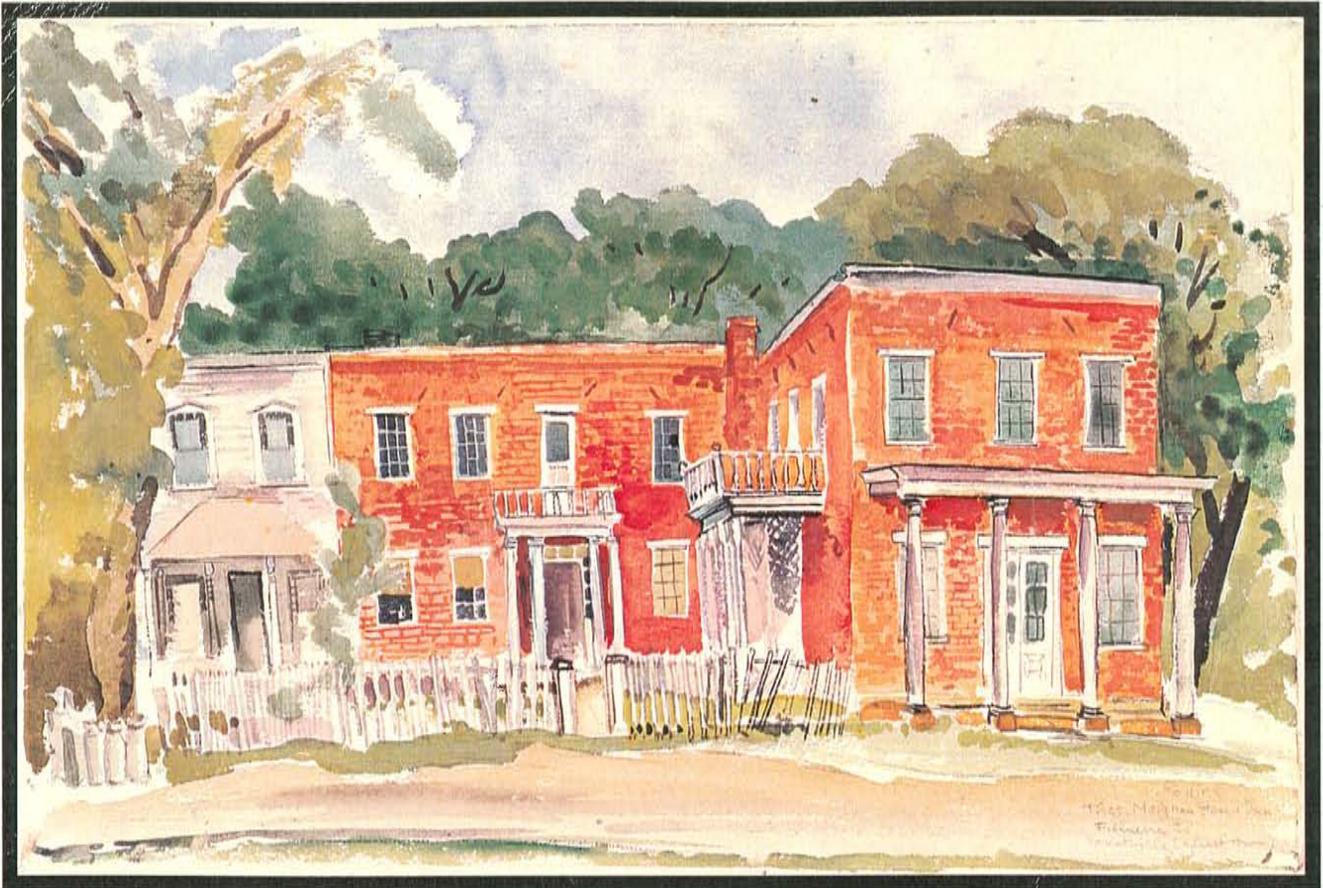


# Preston to Forestville



## State Trail Master Plan

August 2003

Minnesota Department of Natural Resources  
Division of Trails & Waterways

# Preston to Forestville State Trail Master Plan

Master Plan prepared by:  
Minnesota Department of Natural Resources  
Division of Trails & Waterways  
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July 2003

