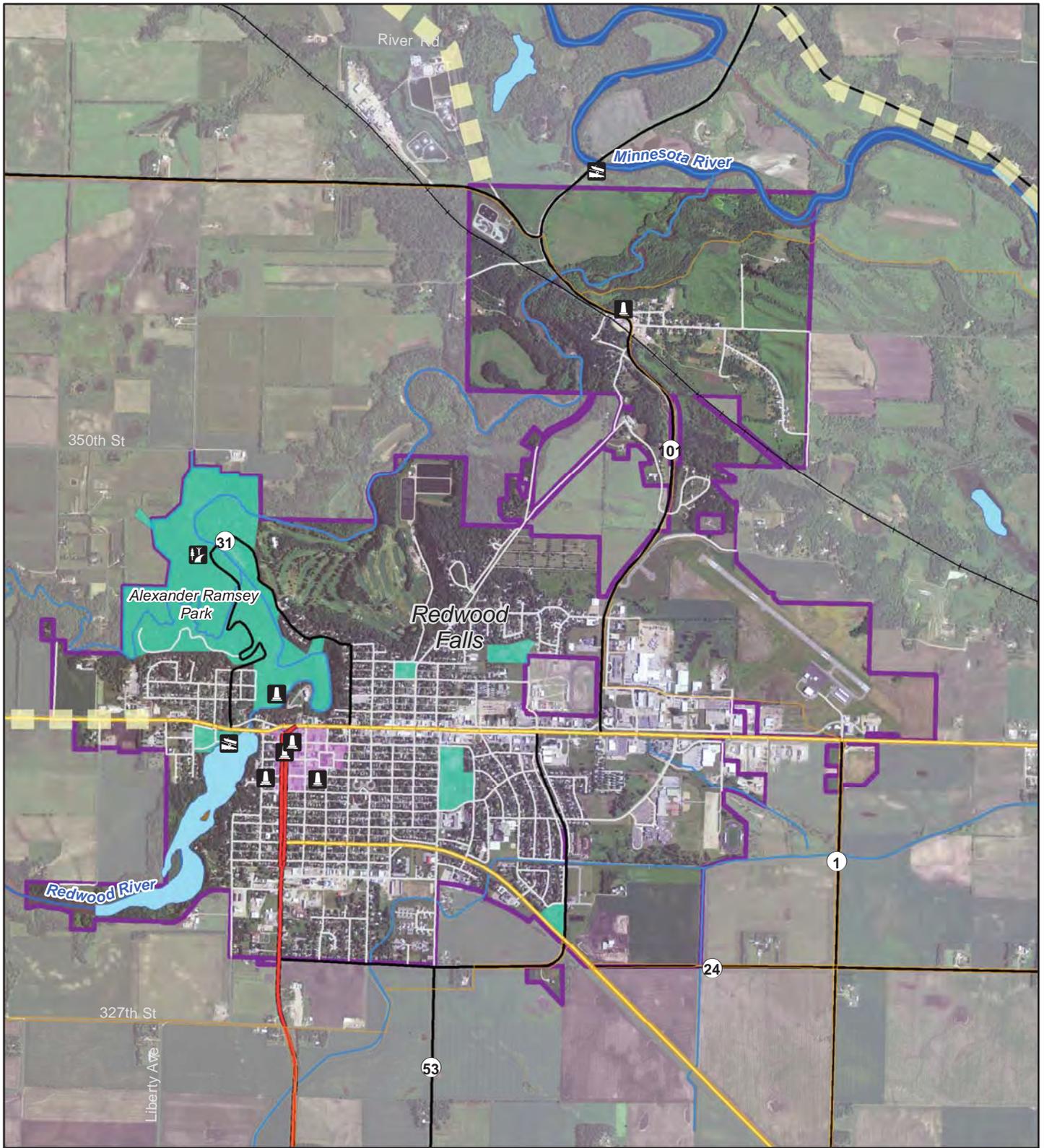


Figure 20: Redwood Falls



Legend

- | | | |
|--------------------|-------------------------------|-------------------|
| U.S. Trunk Highway | Big Stone to Franklin Segment | City Park |
| MN Trunk Highway | Regional Trail | Historic Site |
| County Highway | Snowmobile Trail | School |
| Township Road | City Park Boundaries | Water Access Site |
| Municipal Road | Central Business District | |
| Railroad | City Boundaries | |

5. TRAIL MANAGEMENT

Projected Trail Use

Trail usage can be anticipated by comparing this trail to data collected from other state trails in southern Minnesota. Different portions of the trail will exhibit different usage patterns. There will be a higher local use near Mankato while there will be a higher percentage of tourist use on the rest of the trail.

The Mankato-North Mankato Metropolitan Statistical Area will drive local use similar to the usage pattern exhibited on the Douglas State Trail. In 2009, the Douglas trail had 64,869 total hours of summer use (Kelly 2010). A user hour is defined as one person spending one hour on the trail. The Mankato-North Mankato Metropolitan Statistical Area has about 100,000 people as compared to about 210,000 for the Rochester metropolitan area, which is located at the Southern terminus of the Douglas trail.

Throughout the trail corridor, usage levels could be similar to other tourist trails in the state (tourist trail users travel over 50 miles to use the trail and/or have lodging away from their permanent home). A contiguous trail featuring the bluffs, flood plain, and river landscapes will create a desirable trail experience for tourist users. According to a 2010 report (Kelly), other tourist trails exhibited the following summer usage:

- Root River: 123,410
- Paul Bunyan: 81,711
- Heartland: 74,419

Usage of the Minnesota River State Trail could also be projected by examining the number of outdoor recreationists in the area. This can be approximated by studying the annual attendance of state parks in the trail corridor, as shown in the table below.

	2012	2013	2014
Flandrau State Park	234,047	238,114	242,285
Fort Ridgely State Park	65,424	69,415	66,722
Minneopa State Park	141,221	146,236	173,147

Providing connections to these parks will promote usage of the trail by state park visitors. According to Kelly (2010) state park visitors also use state trails. On the portion of the Paul Bunyan Trail near Lake Bemidji State Park, 65% of tourist trail users were found to also be visitors to the state park (a tourist trail user travels over 50 miles to use the trail and/or has lodging away from their

permanent home). Also, connections to regional, city, and local parks will encourage additional trail use.

Trail Maintenance

Monitoring and maintenance of the Minnesota River State Trail will be critical to provide users with a safe trail experience and prolong the life of the trail. 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 *Trail Planning, Design and Development Guidelines* (DNR 2007).

Maintenance activities are numerous and diverse. Several maintenance activities common in Minnesota are listed below (DNR 2007). 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 for most trails.
- Clear woody vegetation that encroaches on the trail corridor.
- Sweep and clear debris from the trail surface and corridor.
- Seal cracks.
- Repair failing trail edges.
- Patch holes caused by erosion, culvert failure, subgrade problems, animals, or other factors.
- Sealcoat.
- Rehabilitate the trail surface. Hot or warm mix overlays 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 Minnesota River State Trail, the Division of Parks and Trails will follow the guidelines established under 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 Counters

Trail counters can be used to increase understanding of trail usage, provide justification for investments, and improve decision making for the future. Trail counters can record and distinguish trail use, direction of users, and time of use. This information can be extremely valuable for future state trail planning.

Maintenance Recommendations

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

Recommendation 2: Implement trail counters on the trail to increase understanding of trail usage, provide justification for trail investment, and improve decision making for the future.

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

Information and Education**Trail User Orientation**

Trail users must have good 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. It should include distances between communities, options for other trail connections, and locations of services. If any significant deviation from the typical trail design occurs – e.g., 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.

Identification of Services

Trail users benefit from knowing where they can obtain services (e.g., medical assistance, 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 aimed at educating trail users about appropriate behavior, promoting safe trail use, and protecting the quality of the trail environment should be developed and posted at trailheads and other key locations.

Volunteer trail ambassadors could be used to distribute information on appropriate trail behavior and etiquette relative to specific problems such as unleashed dogs, passing of other users, and the need to clean equipment to prevent the spread of invasive species.

Interpretation of Natural and Cultural Resources

There are many natural, historic, and cultural resources of significance and interest along the trail. These include river oxbows, unique geological features, areas of historic significance, remnant native plant communities, and rare wildlife. The story of how the Minnesota River Valley has changed can be told through interpretation of these resources.

Interpretive themes have been identified through the planning process. The identified themes 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 Fort Ridgley, Flandrau, and Minneopa state parks, as well as those used on the Sakatah Singing Hills State Trail, can inform interpretive signage for the Minnesota River State Trail. Coordination between park and trail interpretation and programming will improve trail users' experience.

Themes for the trail could include the following:

- Geological activities; like the glacial advance and retreat, Glacial Lake Agassiz, and the Glacial River Warren.
- History, traditions, and culture of Dakota, and US-Dakota War of 1862.
- Historical vegetative patterns and the processes, such as fire, that maintained the dominance of the prairie.
- Early European exploration and their observations upon arriving in the valley.
- Role the river and railroads played in settlement and development patterns in the region.
- Landscape changes since European settlement.
- Observation of indicator species like the bald eagle, blue sucker, and river otter to show recent progress in water quality and habitat protection.
- Dominance of agricultural land uses and amount of native prairie remaining in Southern Minnesota.
- Current resource management strategies in the valley.

Interpretive material will be developed in consultation with other DNR divisions and the Minnesota Historical Society. Themes, in addition to those listed above, may be identified and interpreted over time.

Many other sites, parks, and museums offer educational and interpretive services that could be complimentary to those provided by the DNR. Trail users would be encouraged to visit some of these sites if they are seeking a particular experience. These sites include Fort Ridgely, Hermann Monument, Reconciliation Park, Traverse des Sioux Treaty Site, and Mayo House among many others.

Information and Education Recommendations

Recommendation 1: *Provide community services information, trail orientation, trail rules, and trail courtesy information on a kiosk at the same time the trail is developed.*

Recommendation 2: *Develop a kiosk design that reflects the interpretive theme(s) for the trail that can be used to provide orientation and interpretation in communities and at rest areas along the trail.*

Recommendation 3: *Include segments of the Minnesota River State Trail in interpretive planning for other state facilities in the Minnesota River Valley, so that users better understand the Minnesota River Valley's unique natural, historical, and cultural features.*

Recommendation 4: *Parks and Trails staff should cooperate with schools to use the trail for natural resources education purposes.*

Recommendation 5: *The DNR should partner with other organizations such as Minnesota River Valley Scenic Byway, tribes, local historical societies, chambers of commerce, and municipalities to develop content for interpretive displays. Displays could utilize alternative methods to increase trail users' engagement with interpretive material. Methods used could include different forms of media and participatory or interactive displays.*

Enforcement

Minnesota State Trails are safe and generate very few complaints. Eighty to 90 percent of state trail users indicate that they have no problems or conflicts with other trail users (Kelly 2010). The most common problems that were indicated 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 (Schoenbauer 2010). 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 leaving the treadway designated for their use are often among the concerns identified during the planning process, and are all likely areas for 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 deal with issues as they arise and 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: *Develop on-site information that targets important trail courtesies and rules necessary for a safe and enjoyable experience.*

Recommendation 3: *Enforcement related costs will be noted when providing information about trail costs to legislators and local government officials.*

6. TRAIL CORRIDOR RESOURCES

The landscape of the trail corridor is that of the Minnesota River Valley, one of the most prominent geographic features of southern and western Minnesota. Clearly visible on statewide relief maps, the Minnesota River valley and its major tributaries form a deep, branching trough cutting across nearly level to rolling plains and moraines. Most of this region's native habitats that existed prior to European settlement have been cultivated or developed, but the valley's steep topography has protected a large proportion of the region's remaining native plant communities and wildlife habitat.

The Minnesota River Valley has its origins in the most recent glacial period, the Wisconsin Glaciation, from 100,000 to 10,000 years ago. Lobes of ice advanced and retreated across the state, scouring and sculpting the landscape and removing, transporting and redistributing rocks and minerals. As the glaciers retreated approximately 12,000 years ago the meltwaters pooled behind the topographic divide, near the present border of North and South Dakota, forming the giant Glacial Lake Agassiz. One of the largest freshwater lakes ever known to have occurred on Earth, it covered over 100,000 square miles with a maximum depth of about 400 feet.

Torrential meltwater drainage from Lake Agassiz created the massive Glacial River Warren, which carved a channel up to 200-feet deep and one to seven miles in width. As Lake Agassiz found a northern outlet to Hudson Bay, the river level receded about 9,400 years ago, leaving an extremely wide flood plain and broad terraces of rock, sand, and gravel, which form the bluffs of today's Minnesota River Valley. The resulting landscape is one of the state's most scenic and historic, with unique geology, plant communities, and cultural history.

The Minnesota River, a major tributary of the Mississippi River, drains an area of approximately 16,900 square miles, of which 2,000 are in South Dakota and Iowa. From its source in Big Stone Lake in western Minnesota, the river flows southeast for 215 miles to Mankato, then northeast for 103 miles to its confluence with the Mississippi River at Fort Snelling. The section encompassed in this plan extends a distance of approximately 105 river miles from Franklin (river mile 179) to Le Sueur (river mile 74), including the cities of New Ulm, Mankato and Saint Peter, and straddling the boundary between the prairie and "Big Woods," as discussed below.

Ecological Classification System

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

Minnesota River Valley Landscape

As Lake Agassiz found a northern outlet to Hudson Bay, the river level receded about 9,400 years ago, leaving an extremely wide flood plain and broad terraces of rock, sand, and gravel, which form the bluffs of today's Minnesota River Valley. The resulting landscape is one of the state's most scenic and historic, with unique geology, plant communities, and cultural history.

Minnesota River State Trail Master Plan

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 Minnesota River north of its sharp bend at Mankato marks the boundary between the Prairie Parkland and the Eastern Broadleaf Forest.

These ecological provinces are divided into subsections – distinct landscapes of Minnesota, defined by vegetation, geology, and other resource criteria. The demarcation between the major provinces is also the boundary of two subsections: the Minnesota River Prairie and the Big Woods.

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

Minnesota River Prairie Subsection

The majority of the trail search corridor is within the Minnesota River Prairie subsection. The subsection consists of a gently rolling ground moraine. The eastern boundary consists of a series of end moraines. The Minnesota River occupies a broad valley that splits the subsection in half. The valley was created by Glacial River Warren, which drained Glacial Lake Agassiz. Agriculture is the predominant land use in this subsection.

Landform: Loamy ground moraine (till plain) is the dominant landform, but end moraines and lake plains also occupy a significant area. Ground moraine topography is level to gently rolling. The steepest topography of the subsection is along the Minnesota River and on the Big Stone Moraine, which has steep kames and broad slopes.

Bedrock geology: Most of this subsection is covered by 100 to 400 feet of glacial drift. Cretaceous shales, sandstones, and clays are the most common kinds of bedrock. Ordovician dolomite underlies the extreme southeastern edge.

Soils: Well- to moderately well-drained loamy soils formed in gray calcareous till of Des Moines lobe origin are dominant. Some soils are clayey and sandy and gravelly soils are present locally, but these account for only a small percentage of soils in the subsection. Most of the subsection is Udolls and Aqualls on relatively level topography, generally with 15 feet or less of local relief. Dry

Franklin to Le Sueur



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

priaire soils (primarily Ustolls) are also present on level to gently rolling topography. They occupy convex knobs on the landscape.

Hydrology: This subsection is drained by the Minnesota River. Most smaller rivers and streams eventually empty into the Minnesota or Upper Iowa rivers. The drainage network is poorly developed due to landscape characteristics. The subsection has 150 lakes greater than 160 acres in size. However, many of these are shallow perched lakes. Wetlands were very common before settlement, but most have been drained for cropland.

Natural disturbance: Fire was the most common natural disturbance before settlement. Fire suppression has allowed woodlands to develop from what were originally oak openings or brush prairies. Other causes of disturbance are floods and tornados.

Conservation concerns: Impacts on water quality from intensive agricultural activities, expanding use of pattern tiling and ditching, and draining of small wetlands are major conservation concerns in this subsection.

Big Woods Subsection

The Big Woods subsection is made up of gently to moderately rolling topography. Soils are formed in thick deposits of gray limey glacial till left by the Des Moines lobe. Northern red oak, sugar maple, basswood, and American elm were most common in this dominantly forested region. Today, most of the region is used for agriculture.

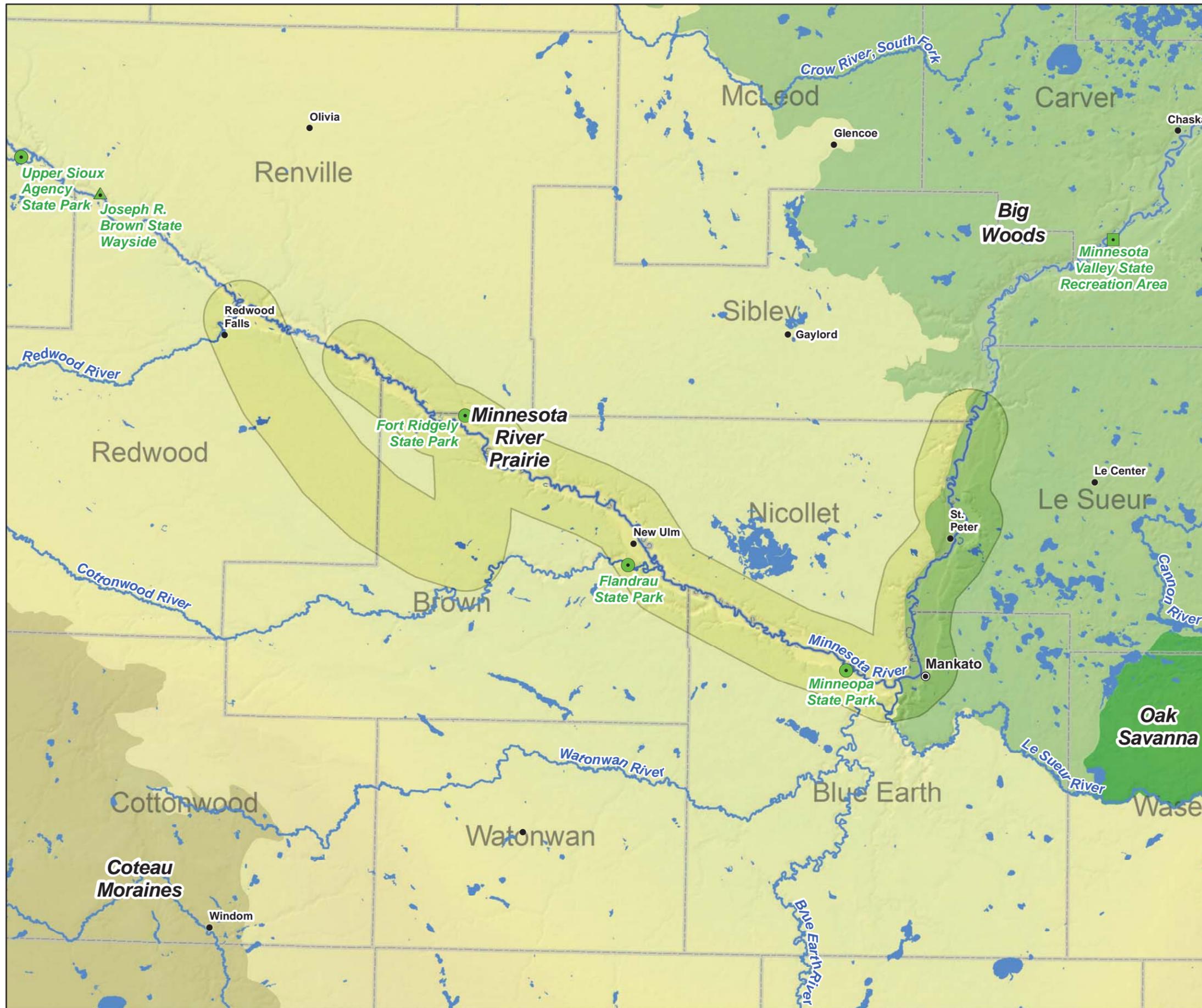
Landform: The primary landform is a loamy mantled end moraine associated with the Des Moines lobe of the Late Wisconsin glaciation. Parts of the moraine have ice disintegration features. The dominant landscape feature is circular, level topped hills bounded by smooth side slopes. Broad level areas between the hills are interspersed with closed depressions containing lakes and peat bogs. Drainage is often controlled by the lake levels.

Bedrock geology: Depth to bedrock varies from 100 to 400 feet. Underlying bedrock includes Ordovician and Cambrian sandstone, shale, and dolomite to the south and Cretaceous shale, sandstone, and clay to the north.

Soils: The soils are dominantly loamy, with textures ranging from loam to clay loam. Parent material is calcareous glacial till of Des Moines Lobe (Late Wisconsin glaciation) origin. They are classified primarily as Alfisols (soils developed under forests). There are some Mollisols (soils developed under grassland) on the west side of the subsection.

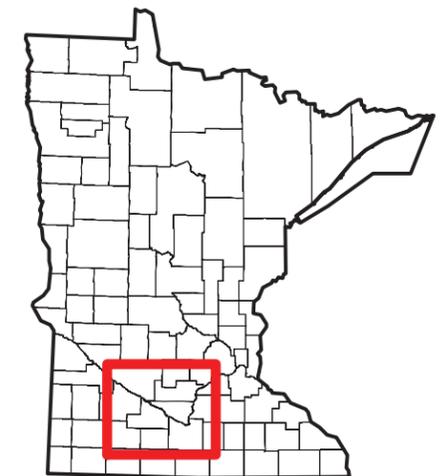
Minnesota River State Trail

Figure 21: Ecological Subsections



Legend

- State Park
- State Recreation Area
- ▲ State Wayside
- Major Cities
- Minor Cities
- Trail Search Corridor
- Minnesota River Prairie
- Big Woods
- Coteau Moraines
- Oak Savanna



Hydrology: The Minnesota River runs along the western boundary and then through the middle of this subsection. The Mississippi River forms part of the eastern boundary. The other major river is the Crow River and its associated forks. The subsection has an undeveloped drainage network, due to landform characteristics. Lakes are common. There are over 100 lakes greater than 160 acres in size. Many of these are groundwater-controlled with no inlets or outlets.

Natural disturbance: Although fire occurred within the subsection, it was much less common than on prairies to the west. This is primarily due to irregular topography and presence of lakes. Windthrow was probably also an important natural disturbance.

Conservation concerns: Common concerns in this subsection include fragmentation of forested areas, urbanization, and water quality in the agricultural landscape.

Climate

The Minnesota River valley, like the rest of Minnesota, experiences a continental climate with extremes in temperature from summer to winter. On the eastern side of the trail search corridor in Saint Peter, the mean annual temperature ranges from 12.5°F in January to 72.4°F in July. Near the western end in Redwood Falls, the average temperature ranges from 13.0°F in January to 73.4°F in July. (Midwestern Regional Climate Center)

The trail search corridor receives on average between 26 and 30 inches of precipitation each year, with Saint Peter receiving 29.67 inches and Redwood Falls receiving 26.64 inches. Mean annual snowfall ranges from 30.2 inches in Saint Peter to 35.1 inches in Redwood Falls. The average growing season is 157 days.

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 22) These notes indicate that tallgrass prairie was the dominant vegetation type throughout the western river valley, giving way in more fire-protected areas to forests, woodlands, and oak savannas. Prairie was intermixed with the Big Woods hardwood forest throughout the eastern part of the area. Throughout the entire corridor, river bottom forests were found along the river, surrounded by wet prairie throughout the western portion, as well as oak openings and barrens. Smaller areas of aspen-oak land and brush prairie were also found in the search area.

Present Day Vegetation

The Minnesota River valley remains a refuge for important native plant communities in a largely agricultural and developed region. The Minnesota County Biological Survey (MCBS, now known as the Minnesota Biological Survey) has mapped just over 100,000 acres of native plant communities in the Minnesota River counties, or about 2% of the counties’ total acreage. Of that amount, about 65,000 acres, or 65%, occurred within one mile of the Minnesota River valley. The 2007 MCBS report, *Native Plant Communities and Rare Species of the Minnesota River Valley Counties*, identifies the most prevalent native plant communities in the valley and adjacent uplands.

The most prevalent native plant communities in the river valley consist of various types of hardwood forest. Most common are the mesic hardwood forests – these are upland communities on moist soils, usually in settings protected from fire. They are dominated by continuous canopies of deciduous trees, including sugar maple, basswood, bur oak, northern red oak, and green ash. Many of the region’s larger forest remnants are on the steep slopes of river valleys or stagnation moraines, areas unsuitable for cultivation or development.

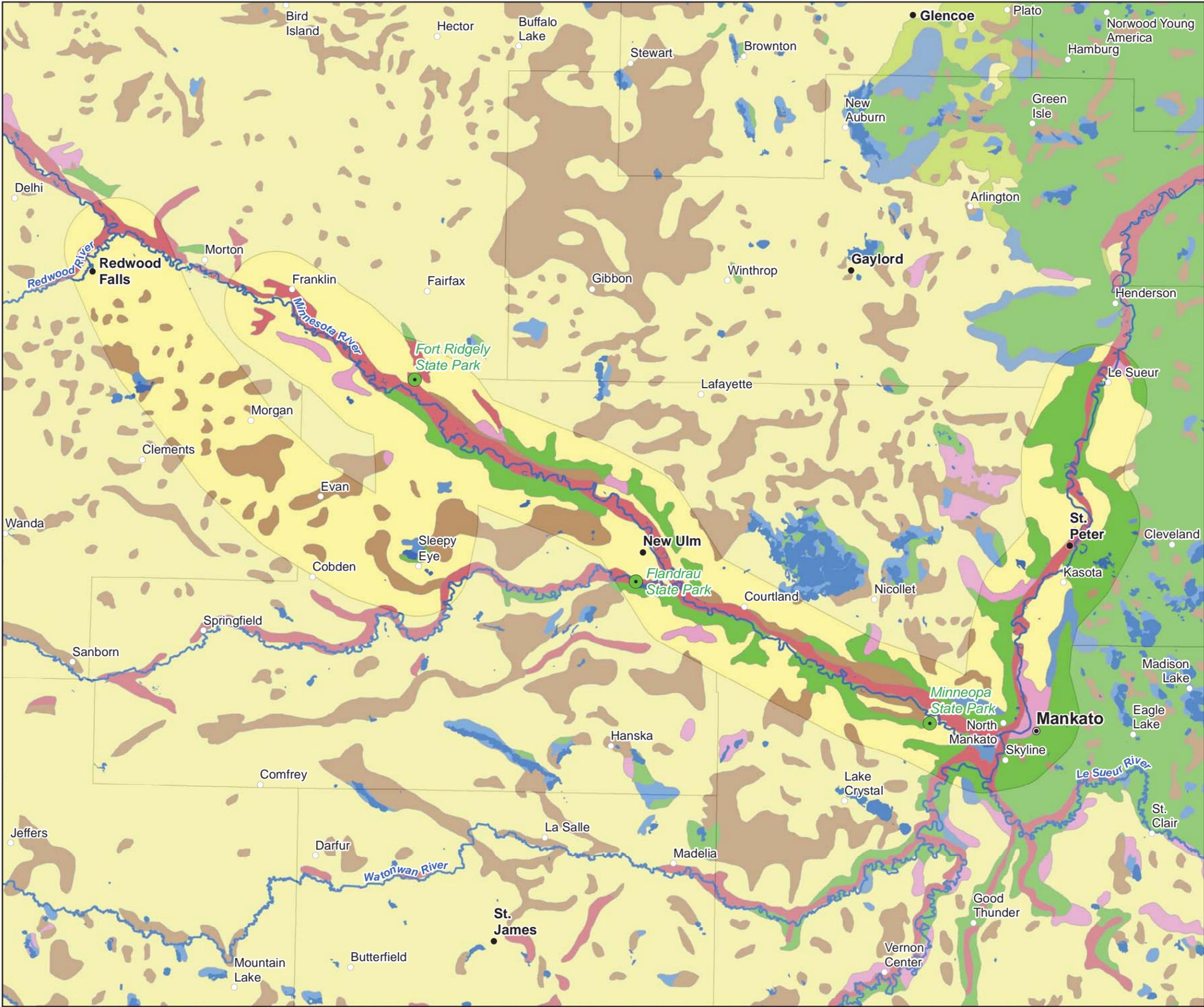
Fire-dependent forest communities tend to occur on steep south- and west-facing slopes on excessively drained soils. Some examples include areas near Franklin in Renville County, along the Blue Earth River southwest of Mankato, and in a few small pockets on the east side of the Minnesota River in Le Sueur County. Historically, fires were common in these areas, but these woodlands have been more recently subject to grazing.