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# Minnesota Department of Natural Resources

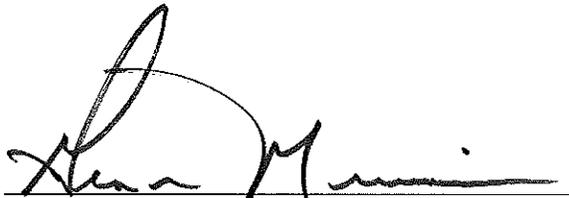
500 Lafayette Road  
St. Paul, Minnesota 55155-4000

## Department of Natural Resources Approval of Master Plan for the Preston to Forestville State Trail

Minnesota Statutes 86A.09, Subdivision 1, requires that a master plan be prepared for units of the outdoor recreation system, including state trails. The Preston to Forestville State Trail was legislatively authorized in (Minnesota Statutes 85.015, Subdivision 19).

The Minnesota Department of Natural Resources worked in partnership with Minnesota citizens and an interdisciplinary resource team to develop a master plan for the Preston to Forestville State Trail.

The master plan has been approved through the Department of Natural Resources' Statewide Interdisciplinary Review Service review process during July 2003.

  
Gene Merriam, Commissioner  
Minnesota Department of Natural Resources

8.29.03  
Date



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# **Executive Summary**

## **Trail Alignment and Development**

The Preston to Forestville State Trail is a legislatively authorized state trail which, when complete, will connect the community of Preston, the Harmony-Preston Valley State Trail and the Root River State Trail to Forestville/Mystery Cave State Park. The proposed trail begins in Preston at the western end of the Trout Run Trail (currently a Preston community trail) and will end near the Historic Site in Forestville State Park. The portion of the alignment from Preston to Carimona has already been identified and acquired. An alignment between Carimona and Forestville State Park has been identified and options to purchase most of the alignment have been obtained. The trail will be approximately 10 miles in length when complete. The trail will be developed with an asphalt surface, ten feet wide.

The trail passes through a variety of environments including floodplain forest, wooded pasture, the edges of farm fields, wooded ravines, and hardwood forest. Views and vistas of ancient pine stands, rock outcrops, the Root River, and rural pastoral landscapes of the Blufflands region are scenic highlights of this trail.

## **Recommended/Allowable Uses**

The Preston to Forestville State Trail is a multi-use trail but the limitation of width dictate that not all potential trail uses can be accommodated. Following are the recommended trail uses: bicycling; hiking and walking; cross-country skiing; dog walking; running/jogging; in-line skating/skate skiing; environmental education/interpretation; Hunting is allowed by state trail rules, except where discharge of firearms is regulated by community ordinance or State Park rules and regulations.

## **Trail Management**

The plan contains recommendations for maintenance, enforcement, and interpretation of natural and cultural resources. The plan recommends that an adequate level of enforcement be provided via a multifaceted approach to help maintain a safe and secure trail environment and to encourage trail users to understand and obey trail rules and respect other trail users and adjoining properties. Interpreting the natural and cultural resources along the trail is also recommended.

## **Natural and Cultural Resources**

The ecological value of the trail corridor will be enhanced wherever possible through intensive resource management and by offering technical assistance to adjoining landowners who wish to restore or preserve native vegetation. The resources within the trail right-of-way will be managed to provide a diversity of prairie, wetland, and woodland communities for wildlife habitat and for the appreciation of trail users and adjoining landowners. Native grasses, flowers, tree, and shrubs will be planted and managed.

# Planning Process: Purpose and Scope

Master planning for the Preston to Forestville State Trail was conducted in order to:

- Provide a unifying vision for trail advocates who are working to identify and secure a trail alignment and funds for development and maintenance of the trail.
- Document how the trail meets the legislative criteria (Minnesota Statutes, 86A.05 Subdivision 4) for inclusion in the state trail system.
- Guide the development, management, maintenance and operation of the Preston to Forestville State Trail so that quality recreation experiences are provided.
- Provide a forum for open public discussion and comment concerning trail use; trail development options; trail maintenance and management issues; trail operations; and trail enforcement needs.
- Support partnerships and processes that will help carry out the plan and contribute to providing quality trail experiences.
- Assess the projected impacts of trail development on natural, cultural and historic resources, and on local communities.
- Satisfy the intent of Minnesota Statutes, Chapter 86A.09 which requires that a master plan be prepared for state trails.