George Featherstonhaugh describes prairie fires while traveling up the Minnesota River in 1835:

“When night fell, the prairies both north and south of us showed themselves brilliantly on fire, though perhaps eight or ten miles off. Before we lay down I pointed out to Milor [his Dakota translator] the danger of our situation encamped in high, thick grass; and it was evident, that, if the wind should change, the fire might gain too rapidly upon us... We were all much too fatigued to keep up a perpetual vigilance, and having fallen into a profound sleep, were not aware that a high wind had arisen about two in the morning, which, driving the flames with wonderful velocity, had set everything on fire down to the water’s edge except the low bottom where we were, and which was saved by the grass being rather green and wet. The men, who were awake by the fire roaring within two or three hundred yards of us, rose in alarm...”
(Featherstonhaugh 1970)

Minnesota River State Trail

Figure 22: Presettlement Vegetation



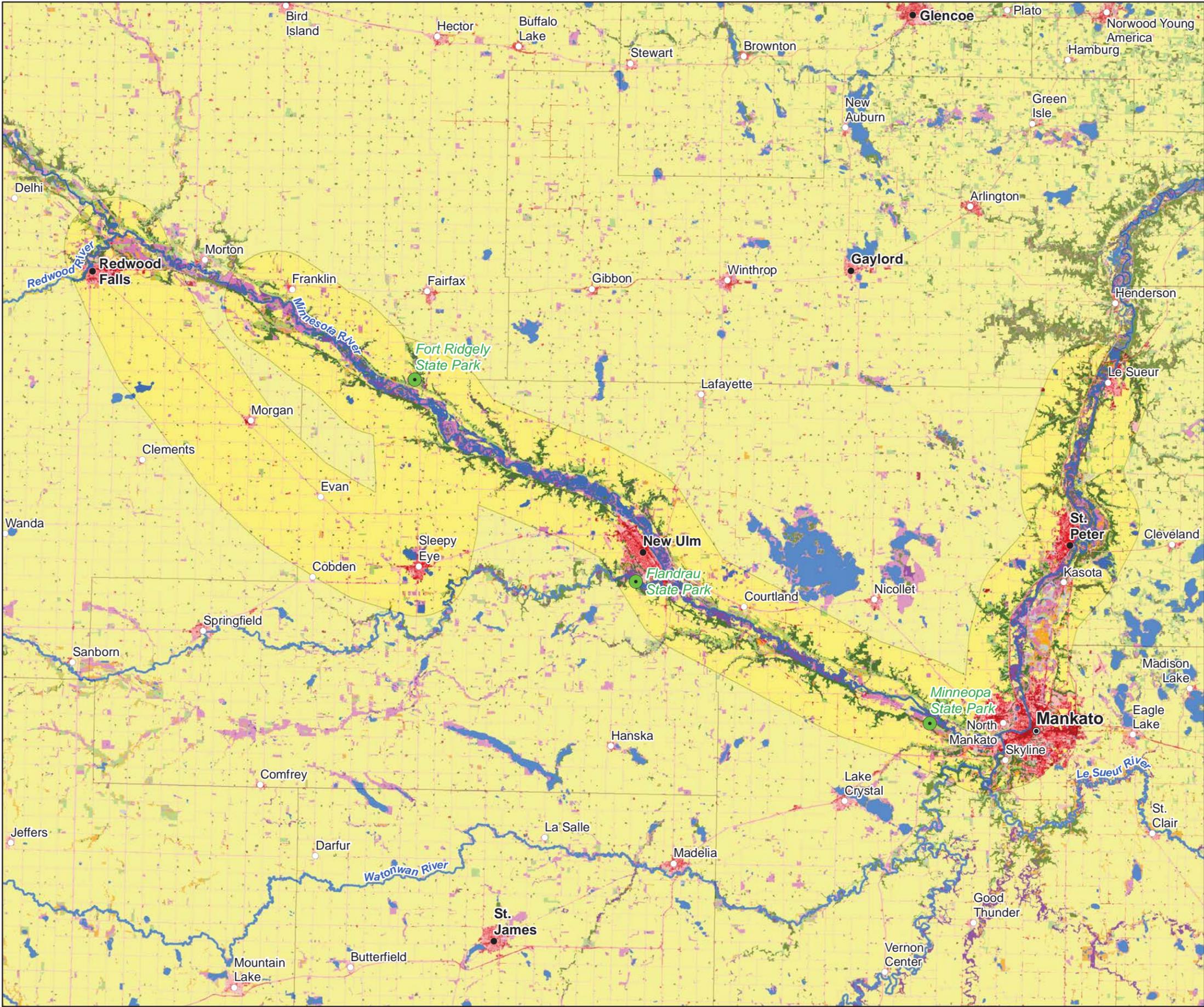
Legend

- State Park
- Trail Search Corridor
- Aspen-Oak Land
- Big Woods - Hardwoods
- Brush Prairie
- Conifer Bogs and Swamps
- Lakes (open water)
- Oak openings and barrens
- Prairie
- River Bottom Forest
- Undefined
- Wet Prairie



Minnesota River State Trail

Figure 23: Land Cover



Legend

- State Park
- Trail Search Corridor
- NLCD 2011 Land Cover Class**
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands



Floodplain forest dominates in much of the flood plain of the Minnesota and its major tributaries, consisting primarily of silver maple, interspersed with scattered, taller cottonwoods and other trees. Moderate to high quality floodplain forest areas were identified within many of the Minnesota River's meanders throughout the trail search corridor.

Maps showing locations of Native Plant Communities and Rare Species throughout trail corridor counties are provided online by the [Division of Ecological and Water Resources](http://www.dnr.state.mn.us/eco/mcbs/maps.html) (www.dnr.state.mn.us/eco/mcbs/maps.html).

According to the *Native Plant Communities* report (DNR 2007a), "Some large forests within or on the edge of the prairie region were divided into numerous small woodlots that have been managed for firewood and lumber by several generations of farm families. Examples of these forests occur along the Cottonwood River in Brown County and the Rush River in Sibley County."

On the uplands above the river valley, agriculture is the predominant land use, as shown in [Figure 23](#). Remnant stands of tallgrass prairie are rare, but dry hill prairies occur along blufftops. These are described as dry to dry-mesic prairies on well-drained soils formed in glacial till on slopes and hilltops. Dry hill prairie is most prevalent between Franklin and New Ulm on south-facing slopes on the north side of the Minnesota River valley.

A significant feature of the river valley in Redwood and Renville counties is the landownership pattern. As described by Great River Greening (2010), "The caretakers of this landscape since the homesteading days of the 1860s have been the grass-fed cattle ranching families, who utilized the unique areas that were too rocky or difficult to farm as grazing land for their cow/calf herds. The landscape was fragmented into rather large blocks – most in excess of 160 acres and some in excess of 600 acres – that served as the foundation for these ranchers.... The majority of these ranches are now rented to others."

Vegetation Management Recommendations

Recommendation 1: *Avoid threatened, endangered, or special concern species and high quality plant communities, as defined by the Minnesota County Biological Survey (MCBS) maps.*

Recommendation 2: *The trail can be a tool for improving habitat quality by decreasing edge and increasing connectivity.*

- *The trail can be used to smooth edges by restoring the vegetation of the trail corridor to make a more regular edge.*
- *The trail can be used to connect patches of natural areas. Vegetation within the corridor should be planted and managed to encourage a contiguous habitat type.*

- *The trail can be used to enlarge existing natural habitats.*
- *Some native plant community management may include cooperative efforts with adjacent land owners.*

Recommendation 3: *Restore, or if necessary, establish native woodland, prairie, or wetland along the trail to supplement native plant communities already present in the valley, utilizing locally sourced seed and plant stock.*

Recommendation 4: *Control the spread of invasive species; trail corridors are especially vulnerable through maintenance operations such as mowing and the island effect from adjoining parcels of land.*

Recommendation 5: *Trail alignment should avoid fragmentation of high quality plant communities.*

Recommendation 6: *Vegetation should be used to screen unsightly areas, deter trespassing, and to assist in retaining snow cover on the treadway, where appropriate.*

Water Resources, Recreation and Fisheries

Minnesota River

The Minnesota River State Trail search area falls completely within the Minnesota River Basin. The Minnesota River flows for 318 miles from Big Stone Lake on the South Dakota border to its confluence with the Mississippi River at Fort Snelling. The river basin encompasses close to 20 percent of Minnesota’s landmass, draining 16,770 square miles or roughly 10 million acres in Minnesota, along with small portions of northern Iowa and eastern South Dakota.

The Minnesota River Basin is made up of twelve major watersheds (see [Figure 24](#)). The trail search area includes portions of the Cottonwood River, Watonwan River, Blue Earth River and Le Sueur River watersheds, as well as the Middle and Lower Minnesota River watersheds.

The river segment between Lac Qui Parle Dam and Franklin is designated as one of Minnesota’s six Wild and Scenic Rivers, and the entire river is designated as a State Water Trail for canoes and kayaks, with maps and trail guides available. Throughout the trail search corridor, the Minnesota River is generally calm with few rapids.

Water quality remains a challenging issue for the Minnesota River, which is widely regarded as one of the most polluted rivers in Minnesota. Data collected by local, state, and federal agencies indicate that the Minnesota River and its tributaries have elevated sediment and nutrient concentrations and high bacteria counts. Sediment can contribute to turbidity, which reduces water



clarity and negatively impacts aquatic life. Sediment sources vary from upland to near-channel sources such as ravines, bluffs, and streambanks, as well as impervious areas such as parking lots, roads, and driveways. Nutrients can stimulate the growth of living organisms such as algae, and this increase in organic matter may also contribute to increased turbidity levels, especially during low flow periods.

The Minnesota Pollution Control Agency (MPCA) is responsible for preparing Total Maximum Daily Load (TMDL) studies to achieve state water quality standards. A TMDL is a calculation of the maximum amount of pollutant that a water body can receive and still meet water quality standards or support designated uses such as fishing, swimming, or water supply. TMDLs address different pollutants, such as phosphorus, sediment, nutrients, and bacteria. TMDLs were established for the Lower Minnesota River for dissolved oxygen in 2004; a study of 18 river reaches for turbidity is currently in process. Similar studies have been completed for many of the Minnesota's tributaries.

Water quality has improved in recent years in the lower reaches of the Minnesota River, indicating improvement in wastewater treatment. Many basin communities have upgraded their wastewater treatment systems or installed new ones since 2000. The amount of phosphorus released annually into the Minnesota River declined by 52% between 2001 and 2011, falling below the 2015 threshold established for phosphorus.

In August 2012, MPCA staff monitored the Minnesota River to see if the hot, dry summer caused low dissolved oxygen in a 20 mile stretch of the river, which has been a problem in the past under similar conditions. The results indicate that dissolved oxygen levels are good and the river is supporting fish and other aquatic life even during stressful environmental conditions like low flow and high temperatures.

The Minnesota River supports diverse fish populations. Flathead catfish, channel catfish, walleye, northern pike, smallmouth bass, and shovelnose sturgeon can be found along this stretch of the river.

Blue Earth River

The Blue Earth River runs for 108 miles through Faribault and Blue Earth counties and flows into the Minnesota River near Mankato. Only a very small portion of the Blue Earth River, near its confluence with the Minnesota River, is within the trail search corridor. The river's landscape is made up of wooded bluffs and rocky outcrops. Swift rapids followed by quiet pools are characteristic of the Blue Earth River, making it good for paddling and angling. Small mouth bass, carp, walleye, northern pike, and channel catfish can be found in the river.

Minnesota River State Trail Master Plan

The Blue Earth River begins in northern Iowa and joins the West Branch Blue Earth River in Faribault County in southern Minnesota. From there, it flows 108 miles northwardly in a winding course through eastern Faribault County into Blue Earth County, past the cities of Blue Earth, Winnebago, and Vernon Center to Mankato, where it enters the Minnesota River.

The Blue Earth River watershed area is about 1,550 square miles or 992,034 acres. The Blue Earth River, along with the city and county, were named for former deposits of bluish-green clay, no longer visible, along the banks of the river. The combination of erodible soils and higher flows has led to greater levels of erosion and a dramatic increase in sediment levels in the river system since European settlement in the late 1800s. Sediment makes the water cloudy and hurts aquatic life such as fish.

The vast majority of the Blue Earth River watershed is farmland. The Rapidan Dam, constructed for the purpose of hydroelectricity generation in 1910, impounds the river 12 miles upstream from its mouth. Above the Rapidan Dam, the Blue Earth meanders through farmland banks and bluffs from the town of Blue Earth to the lake impounded behind the Rapidan Dam. Below the Rapidan Dam, the river runs through a gorge, which features canyons, waterfalls, great limestone cliffs, and some rapids.

By volume, the Blue Earth is the Minnesota River's largest tributary, accounting for 46% of the Minnesota's flow at the rivers' confluence. It also is a major contributor of sediment to the Minnesota River. Several stream and river segments in the watershed violate state water quality standards due to high bacteria levels and turbidity. Erosion from ravines and bluffs in the Blue Earth and Le Sueur watersheds contribute high levels of sediment to the Minnesota River. Clean Water Funds are being used for prioritization and categorization of erosion problem areas and design of ravine and bluff stabilization projects.

Cottonwood River

The Cottonwood River is located in southwestern Minnesota in the counties of Brown, Cottonwood, Lyon, Murray, and Redwood. It begins near Balaton in southwest Lyon County and flows about 150 miles east to the Minnesota River near New Ulm. The watershed area is approximately 840,000 acres or 1,313 square miles.

The entire Cottonwood River watershed has about 88% (739,000 acres) of the land in cultivation, 6% of the land in grassland, 1% is wetlands or water, and just under 3% is still wooded. The remainder of the land is farmsteads, gravel pits, rural development, and other land uses.

The topography is that of a rolling upland area. Altitudes descend from west to east with the Coteau des Prairies serving as a watershed divide. Natural

Franklin to Le Sueur



A family of four paddles through some rapids on the Blue Earth River. Photo courtesy of Peggy Kreber

drainage patterns in the area were established by valleys formed from glacial meltwaters. End moraines, which were formed during the recession of the last glacier, are the most prominent features.