*The chart on the next page outlines the planning process used in developing this master plan.*

## **Preston - Forestville State Trail Master Planning Process**

<b>STEPS IN THE PROCESS</b>
<b>Information Gathering and Issue Identification</b>
<b>Formulate Vision, Goals, and Design Concepts</b>
<b>Formulate Trail Development and Management Recommendations</b>
<b>Draft Plan and Internal DNR Review</b>
<b>Draft Plan and Public Review</b>
<b>Trail Plan Adopted - Implementation Begins</b>
<b>Evaluation and Adjustment</b> The evaluation component will address trail user satisfaction, vegetation restoration success, interpretive success and an assessment of whether or not natural features have been preserved and enhanced.

<b>WHO'S INVOLVED</b>
<b>Trail Association</b>
<b>Trail User Groups</b>
<b>Department of Natural Resources</b>
<b>Fillmore County</b>
<b>Communities</b>
<b>Public Workshop Participants</b>
<b>Adjacent Landowners</b>
<b>Elected Officials</b>
<b>Other Agencies</b>

# Trail Authorization

The Preston to Forestville State Trail was legislatively authorized in 1992, (Minnesota Statutes 85.015, Subdivision 7(b)).

“(b) Additional trails may be established that extend the Blufflands trail system to include La Crescent, Hokah, Caledonia, and Spring Grove in Houston County and Preston, Harmony, Fountain, Wykoff, Spring Valley, Mabel, Canton, and Ostrander in Fillmore county; Dover, Eyota, Stewartville, Byron, and Chester Woods county park in Olmsted county; and Winona, Minnesota City, Rollingstone, Altura, Lewiston, Utica, St. Charles, and Elba in Winona county.

(c) The trails shall be developed primarily for nonmotorized riding and hiking.”

The Preston to Forestville State Trail is a segment of the Blufflands Trail System, which is part of the legislatively authorized state trail system. (See the map of Minnesota’s State Trail System on the next page.) 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 Preston to Forestville State Trail meets the following criteria established for state trails in the Outdoor Recreation Act, Minnesota Statutes 86A.05, Subdivision 4, State Trail; purpose; resource and site qualifications; administration; designation.

*‘a. A state trail shall be established to provide a recreational travel route which connects units of the outdoor recreation system or the national trail system; provides access or passage through other areas which have significant scenic, historic, scientific, or recreational qualities; or establishes or permits travel along a historically prominent travel route or which provides commuter transportation.*