About 58 river miles, from Springfield to New Ulm, are canoeable and have no major rapids. Maple, basswood, and hackberry trees can be found on the steep slopes while oaks and red cedar can be found on the sunny slopes.

Le Sueur River

Located in south central Minnesota, the Le Sueur River flows 111 miles through a gently rolling landscape, mostly farmland, until it cuts down through high bluffs to the Blue Earth River. The Le Sueur, which is named for a French explorer, starts in Freeborn County, flowing north and west through parts of Waseca and Blue Earth counties. A total of 711,838 acres drain to the Le Sueur, and an extensive ditch and tile system facilitates movement of water throughout the watershed.

Once covered with hardwood forests and long-grass prairies, the vast majority of the watershed is now planted to crops such as corn and soybeans or used for livestock production. Lakes and wetlands currently comprise 3% of the watershed. About 89% of the wetlands have been drained since European settlement. Many of the lakes are shallow and provide wildlife habitat while others are deeper and popular for recreation. For paddlers, the Le Sueur River offers a twisting route from Saint Clair through Hungry Hollow and joins the Blue Earth River near the Red Jacket Bridge, which is part of a popular bike trail. This part of the river offers many spectacular cliffs and lots of wildlife.

Water monitoring shows some modest improvements in water quality in the Le Sueur River over the past 10 years, though several sections of the river and its streams continue to suffer from many problems, including turbidity, low dissolved oxygen, and excess nutrients. The Le Sueur watershed is a major source of sediment and nutrients to the Minnesota River.

Watowan River

The Watowan River is also a tributary of the Blue Earth River. Rising in central Cottonwood County, it flows 113 miles through flat farmland in northern Watowan and western Blue Earth counties, past the city of Madelia, until it flows into the Blue Earth River about 8 miles southwest of Mankato. The Watowan River watershed area is approximately 878 square miles or 561,620 acres.

The Watowan River offers a peaceful and scenic float for paddlers until the rapids generally increase as the river nears its confluence with the Blue Earth River above the Rapidan dam. In Madelia, Watona Park is nestled along the

banks of the Watonwan River and features many amenities, including a campground.

Much of the river has been straightened and altered to provide for drainage of farmland and for flood reduction. Though the vast majority of the Watonwan watershed is used for farming, mainly corn and soybeans, small lakes and wetlands provide significant habitat for waterfowl.

Like most areas of the Minnesota River Basin, the soils in the Watonwan River watershed are highly erodible. Changes in the climate and landscape have resulted in higher flows in the river system. The combination of erodible soils and higher flows has led to greater levels of erosion and a dramatic increase in sediment levels in the river system since European settlement in the late 1800s.

Lakes

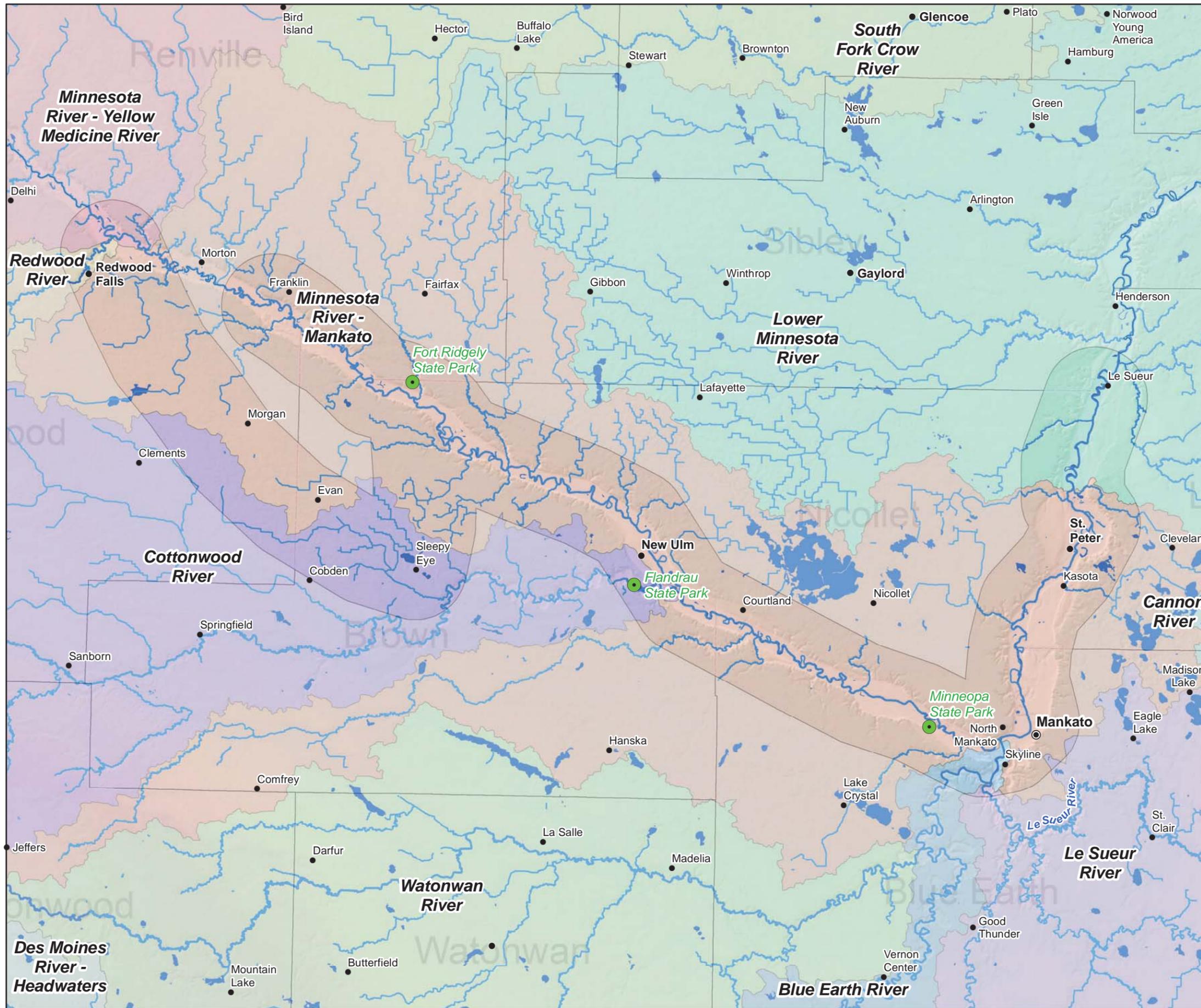
One of the most important breeding areas for ducks in the Minnesota River Basin is Swan Lake, located in Nicollet County. Swan Lake is over 10,000 acres and called the largest prairie pothole marsh in North America and home to many migratory birds and waterfowl including mallard ducks. From the turn of the century into the 1950s, a large number of market hunters traveled to Swan Lake to harvest waterfowl for restaurants as far away as Chicago. Swan Lake remains a favorite destination for duck hunters with the duck opener attracting over a thousand hunters.

In the 1950s, a dramatic transformation occurred on the landscape surrounding Swan Lake when pasture and hayfield used for dairy farming were plowed under and planted for row crops. This transformation also included the installation of field drain tile and digging of a countywide ditch network to help increase yields of corn and other crops, effectively changing the watershed's hydrology. All of this new drainage reduced the size of the Swan Lake Watershed from 27,000 acres to 16,500 acres. Duck production fell from 18,000 in 1947 to less than 100 in 1984. Two years later the DNR initiated a ten-year Swan Lake Area Wildlife Project to increase upland habitat and develop an effective water management plan.

According to the Swan Lake Restoration Project Final Report, it has nearly accomplished its goal of producing 10,000 ducks per year; estimates suggest that the lake annually produces between 6,000-8,000 ducks. Large numbers of ducks use the lake as staging area during their fall migration. Improvements of the water control and drainage systems have allowed the water level of Swan Lake to be managed in a timely fashion.

Minnesota River State Trail

Figure 24: Watersheds

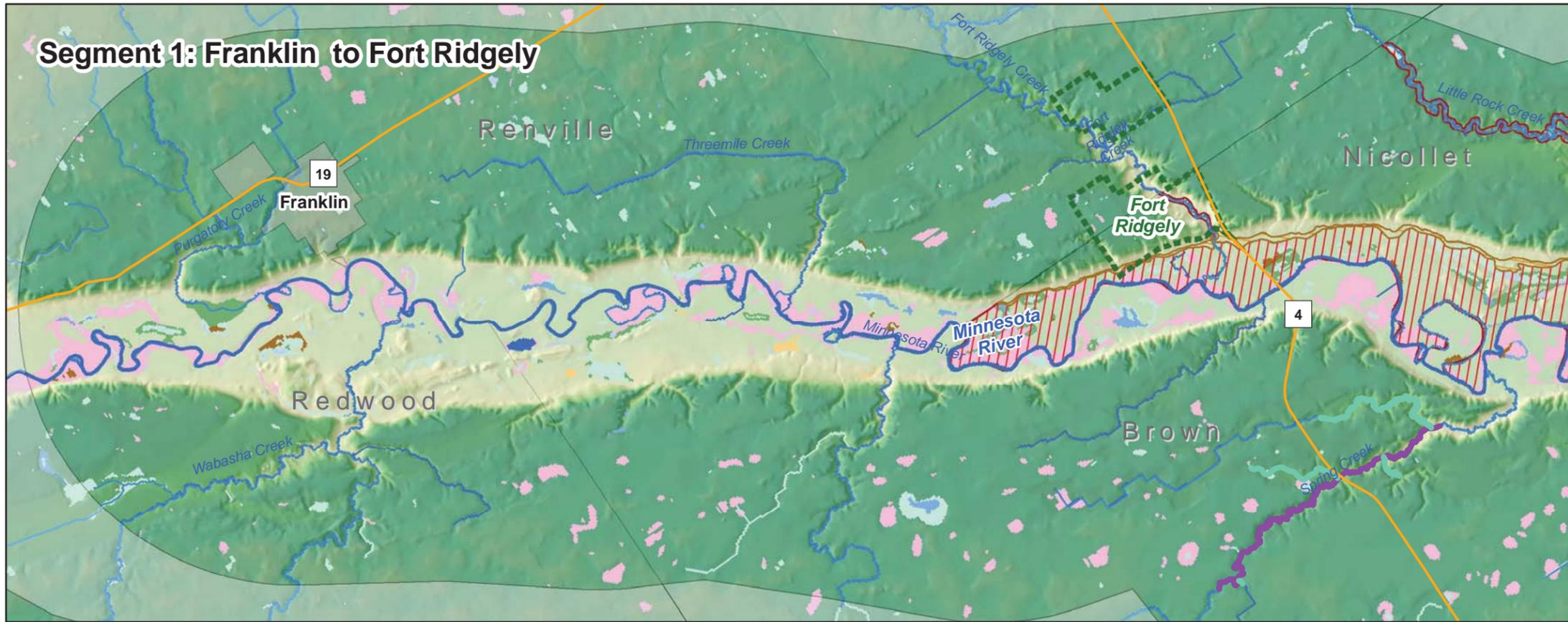


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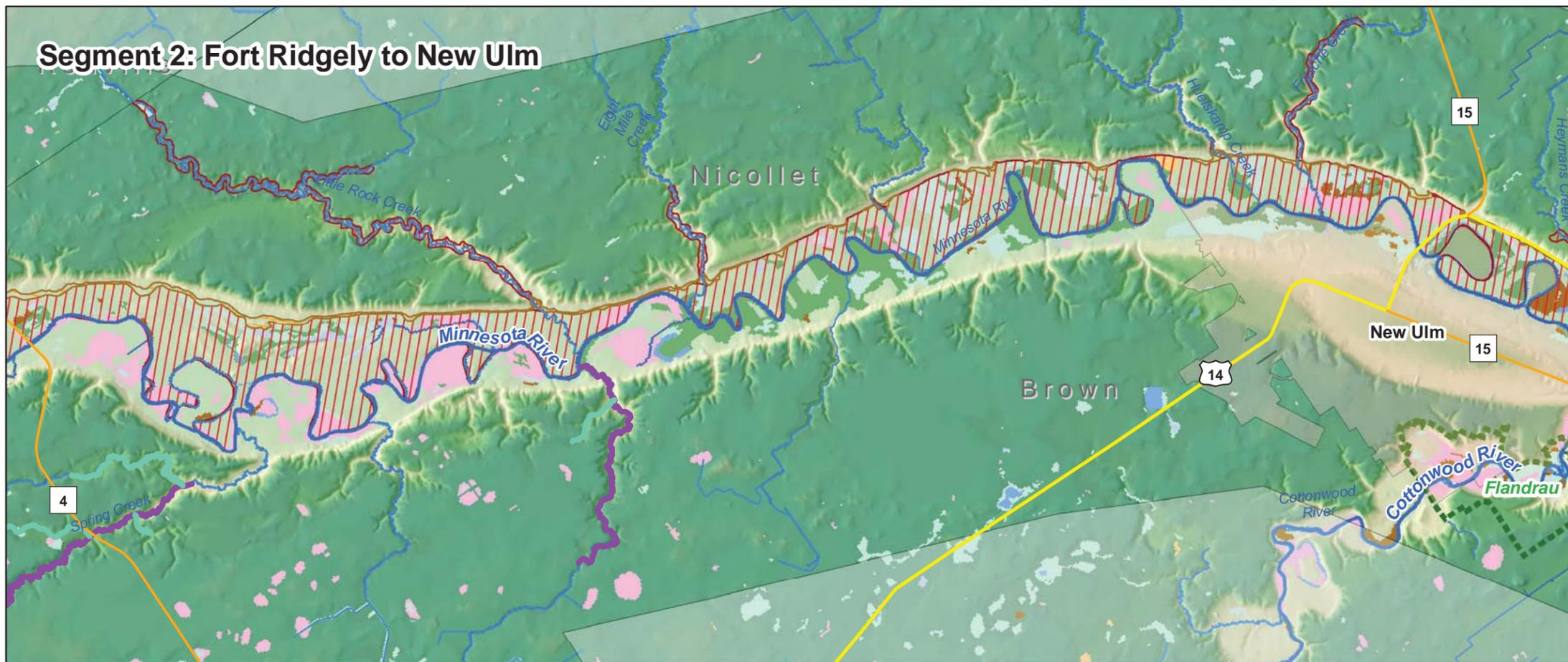
-  Trail Search Corridor
-  State Park
-  Blue Earth River
-  Cannon River
-  Cottonwood River
-  Des Moines River - Headwaters
-  Le Sueur River
-  Lower Minnesota River
-  Minnesota River - Mankato
-  Minnesota River - Yellow Medicine River
-  Redwood River
-  South Fork Crow River
-  Watonwan River



Segment 1: Franklin to Fort Ridgely



Segment 2: Fort Ridgely to New Ulm



Minnesota River State Trail

Figure 25: Hydrology and Wetlands - Segments 1 and 2

Legend

- Trail Search Corridor
- US Trunk Highways
- MN Trunk Highways
- Municipal Boundary
- State Park Statutory Boundary
- Designated Trout Stream
- Protected Tributary to Designated Trout Stream
- 100 Year Floodplain (Incomplete Data)
- 500 Year Floodplain (Incomplete Data)

National Wetlands Inventory

- Seasonally Flooded Basin or Flat
- Wet Meadow
- Shallow Marsh
- Deep Marsh
- Shallow Open Water
- Shrub Swamp
- Wooded Swamp
- Bog
- Riverine System



MN Department of Natural Resources
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September 2015

Minnesota River State Trail

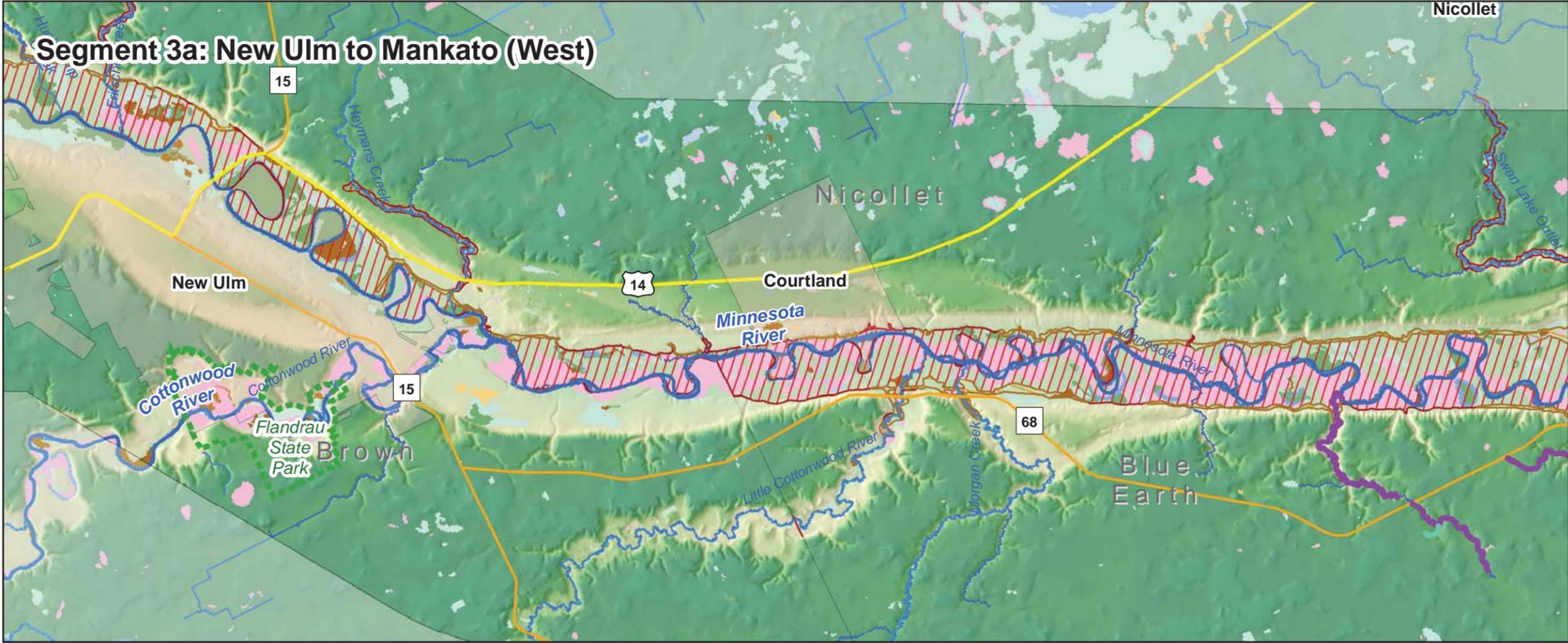
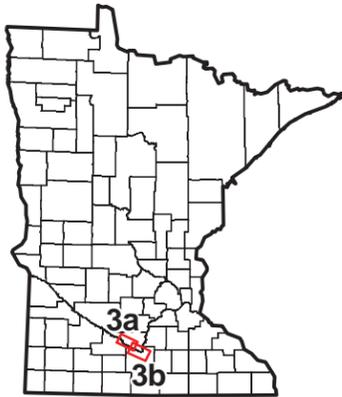
Figure 26: Hydrology and Wetlands - Segment 3

Legend

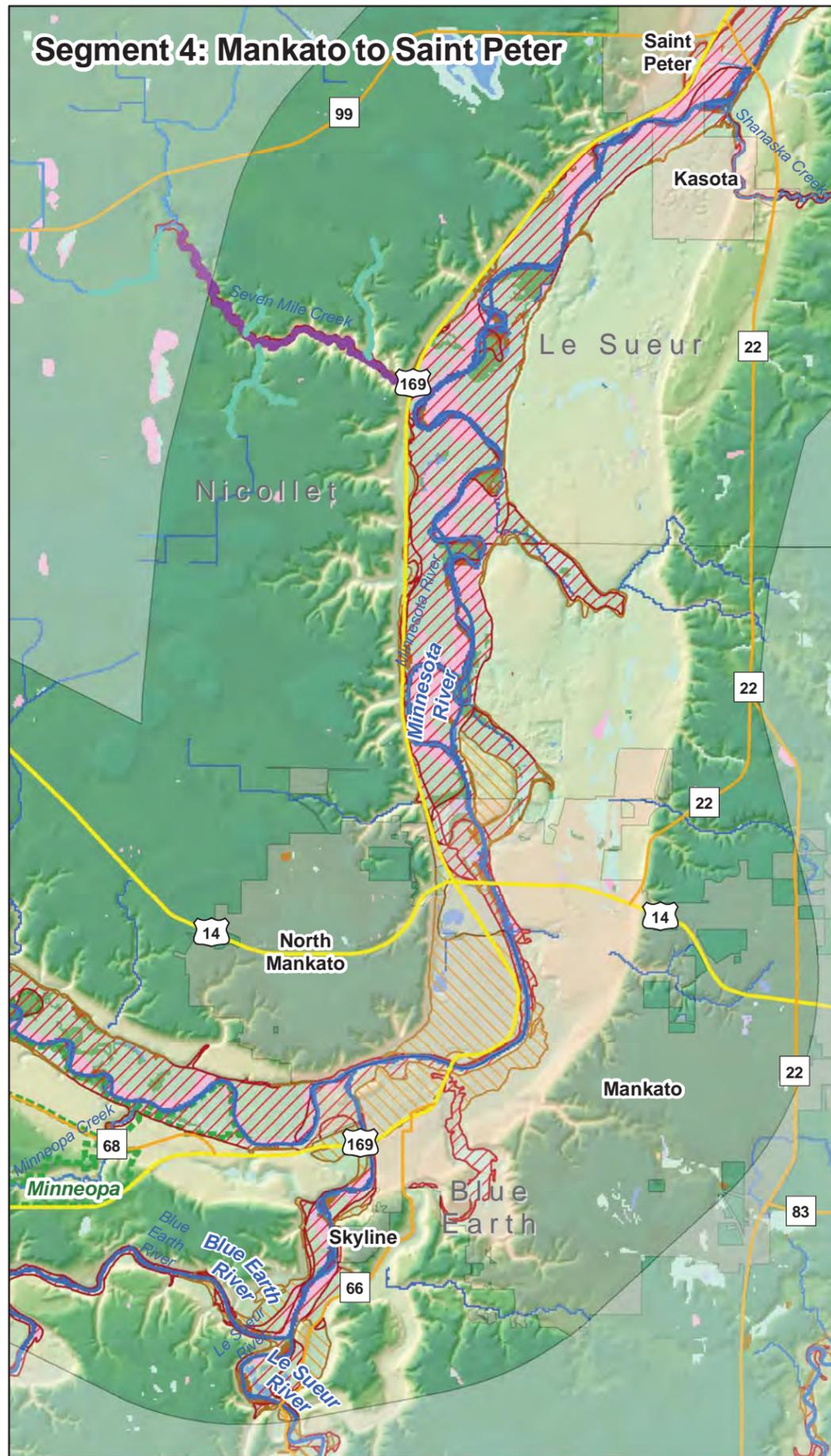
- Trail Search Corridor
- US Trunk Highways
- MN Trunk Highways
- Municipal Boundary
- State Park Statutory Boundary
- Designated Trout Stream
- Protected Tributary to Designated Trout Stream
- 100 Year Floodplain (Incomplete Data)
- 500 Year Floodplain (Incomplete Data)

National Wetlands Inventory

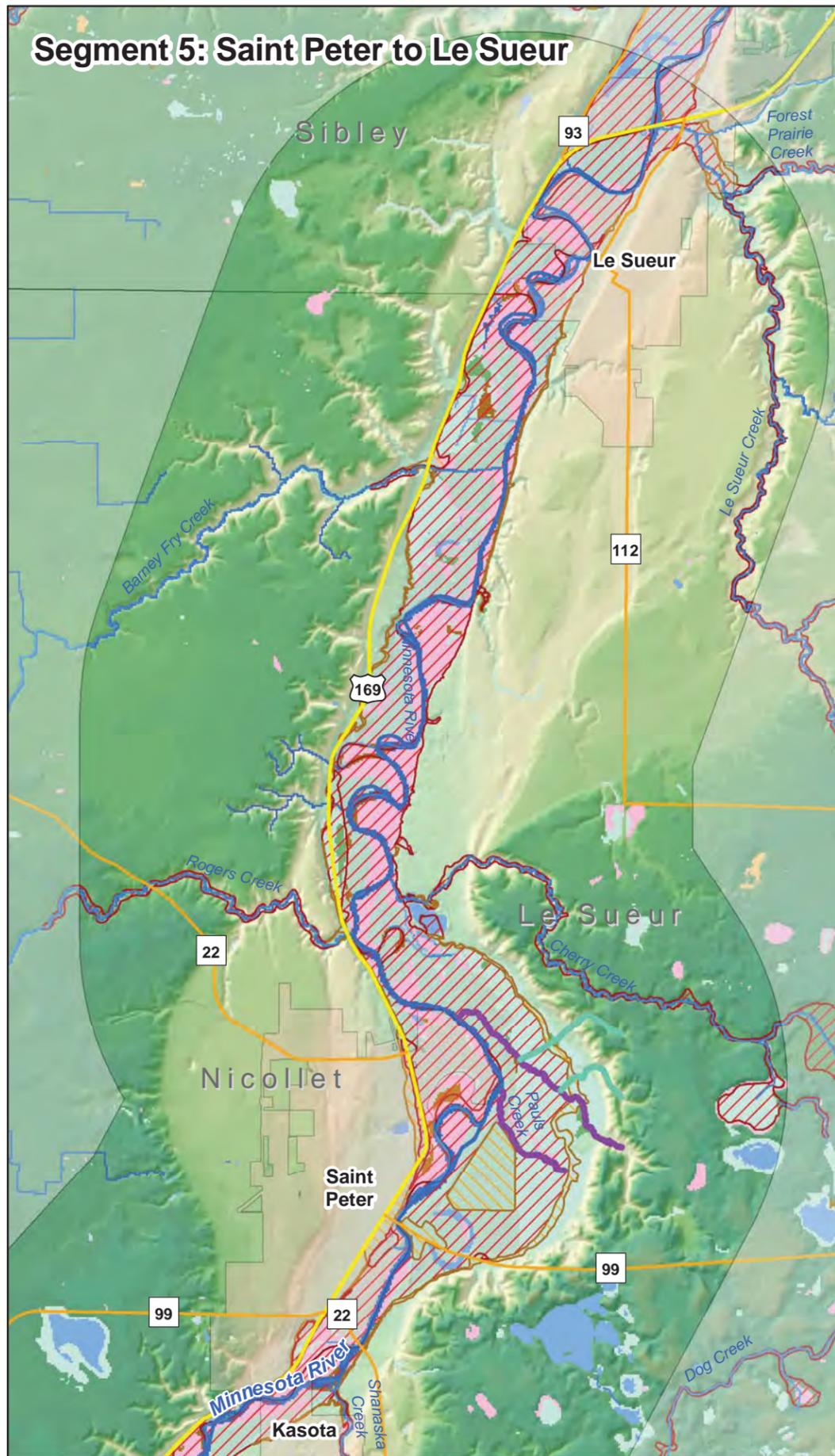
- Seasonally Flooded Basin or Flat
- Wet Meadow
- Shallow Marsh
- Deep Marsh
- Shallow Open Water
- Shrub Swamp
- Wooded Swamp
- Bog
- Riverine System



Segment 4: Mankato to Saint Peter



Segment 5: Saint Peter to Le Sueur



Minnesota River State Trail

Figure 27: Hydrology and Wetlands - Segment 4 and 5

Legend

- Trail Search Corridor
- US Trunk Highways
- MN Trunk Highways
- Municipal Boundary
- State Park Statutory Boundary
- Designated Trout Stream
- Protected Tributary to Designated Trout Stream
- 100 Year Floodplain
- 500 Year Floodplain

National Wetlands Inventory

- Seasonally Flooded Basin or Flat
- Wet Meadow
- Shallow Marsh
- Deep Marsh
- Shallow Open Water
- Shrub Swamp
- Wooded Swamp
- Bog
- Riverine System



0 0.75 1.5 3 Miles



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September 2015

Wetlands

A variety of wetland types are found within or near the trail search corridor, and are shown in [Figures 25 to 27](#). The US Fish and Wildlife Service and DNR identify eight primary types of wetlands under the “Circular 39” classification system. These include both Public Waters Inventory (PWI) wetlands, regulated by the DNR, and non-PWI wetlands, regulated by local governments under the Wetland Conservation Act. Wetlands provide important wildlife and fisheries habitat, erosion and flood control, and ground water recharge. It is estimated that about 95 percent of Southwest Minnesota’s wetlands have been lost since settlement, most of them drained in the early 1900s to provide more arable land. Wetlands found within the trail search corridor include seasonally flooded basins or flats (these predominate in upland areas), shallow marshes, and wooded swamps.

Historically this area was dotted with prairie wetland complexes. As European settlers moved into the region and started to farm the land, the wetlands were drained by systems of drainage tiles and drainage ditches. This extensive drainage created a very rich and productive agricultural landscape, but it resulted in the loss of approximately 2-3 million acres or 90 percent of the historic prairie wetlands.

It should be noted that the available wetland inventories are not complete and may contain some inaccuracies. All wetlands must be delineated in the field prior to any development. Generally speaking, development should avoid wetlands if possible, and if this cannot be done, mitigation measures must be provided.

Flood plains

Much of the Minnesota River valley between the bluffs lies within the 100-year flood plain, defined as that land that is covered by the “100-year” or “regional” flood – that is, a flood that has a 1 percent chance of occurring in any given year. Flooding is a natural occurrence of a river’s riparian zone and provides many benefits, including groundwater recharge, settling out sediment and supporting valuable wildlife habitat. Flooding only becomes a concern to people when they impact the river’s floodplain, either by adding structures or planting crops. People have added to flooding problems primarily by intruding on the flood plain and altering the natural channels of the Minnesota River and its tributaries. Development and land use changes in the watershed also increase the amount of impervious surface on the terrain and displace natural water storage on the landscape.

The Minnesota River has experienced many major floods, including events in 1881, 1952, and 1965, considered the most devastating flood to date. Recent flooding in September, 2010, caused significant damage to Highway 169

between Saint Peter and Le Sueur, closed many roads, and damaged property and crops.

Because of the large proportion of the valley floor located within the 100-year flood plain, it is unlikely that any trail alignment within the valley could entirely avoid the flood plain. Trail development within flood plains must be undertaken with care, so that flood elevation levels are not increased and so that the trail itself is designed to withstand periodic flooding.

Water Resources Recommendations

Recommendation 1: *Seek development of a trail alignment that avoids and minimizes additional disturbances to wetlands, flood plains, and other sensitive hydrological features.*

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

Recommendation 3: *A trail too close to the river may be subject to bank failure affecting the alignment over time. Trail location must consider the potential impact of bank failure as preventing or mitigating this process is costly.*

Recommendation 4: *Connections to the river should be made whenever possible. These connections may include facilities adjacent to the trail designed for shorefishing.*

Recommendation 5: *Interpretive displays should emphasize the historical significance of the river, geological history of the valley, and create an awareness of water quality issues and conservation efforts.*

Wildlife

Mammals

Common mammal species in the trail search area include: white-tailed deer, coyote, beaver, squirrels, raccoons, red and gray foxes, and minks. Prairie animals can be found in the area with more woodland species near the eastern end of the trail corridor.

Birds

The Minnesota River is a major migratory corridor in the Mississippi Flyway. It is a transition zone between the eastern woodlands and western prairie. It is also an important area for north-south migration (Janssen n.d.). The numerous WMAs, SNAs, and WPAs provide important habitat for birds.



A beaver, *Castor canadensis*, feeds on a sapling.

Common birds in the area include: various songbirds, eastern bluebird, western meadowlark, yellow shafted flicker, tree sparrows, king birds, red-winged blackbird, red-tailed hawks, bald eagle, wild turkey, ring-necked pheasant, owl, and Canada geese.

Reptiles and Amphibians

Many species of amphibians can be found in the area. These include the eastern tiger salamander, mudpuppy, American toad, great plains toad, and seven species of frogs. Frog species include Cope’s gray treefrogs, gray treefrogs, boreal chorus frogs, American bullfrogs, green frogs, northern leopard frogs, and wood frogs.

Turtle species in the area include snapping turtle, painted turtle, northern map turtle, false map turtle, smooth softshell turtle, spiny softshell turtle, and Blanding turtle. Blanding’s turtles are a threatened species in Minnesota and they are most impacted by habitat loss and degradation of uplands and wetlands, and road mortality. Smooth softshell turtles are a species of special concern in Minnesota.

Numerous species of snakes can be found in the search area. Common species include North American racers, plains hog-nosed snake, milksnakes, northern watersnake, western foxsnake, gophersnake, Dekay’s brownsnake, red-bellied snake, plains gartersnake, and common gartersnake. Other reptile species found in the search area include common five-lined skinks and prairie skinks.

Fish

The Minnesota River supports a large, diverse population of fish. The largest populations are carp and other riverine fish, but many game fish can be found. Common game fish species found in the Minnesota River include walleye, sauger, white bass, northern pike, smallmouth bass, and shovelnose sturgeon. Backwater areas can occasionally have bluegill and black crappie. Large channel and flathead catfish can be also be found.

Numerous designated trout streams can be found in the search area. These streams include Spring Creek, Ramsay Creek, John’s Creek, Seven Mile Creek, Paul’s Creek, and several unnamed streams.

Angling is a popular and important recreational activity on the Minnesota River. The DNR Division of Fish and Wildlife conducts creel surveys to determine angling use and satisfaction, as well as fish population assessments to determine the biological health of the river. The last creel survey was conducted in 1998, and found that the most sought-after species were channel catfish and flathead catfish. Carp, channel catfish, and freshwater drum were the most frequently caught fish out of 19 species caught by anglers. Angler satisfaction with the numbers and sizes of fish caught was low.



Green Frog, *Rana clamitans*.

The fish community was sampled in 2004 to assess its biological integrity. This type of sample uses low-frequency electrofishing, gill nets, and trot lines. The catch is scored based on factors such as the number and type of species, feeding and reproductive behavior, tolerance to turbid or polluted water, age groups and deformities. The river reaches within the trail study area all received scores between 32 and 36, indicating “fair” biological integrity (60 is the highest possible score). (See [DNR Section of Fisheries](http://www.dnr.state.mn.us/areas/fisheries/hutchinson/minnesotariver/surveys.html) for both surveys, www.dnr.state.mn.us/areas/fisheries/hutchinson/minnesotariver/surveys.html)

Invertebrates – Freshwater Mussels

Freshwater mussels play a vital role in marine ecosystems in Minnesota. These mollusks live on river and lake bottoms and filter oxygen and particles from the water. They modify the habitat around them to make it more suitable for both themselves and other aquatic organisms. Many species serve as important hosts to fish larvae and are critical to fishery success. These invertebrates are also an important food source for many other animals such as several species of fish, muskrats, and raccoons.

Mussel populations in Minnesota are threatened by dams fragmenting river connections; stream channelization, dredging, and streambed destabilization; commercial harvesting; non-point and point water pollution and sedimentation; and zebra mussel infestations in the Mississippi River. Fifteen mussel species of special concern have been found in the trail search area. The primary causes for mussel decline in the Minnesota River are pollution and habitat degradation (MN DNR 2013c).

Species in Greatest Conservation Need

Species in Greatest Conservation Need (SGCN) have been identified and are classified as such on a statewide basis. “Key habitats” are the habitats or native plant communities that SGCN rely on; these are defined by ECS subsection. SGCN include only animal species that meet the following criteria:

- 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 (i.e. invasive species);
- Species with certain characteristics that make them vulnerable (i.e. highly localized distribution);
- Species with stable populations in Minnesota that are declining outside of Minnesota.



A peregrine falcon, *Falco peregrinus*, calls while in flight. Peregrine falcons are listed as threatened in Minnesota. Photo courtesy of Carrol Henderson

The trail search corridor lies mostly within the Minnesota River Prairie subsection, with a small portion on the eastern side of the Minnesota River in the Big Woods subsection.

There are 116 SGCN in the Minnesota River Prairie subsection, 52 of which are listed as federal or state endangered, threatened, or of special concern. The majority of these are bird species; mollusks, insects, and mammals are also common. This subsection is a major migratory corridor in the Mississippi Flyway and is also an important area for nesting prairie ducks. The area includes many state WMAs and SNAs and federal WPAs that are important for SGCN. Key habitats in this subsection include prairie, non-forested wetlands, shallow lakes, cliff/talus areas, and rivers.

The Big Woods subsection has 121 SGCN, including 55 species that are federal or state endangered, threatened, or of special concern. Many of these species are birds, mollusks, and fish. This subsection is important habitat for woodland birds and for species that rely on the Minnesota River. Kasota Prairie SNA is an important area for SGCN within the search corridor.

A complete list of SGCN and key habitats by subsection is included in *Minnesota's State Wildlife Action Plan: Tomorrow's Habitat for the Wild and Rare* (www.dnr.state.mn.us/cwcs/index.html).

Threatened, Endangered, and Special Concern Species

The Minnesota Natural Heritage Information database was used to identify animal and plant species that are threatened, endangered, or of special concern within the vicinity of the trail search area, as well as native plant community occurrences that are recorded in the Natural Heritage Information System. These species are protected by state law, and protecting their habitat must be considered during trail planning, development, and maintenance. These plant and animal species, along with terrestrial plant communities and animal assemblages of concern are listed in [Appendix B](#).

Wildlife Recommendations

Recommendation 1: *Avoid impacts to threatened and endangered species, and avoid or minimize impact to special concern species and natural features in trail planning, development, and maintenance. Parks and Trails Division natural resource staff will keep current with Natural Heritage data, consult with regional plant ecologists and land managers, and perform on-the-ground surveys.*

Recommendation 2: *Avoid critical habitats; manage and enhance habitats, where possible; consider fish and wildlife needs when designing water crossings; and use native species – consistent with the natural communities of the area – when re-vegetating areas disturbed by trail construction and maintenance.*

Recommendation 3: *The occurrence of endangered species was noted within and near the search corridor. The sites of these occurrences will be considered when selecting a trail alignment and no adverse impacts are anticipated by trail development. Interpretation of these species will create an awareness, appreciation, and understanding of their importance among trail users.*

Historical and Cultural Resources

The Minnesota River Valley has seen human presence for thousands of years, as evidenced by the Browns Valley Man find, dated at least 9,000 years ago, in the Upper Minnesota River Valley. Climate changes resulted in shifts from forest to grasslands and back again. Many cultures occupied the Valley, coming and going as the climate and environment changed.

The following section is adapted from the [Minnesota River State Trail Master Plan](http://www.dnr.state.mn.us/input/mgmtplans/parks_trails/trails.html#completed) (www.dnr.state.mn.us/input/mgmtplans/parks_trails/trails.html#completed), prepared by DNR's Division of Trails & Waterways in 2008, and from [A Brief History of Minnesota Archaeology](http://www.osa.admin.state.mn.us/mnarch/mnoverview.html) (www.osa.admin.state.mn.us/mnarch/mnoverview.html) from the Office of the State Archaeologist:

Paleoindian Period, ca. 10,000 to 6,000 BC

This period of time witnessed significant changes in landscape, climate and vegetation in the Minnesota River Valley. Prior to this period, portions of Minnesota were still covered by glacial ice and the river valley as we now know it had not yet been formed. Over a period of several thousand years, Glacial Lake Agassiz began to drain to the south, releasing meltwaters through the Glacial River Warren. This glacial river eventually created the current Minnesota River Valley. As the post-glacial climate warmed, the vegetation during this period changed from tundra and spruce forest to mixed deciduous and coniferous forest, with prairie to the west. The Paleo-Indian tradition is thought to have included small, nomadic bands who hunted large mammals such as the now-extinct woolly mammoth and the giant bison. As early as 10,000 years ago, bison were hunted without the use of horses or bow and arrow.

Archaic Period, ca. 6,000 to 800 BC

The Archaic period in the Minnesota River Valley is characterized by shifting climate and environmental changes. For the first half of the period, the climate gradually became warmer and drier and vegetation became more prairie-like. In the latter part of the period, the climate became cool and moist and the deciduous forest became more prominent, invading from the east. The cultures living at the time are thought to have included both the western prairie inhabitants who hunted bison and the eastern woodland inhabitants who were general hunters and gatherers.

Woodland Period, ca. 800 BC to historic contact

The Woodland period in the region appears to have been associated with incipient plant domestication, but intensive gathering provided the bulk of subsistence needs. Settlement patterns resembled those appearing previously, with particularly intense occupation of stream/lake junctions late in the period. An especially significant technological innovation of the Woodland peoples is the development of ceramics. Earthwork (mound) construction frequently associated with mortuary activity also developed during this period.

Plains Village/Oneota Occupation, ca. 900 AD to historic contact

Evidence of this occupation is reported for areas of southern Minnesota, with the largest identified sites located along the margins of major river valleys or other water bodies. These peoples appear to have developed a blended subsistence strategy based on simple agriculture, gathering, and bison hunting. Crops such as corn, beans, and squash were cultivated. There is evidence of long-distance trading between complex regional cultures. People of this cultural time period located habitation sites on islands, peninsulas, isthmuses of lakes, and terraces above flood plains, which allowed them easy access to floodplain gardens that were easily cultivated and watered.

Dakota People and Culture, ca. 1700 to present

The Dakota have lived in the Lower Minnesota Valley since at least 1700 AD, and were the dominant culture in central and southern Minnesota. Accounts of the Dakota culture are found in the oral histories of the tribes (Mdewakanton, Wahpeton, Sisseton and Wahpekute) and by historical records of European explorers, missionaries, traders, and settlers. In essence, their lives centered on the changing seasons and the resources that were seasonally available in the Minnesota River Valley for use in food, shelter, and clothing.

The Sisseton and the Wahpeton Dakota occupied a territory that was centered on the Minnesota River and extended south in to the Prairie des Coteau region, northwest towards the Big Stone and Traverse lakes areas, and east into the Alexandria Moraine complex of central Minnesota and the Big Woods area.

European Contact

Explorers and fur traders probably made contact with the Dakota in the early 1600s. Religious missionaries were the first to document their encounters with natives in the 1680s. The Dakota way of life was to change forever following the arrival of French and English fur traders to the Minnesota River valley in the early 1700s. Early entrepreneurs set up trading posts and began a growing trade with the Dakota. British, French, and American fur companies developed extensive trade networks and contacts with the Dakota by 1800.

Treaties and Agencies

The United States government had a strong interest in acquiring the lands occupied by the Dakota people. In the early 1800s, several attempts were made to buy Dakota lands through treaties. These efforts were unsuccessful until 1837, when the Dakota agreed to sell about 5 million acres to the federal government for \$1 million. The government did not fulfill its obligations.

The Treaty of Traverse des Sioux, one of our nation’s most significant treaties, was signed on July 23, 1851. On this day the upper bands of the Sioux ceded all of their lands in Minnesota and Iowa in return for a tract of land 10 miles wide along the Minnesota River between Traverse Lake and the Yellow Medicine River. Two weeks later the lower Sioux bands signed a treaty at Mendota. These treaties opened up all Dakota lands west of the Mississippi, except for reservations, to European settlement.

Over 24 million acres of land in Minnesota were ceded in exchange for reservation lands and annuities of goods and money totaling \$3 million to be paid over a 50-year period. This averaged to 12 cents an acre for what is now some of the most productive farmland in the country. The Senate added amendments that weakened the Sioux’s position before the treaty was ratified. Even with these amendments, the terms of the treaty were never entirely honored by the US.

The payments and annuities specified in the treaty were often late and reduced by traders’ claims. In 1862 tribal members convinced Dakota leaders that it was time to rise up. The resulting war lasted about one month but casualties totaled in the hundreds on both sides. The war became the reason the treaty was abrogated and the Dakota were forcibly removed from the river valley.

Settlement

Following the Traverse des Sioux Treaty, settlers rushed to the Minnesota River Valley by the thousands on steamboats. Early settlement was oriented towards the river because it served as the most important transportation corridor of settlers and goods at the time. The first six communities settled in Redwood and Brown Counties were all on rivers (Schmidt and Pratt 2007).

With a rush towards settlement, “wheat production on the river terraces and surrounding prairies of southeastern Minnesota stimulated the prosperity of farmers, and many small “flouring mills” were set up on streams. Flour was a “money” crop that made some people affluent. Ox teams carried wheat through river valleys to market and brought lumber on the return trip” (Waters 1977). With the growing production of wheat in the area, there was a pressure to find suitable locations for mills to process the wheat into flour. Locations along the Minnesota River were searched, and mills were constructed on the Big



Treaty of Traverse des Sioux 1851
©Minnesota Historical Society

Settlement in the Valley
Following the Traverse des Sioux Treaty, settlers rushed to the Minnesota River Valley by the thousands on steamboats. Early settlement was oriented towards the river because it served as the most important transportation corridor of settlers and goods at the time. The first six communities settled in Redwood and Brown Counties were all on rivers (Schmidt and Pratt 2007).

Cottonwood, Blue Earth, Watonwan, Le Sueur, and smaller tributary rivers (Frame, 1977).

The advance of railroads into the valley spurred additional growth. Railroads quickened transport of grains to mills on Saint Anthony Falls in Minneapolis and brought additional goods and settlers to the area. There was a cluster of rail development in the 1910s between Saint Peter and Mankato in an area of concentrated dolomitic limestone quarries. This stone was used to construct the stone arch bridge in Minneapolis, and is still being extracted today.

Agriculture has continued to be the predominant land use along the river valley. While transportation has shifted from river to railroad to truck, farming has continued in the valley. Mechanization, ditching and tiling allowed farmers to open new lands for production. Outside of the Minnesota River Valley there are not many areas that have remained untouched by plow.

Socioeconomic Resources

The table below illustrates population change in the counties and cities of the area between 1990 and 2010. Blue Earth, Nicollet, and Le Sueur counties surround the city of Mankato and they experienced growth. The other four counties along the trail corridor had a population loss. Mankato’s population grew by 20% over the last decade, while the other cities remained relatively stable.

Table 1: Population Change, 1990-2010

County	1990	2000	2010	Change		Change	
				1990-2000	% Change 1990-2000	2000-2010	% Change 2000-2010
Blue Earth	54,044	55,941	64,013	1,897	3.50%	8,072	14.40%
Brown	26,984	26,911	25,893	-73	-0.30%	-1,018	-3.80%
Le Sueur	23,239	25,426	27,703	2,187	9.40%	2,277	9.00%
Nicollet	28,076	29,771	32,727	1,695	6.00%	2,956	9.90%
Redwood	17,254	16,815	16,059	-439	-2.50%	-756	-4.50%
Renville	17,673	17,154	15,730	-519	-2.90%	-1,424	-8.30%
Sibley	14,366	15,356	15,226	990	6.90%	-130	-0.80%
Minnesota	4,375,099	4,919,492	5,303,925	544,393	12.40%	384,433	7.80%

Cities	1990	2000	2010	Change		Change	
				1990-2000	% Change 1990-2000	2000-2010	% Change 2000-2010
Courtland	412	538	611	126	30.58%	73	13.57%
Franklin	441	498	510	57	12.93%	12	2.41%
Kasota	655	680	675	25	3.82%	-5	-0.74%
Le Sueur	3,714	3,922	4,058	208	5.60%	136	3.47%
Mankato	31,477	32,566	39,309	1,089	3.46%	6,743	20.71%
New Ulm	13,132	13,594	13,522	462	3.52%	-72	-0.53%
Redwood Falls	4,859	5,459	5,254	600	12.35%	-205	-3.76%
Sleepy Eye	3,694	3,515	3,599	-179	-4.85%	84	2.39%

It is important to recognize that even where population remains relatively stable, numbers of households have increased over the past twenty years as family sizes have declined, especially in counties and cities seen in the table below.

Table 2: Households, 1990-2010

County	1990	2000	2010	Change		Change	
				1990-2000	% Change 1990-2000	2000-2010	% Change 2000-2010
Blue Earth	19,277	21,062	24,445	1,785	9.26%	3,383	16.06%
Brown	10,935	10,598	10,782	-337	-3.08%	184	1.74%
Le Sueur	8,468	9,630	10,758	1,162	13.72%	1,128	11.71%
Nicollet	9,478	10,642	12,201	1,164	12.28%	1,559	14.65%
Redwood	6,554	6,674	6,580	120	1.83%	-94	-1.41%
Renville	6,790	6,779	6,564	-11	-0.16%	-215	-3.17%
Sibley	5,323	5,772	6,034	449	8.44%	262	4.54%
Minnesota	1,647,853	1,895,127	2,087,227	247,274	15.01%	192,100	10.14%

Cities	1990	2000	2010	Change		Change	
				1990-2000	% Change 1990-2000	2000-2010	% Change 2000-2010
Courtland	143	188	237	45	31.47%	49	26.06%
Franklin	196	195	207	-1	-0.51%	12	6.15%
Kasota	252	275	293	23	9.13%	18	6.55%
Le Sueur	1,461	1,545	1,640	84	5.75%	95	6.15%
Mankato	11,217	12,367	14,851	1150	10.25%	2484	20.09%
New Ulm	5,199	5,494	5,732	295	5.67%	238	4.33%
Redwood Falls	1,981	2,266	2,265	285	14.39%	-1	-0.04%
Sleepy Eye	1,468	1,479	1,475	11	0.75%	-4	-0.27%

These trends point to the need to provide open space recreational opportunities to serve growing populations while opportunities exist. All of the communities offer many choices for lodging, shopping, and food services. While agriculture and manufacturing are the primary industries in the area, the Minnesota River State Trail could provide many new opportunities for increased tourism in the communities. This would bring in outside money and positive financial impacts to the area.

7. IMPLEMENTATION

What Happens After the Master Plan is Finished?

Chapter 86A.09 of Minnesota Statutes 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. Trail users and trail advocates need to recognize that the completion of a master plan is only one step in what typically is a long process of implementation.

Throughout the planning process for this trail extension, local trail advocates have worked to establish feasible alignments, contact landowners, seek funding from a variety of sources, and work with DNR regional staff on land acquisition. The process has been, and will continue to be, lengthy and complex.

The first generation of state trails in Minnesota, including the existing Minnesota River State Trail, 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 must cross a variety of public and private lands, making them much more challenging to develop than the rail-trails of the past.

DNR Parks and Trails staff work with individual landowners to acquire land or easements on a willing seller basis, keeping in mind that a series of acquisitions on adjoining properties will be needed in order to create a trail segment with a logical beginning and end. In other words, a trail segment should begin at an existing park or town center that can serve as a trailhead, preferably with parking and restroom facilities. It is also desirable for a segment to end at some type of destination – a city, a park, a wildlife preserve, or a historic site.

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 alignment. Acquisition is done on a willing seller basis.

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, 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 alignment 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 alignment is feasible to develop.

In the course of trail implementation, it may become apparent that a specific trail alignment 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 designated bike routes for a portion of the trail.

Using a combination of off-road trails and bike routes could create a contiguous corridor while continuing the process of securing entirely off-road alignments. Coordination between local governments, DNR, and Minnesota Department of Transportation will be critical throughout this process.

Sequence of Trail Planning and Development Events

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 alignments are identified. The intent of the plan is to provide flexibility while identifying the most feasible alignments, rather than “locking in” a specific route.
- **Explore feasibility of each alignment.** Assess land ownership, road right-of-way width (is there enough room for a trail within the right-of-way?), connectivity, physical conditions such as slope, wetlands and natural resources, scenic qualities, and historical significance. The alignment must allow state and federal design guidelines and rules to be met, including trail width, shoulders, curvature, accessibility, etc. 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 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.

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.

- **Formal landowner contact; complete acquisition process.** As mentioned above and with proper coordination, 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.
- **Trail engineering and design.** The design process offers a final opportunity to assess feasibility, including the need to avoid sensitive natural or cultural resources and address constraints such as wetlands or steep slopes. Trail alignments 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 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. An interpretive plan may be developed to identify themes and features that will be interpreted. Interpretive signs for the Minnesota River State Trail should be developed in conjunction with other trail sections and the interpretive plans for other nearby state recreation units.

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.
 - Seek opportunities to meet multiple goals through trail development – i.e., 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 streets, utilities, drainage, and parks, trails and recreational facilities (Minnesota Statutes; Chapter 394.25, Subdivision 7c [applies to counties] Chapter 462.358, Subdivision 2b [applies to cities]) (If the set-aside is for a state trail, 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 State 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 (TE) 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.

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APPENDIX A: SUMMARY OF MEETING RESULTS AND PUBLIC COMMENTS

Initial Open Houses

Initial open house meetings were held in New Ulm on May 7th and in Mankato on May 9th to solicit input on the planning of the Minnesota River State Trail. Most attendees were trail users or local and county government representatives who were in support of the trail while several local landowners in attendance registered opposition to a trail in their area. Twenty-two attendees signed in at New Ulm and 31 signed in at the Mankato open house.

At these meetings a series of posters were displayed around the room with questions regarding trail development priorities and maps depicting potential trail routes. Attendees were encouraged to write comments on the posters or fill out a questionnaire. Eleven questionnaires were filled out and turned in and the vast majority of verbal and written comments were supportive of trail development.

Concerns related to the trail included:

- Use of eminent domain by local or state agencies
- Compatibility of motorized and non-motorized uses
- Compatibility of bicycling and equestrian uses
- Impacts to landowners including: farmers' property rights, trespassing, vandalism, and littering
- Restriction of land uses near trail such as: trail crossings, pesticide application, and hunting

Suggestions for trail development included:

- Establish user fee system to support maintenance of trail
- Include snowmobiling and equestrian uses
- Incorporate areas with cultural and historical significance
- Have user groups participate in trail maintenance activities and/or begin an adopt a trail program
- Suggested trail connections
 - Minnesota Valley State Trail
 - Sakatah Singing Hills State Trail
 - Fair Ridge Trail
 - Mack Lake and Anderson Lake county parks
 - Kasota Prairie
 - Communities and local businesses
- Suggested trail alignments
 - Stay on North side of river between Fort Ridgely State Park and Franklin
 - County Highways 5 and 21
 - Highway 4 south to Sleepy Eye and North to Cosmos and Luce Line State Trail
 - Avoid Judson Bottom Road between Mankato and New Ulm
 - Follow Highway 68 between New Ulm and Mankato

Public Review Period

The Minnesota River State Trail Draft Master Plan public review and comment period was held from December 10, 2013 through January 10, 2014. During this public review period an open house meeting was held and the Draft Master Plan was available for review on the DNR website. Forty-three people signed in to the open house which was held in Mankato on December 17.

DNR staff were present at the open house to answer attendees' questions regarding planning of the trail. Posters were displayed around the room with information about the state trail system, significant trail corridor resources and connections, and potential trail alignments. Copies of the Draft Master Plan were available for review at the meeting. Additional handouts about Division of Parks and Trails programs were distributed.

Verbal comments at the open house ranged from enthusiastic support to opposition. Several attendees expressed concerns about the compatibility of some recommended trail uses with other trail uses or the land management goals of specific areas in the trail search corridor. Some local land owners were opposed to the trail being located on their property and were concerned about several of the alignments discussed in the plan. Other concerns raised at the meeting included potential impacts of privacy, vandalism, and trespass on adjacent residents.

A majority of attendees represented various trail user groups or local government officials and supported the trail. Many of these people inquired about the timeline of development, which is still undetermined. Trail users were concerned about trail safety, maintenance, scenic value of the trail, and the location of the trail away in relationship to high-traffic roadways.

Comment forms, with several questions about the draft master plan, were distributed at the open house. All attendees were encouraged to fill out the form and record their support or opposition, concerns, or questions about the draft master plan and trail planning. Ten comment forms were filled out and submitted at the open house. An additional 14 comment forms or letters were received after the meeting through email or U.S. post.

Written comments received during the public review period spanned a wide range of support and opposition. A majority of written comments indicated support of trail development and the recommendations articulated in the draft master plan. Several letters expressed conditional support of the trail depending on which trail uses are accommodated or how the trail is implemented. The remaining letters stated either outright opposition to the trail, or opposition to trail development in their neighborhood. A petition was received from residents of Courtland and Nicollet stating opposition to trail development along 506th St.

The following section is a summary of the written comments received during the 30-day public review period. These comments mirror many of the conversations DNR staff had with open house attendees. While all comments are not included here, those selected are representative of all the comments received and considered.

Planning Process, Vision and Goals:

Do you agree with the vision?

- Yes, I like that it incorporated healthy, natural, historical, and cultural aspects of the MN River. It is a unifying statement that includes different interests and purposes for the trail.
- I fail to see how having people bicycle, run, walk, jog, walk dogs, ski, ride horses, snowmobile, hunt and have access to fishing while going through my property every day would benefit my healthy lifestyle.
- I believe this trail provides an exceptional opportunity to help preserve the valley and attract more Minnesotan's to recreate and experience nature and history in a breathtaking setting.
- NO
- I don't know how it would help the people who live here. The only ones [trail users] who spend money are snowmobilers.
- This trail sounds like a great opportunity for all trail users!
- Yes, destination traveling. All of the MN River is a community – tap into the social/cultural tapestry and network that exists.

What additions, changes, or deletions would you suggest?

- DNR needs to take a more aggressive role
- Bikers or hikers will not bring [dollars to the] rural economy. They will not stop in any of the small towns except for water and restrooms.
- What about the homeowners that pay taxes to live here? No – the trail will not bolster rural economy; it will create litter and noise along a once quiet secluded country road.
- The trail will also provide a form of recreation for users, but I'm not seeing that included in this statement.

Recommended Trail Uses:

Should any other uses be accommodated?

- What about ATVs? We are tired of taking our money to WI to ride grant in aid trails.
- No
- Please allow snowmobile traffic. Also being a person who has partaken in most trail activities, I can tell you that snowmobilers do more for the local economies than the others by buying gas, food, oil, and lodging.

Should any of these uses be limited?

- I do not like the idea of hunting or people carrying guns by our home with small children playing nearby.
- Please limit motorized use of any trails.
- No hunting.
- No uses should be limited. Make everyone pay for use with a permit for summer users and winter users. Multi-use trail needs to include snowmobiles on all trails!
- I think that parts of any trail maybe appropriate for some users but not for all; Some uses are not compatible ex. XC ski and snowmobiles
- May need to restrict motorized uses in some sensitive segments and provide alternate routes.

Trail Segments and Connections:

Do you have any other suggestions about the trail alignment, or possible trailhead amenities?

- Highway 5 is the best route from St Peter to Mankato. Try to hug the river whenever possible for the scenic aspect the trail would provide.
- Have the trail go out of Courtland on CR 24/CR 45 to the south and hook up to Highway 68 and go through Cambria WMA as well. This is a much better plan to connect with Minneopa Trail.
- The landscape along Highway 68 along the southern side of the river seems much more suited to making a trail without much of a change to the landscape and environment.
- Highway 41 from Judson to Mankato should be listed as a preferred route.
- Make the alignments the least cost per mile to do but make them all connect for everyone to be able to use multi-use in summer and winter.
- Just avoid putting a trail along 506th St. It is beautiful the way it is – bikers enjoy it the way it is.
- Trailheads should offer additional attractions such as historical sites and any other amenities or other sites that would attract additional visitors besides travel enthusiasts.
- Do not want the trail here period.
- I urge you to minimize use of right-of-way along state or county roads out of the valley. Trails on shoulders, especially on busier roads diminish the nature and scenic experience, and discourage many family and recreational bikers.

Do you have any other ideas for future trail connections?

- There should be other future connecting trails to expand the state multiuse trail system.
- Need to show all local plans and connecting features along corridor.
- A connection to Flandrau State Park is critical.

Trail Management:

Do you have any other suggestions related to trail maintenance, information and education, and enforcement?

- Trail maintenance is important and often takes a back seat to NEW trail development.
- Have counties do local maintenance with some subsidy.
- I wonder how well people will stay on public land and not wander into private property, which already happens way too often.
- I would like to suggest a trail user fee for building and maintaining the trail, including bicyclists, similar to the charge for parks.
- Private lands which have conveyed conservation easements or similar instruments will continue to be administered by the governing agency or organization in the spirit for which the easement was granted.
- Trail should be seal coated immediately after installation or at least within 2 years, not 6 as the plan states.
- It [the trail] will bring too much garbage and litter and noise.

Trail Corridor Resources:

Do you have any other suggestions related to water resources, vegetation management, wildlife habitat, or the area's historical and cultural resources?

- I have my own wildlife and vegetation. Leave it as is.
- This section is beyond my knowledge, but I do trust that the DNR has the future impact on vegetation, water resources, and wildlife at its goal.

Implementation:

Do you have any other suggestions for how the master plan is implemented, once it has been reviewed and approved by the DNR Commissioner?

- Just to make sure that all agencies are working together so that we can find the best long term option for everyone involved.
- Mankato-St Peter-New Ulm has a lot going for it and would work best and the community has the capacity to make our section work.
- St Peter to Mankato seems the easiest piece to implement. St Peter to Le Sueur should be the second to connect towards the city.
- A tar, gravel, or dirt path can run alongside this trail for ATVs.
- I hope that the step-by-step process outlined in this section is strictly followed.
- We expect only purchases between willing sellers and buyers [including third partys] using a method of uniform standard appraisal to ensure fair treatment of sellers. We expect no eminent domain actions be taken as pressure mounts for trail completion from special interest groups.

Overall:

What is the one thing you are most excited about related to the Minnesota River State Trail?

- The whole thing. I ride the MN River and would like a recreational trail option along with that. Think recreation experience not so much inter-state transportation. Excited about State Park to State Park destination routes.
- Getting people outside.
- Being able to use it!!
- Snowmobiling with connections to other trails including Casey Jones, Sakatah, and MN Valley trails.
- Connectivity
- Not one thing is exciting about it!

What is the one thing you are most concerned about?

- People too near our homes, more littering than we already have. Too many people think all of the countryside is theirs to do with as they please and that means trouble for the landowners.
- The difficult task of trying to be all things to all people to the point that none are well served.
- Misuse and abuse of trails
- Landowners cooperation

- That snowmobiling will be restricted on portions of the trail through cities.
- Not being informed about what is happening with this proposed project that concerns my environment and property.
- Concerned about the misuse of private property and the trail being used by people with guns, especially close to our homes.
- Trail should not be put on 506th St. in Courtland/Nicollet.

Do you have any other suggestions, comments, or questions?

- Make everyone like the bikers/roller bladers/walkers/hikers/horseback riders pay to use – have permits.
- Please don't push snowmobilers to the road ROW again and make sure they can use this trail. Thanks!
- I believe it is in the best interests of the residents of, and visitors to, Minnesota to build this trail and I heartily support it.
- The current method of notification for participating in the planning effort may be effective for user groups but generally not this sector. A more effective way may be a collaborative effort with a group like the local soil and water conservation district or Farm Service Agency to use their member address lists and newsletters for getting the word out to key partners in this process.
- I have camped, hiked, and visited historical sites along the valley... a paved trail and amenities along the valley would draw people like me to bike in the valley.

APPENDIX B: 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, Division of Ecological and Water Resources. All species and features within 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 Division of Ecological and Water Resources is gathering data for possible future listing.

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

Common Name	Scientific Name	MN Status	US Status
Vertebrate Animal			
Acadian Flycatcher	<i>Empidonax virescens</i>	SPC	
Bald Eagle	<i>Haliaeetus leucocephalus</i>	NON	
Black Buffalo	<i>Ictiobus niger</i>	THR	
Blanding's Turtle	<i>Emydoidea blandingii</i>	THR	
Blue Sucker	<i>Cycleptus elongatus</i>	SPC	
Cerulean Warbler	<i>Setophaga cerulea</i>	SPC	
Henslow's Sparrow	<i>Ammodramus henslowii</i>	END	
Lake Sturgeon	<i>Acipenser fulvescens</i>	SPC	
Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	
Louisiana Waterthrush	<i>Parkesia motacilla</i>	SPC	
Milksnake	<i>Lampropeltis triangulum</i>	NON	
Mudpuppy	<i>Necturus maculosus</i>	SPC	
North American Racer	<i>Coluber constrictor</i>	SPC	
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	SPC	THR
Peregrine Falcon	<i>Falco peregrinus</i>	SPC	
Shovelnose Sturgeon	<i>Scaphirhynchus platyrhynchus</i>	NON	
Smooth Softshell	<i>Apalone mutica</i>	SPC	
Tricolored Bat	<i>Perimyotis subflavus</i>	SPC	
Upland Sandpiper	<i>Bartramia longicauda</i>	NON	
Western Foxsnake	<i>Pantherophis ramspotti</i>	NON	
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	SPC	

Common Name	Scientific Name	MN Status	US Status
Invertebrate Animal			
A Jumping Spider	<i>Habronattus texanus</i>	SPC	
A jumping spider	<i>Marpissa formosa</i>	SPC	
A Jumping Spider	<i>Phidippus pius</i>	SPC	
Black Sandshell	<i>Ligumia recta</i>	SPC	
Elktoe	<i>Alasmidonta marginata</i>	THR	
Fluted-shell	<i>Lasmigona costata</i>	THR	
Hickorynut	<i>Obovaria olivaria</i>	NON	
Iowa Skipper	<i>Atrytone arogos iowa</i>	SPC	
Leadplant Flower Moth	<i>Schinia lucens</i>	SPC	
Monkeyface	<i>Quadrula metanevra</i>	THR	
Mucket	<i>Actinonaias ligamentina</i>	THR	
Pistolgrip	<i>Tritogonia verrucosa</i>	END	
Red-Tailed Prairie Leafhopper	<i>Aflexia rubranura</i>	SPC	
Regal Fritillary	<i>Speyeria idalia</i>	SPC	
Rock Pocketbook	<i>Arcidens confragosus</i>	END	
Round Pigtoe	<i>Pleurobema sintoxia</i>	SPC	
Salamander Mussel	<i>Simpsonaias ambigua</i>	END	
Spike	<i>Elliptio dilatata</i>	THR	
Wartyback	<i>Quadrula nodulata</i>	THR	
Winged Mapleleaf	<i>Quadrula fragosa</i>	END	END
Yellow Sandshell	<i>Lampsilis teres</i>	END	
Animal Assemblage			
Bat Concentration			
Colonial Waterbird Nesting Site			
Mussel Sampling Site			
Vascular Plant			
American Ginseng	<i>Panax quinquefolius</i>	SPC	
Beaked Spike-rush	<i>Eleocharis rostellata</i>	THR	
Beaked Spike-rush	<i>Eleocharis rostellata</i>	THR	
Butternut	<i>Juglans cinerea</i>	END	
Cut-leaf Water Parsnip	<i>Berula erecta</i>	THR	

Common Name	Scientific Name	MN Status	US Status
Eared False Foxglove	<i>Agalinis auriculata</i>	END	
Goldie's Fern	<i>Dryopteris goldiana</i>	SPC	
Hair-like Beak-rush	<i>Rhynchospora capillacea</i>	THR	
Kentucky Coffee-tree	<i>Gymnocladus dioica</i>	SPC	
Kitten-tails	<i>Besseyia bullii</i>	THR	
Larger Water-starwort	<i>Callitriche heterophylla</i>	THR	
Long-lobed Arrowhead	<i>Sagittaria calycina</i>	THR	
Plains Prickly Pear	<i>Opuntia macrorhiza</i>	SPC	
Prairie Bush Clover	<i>Lespedeza leptostachya</i>	THR	THR
Rattlesnake-master	<i>Eryngium yuccifolium</i>	SPC	
Rock Clubmoss	<i>Huperzia porophila</i>	THR	
Short-pointed Umbrella-sedge	<i>Cyperus acuminatus</i>	THR	
Small White Lady's-slipper	<i>Cypripedium candidum</i>	SPC	
Snow Trillium	<i>Trillium nivale</i>	SPC	
Sterile Sedge	<i>Carex sterilis</i>	THR	
Sullivant's Milkweed	<i>Asclepias sullivantii</i>	THR	
Three Stamened Waterwort	<i>Elatine triandra</i>	SPC	
Three-leaved Coneflower	<i>Rudbeckia triloba var. triloba</i>	THR	
Tuberous Indian-plantain	<i>Arnoglossum plantagineum</i>	THR	
Twig-rush	<i>Cladium mariscoides</i>	SPC	
Water-hyssop	<i>Bacopa rotundifolia</i>	THR	
Whorled Nut-rush	<i>Scleria verticillata</i>	THR	
Wolf's Spike-rush	<i>Eleocharis wolfii</i>	END	

Fungus

A Species of Lichen	<i>Buellia nigra</i>	SPC
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Native Plant Community (NPC) Name

NPC Code

Terrestrial Community

Calcareous Fen (Southeastern)	OPp93c
Crystalline Bedrock Outcrop (Prairie); Minnesota River Subtype	ROs12a1
Dry Hill Prairie (Southern)	UPs13d
Dry Sand - Gravel Prairie (Southern)	UPs13b
Elm - Basswood - Black Ash - (Hackberry) Forest	MHs49a

Native Plant Community (NPC) Name	NPC Code
Mesic Prairie (Southern)	UPs23a
Native Plant Community, Undetermined Class	
Pin Oak - Bur Oak Woodland	FDs37b
Red Oak - Sugar Maple - Basswood - (Bitternut Hickory) Forest	MHs38c
Sedimentary Bedrock Outcrop (Southeast)	ROs12c
Seepage Meadow/Carr	WMs83a
Seepage Meadow/Carr, Tussock Sedge Subtype	WMs83a1
Silver Maple - (Virginia Creeper) Floodplain Forest	FFs68a
Southern Dry Prairie	UPs13
Southern Mesic Maple-basswood Forest	MHs39
Sugar Maple - Basswood - (Bitternut Hickory) Forest	MHs39a
Sugar Maple Forest (Big Woods)	MHs39c
Wet Prairie (Southern)	WPs54b
Wet Prairie (Southern)	WPs54b
Willow - Dogwood Shrub Swamp	WMn82a
Other Ecological Feature	
Fossil Plant (Quaternary)	
Igneous Composition (Lower Proterozoic)	
Igneous Intrusion (Lower Proterozoic)	
Igneous Unit or Sequence (Lower Proterozoic)	
Mixed Unit or Sequence (Archean, Lower Proterozoic)	
Proglacial River Erosion (Quaternary)	
Sedimentary Composition (Cretaceous)	
Sedimentary Composition (Lower Proterozoic)	
Sedimentary Unit or Sequence (Cambrian, Ordovician)	
Sedimentary Unit or Sequence (Cretaceous)	
Weathering (Jurassic, Cretaceous)	