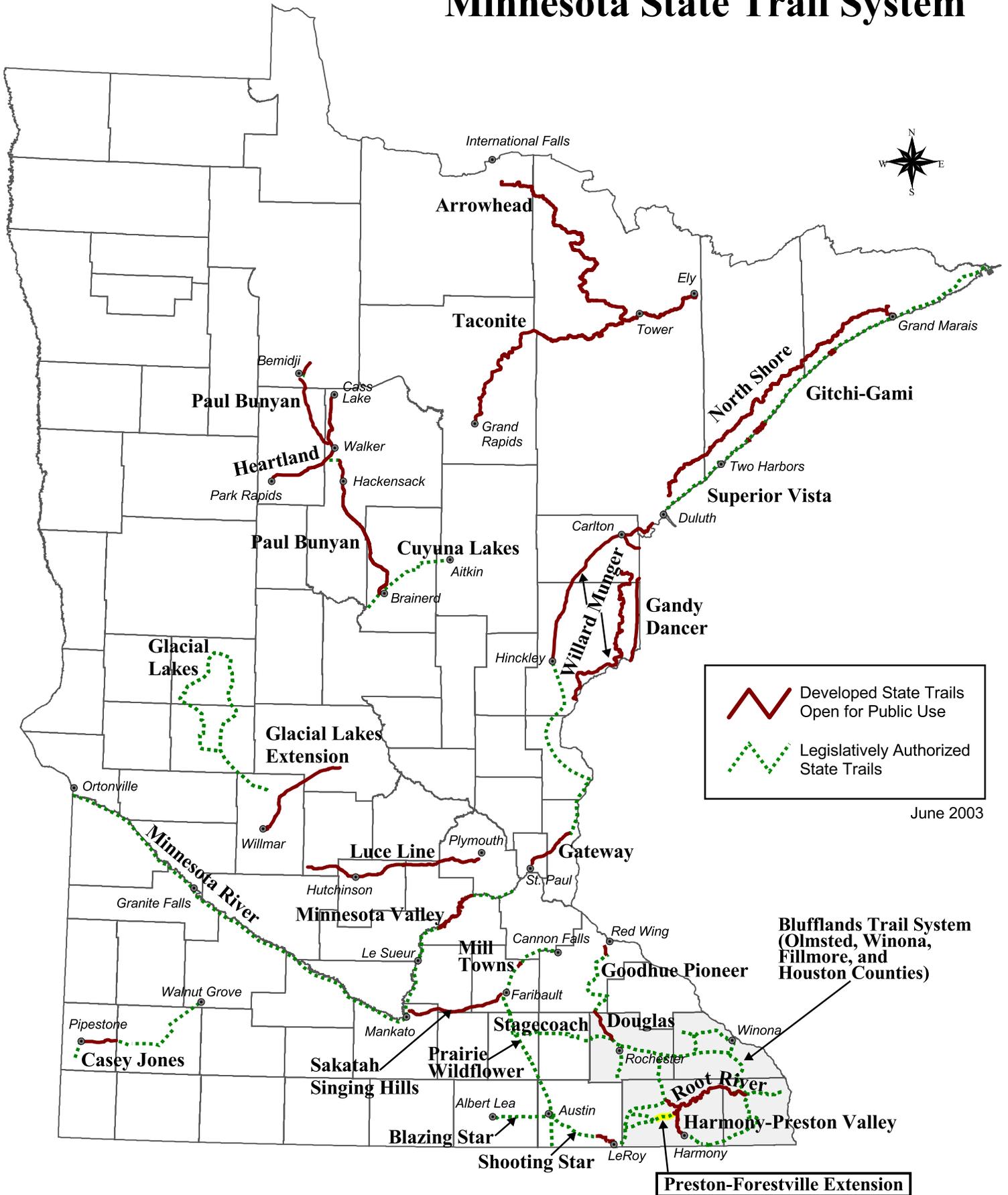
*a. No unit shall be authorized as a state trail unless its proposed location substantially satisfies the following criteria:*

*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 Preston to Forestville State Trail will connect the city of

# Minnesota State Trail System



Preston to Historic Forestville in Forestville State Park. The trail will also pass through Carimona, one of the first county seats of Fillmore County.

The trail will also allow trail users to see and travel through the Blufflands landscape. The trail connects vistas of the landscape, the South Branch of the Root River, rock outcrops, floodplain forest, hardwood forest, and oak forest.

(ii) *Travel through an area which possesses outstanding scenic beauty.*  
The Preston to Forestville trail corridor and adjacent land is scenic and diverse. The trail passes through wooded environments and open pasture land. Trail users will experience changes in elevation - providing up close views of the South Branch of the Root River and vistas of the pastoral rural landscape. Wildflowers, pine stands, rock outcroppings, and wooded ravines are some additional scenic highlights of this trail.

(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 trail will be developed predominately for walking, bicycling, and in-line skating, all slower pace modes of travel that foster the opportunity to recreate in a natural setting.

(iv) *Travel along a route which is historically significant as a route of migration, commerce or communication.*  
The Preston to Forestville State Trail parallels the South Branch of the Root River. This corridor was used by prehistoric American Indians as a travel corridor and as a source of resources as evidenced by archaeological artifacts.

(v) *Travel between units of the outdoor recreation system or national trails system.*  
The Preston to Forestville State Trail will connect to a developed state trail, the Harmony-Preston Valley State Trail and to a state park, Forestville State Park.

2. *Utilizes to the greatest extent possible, consistent with the purposes of this subdivision, public lands, rights-of-way and the like.*  
Portions of the trail alignment will be located in road rights-of-way and a portion of the alignment will be located in Forestville State Park.

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.*

Overlooks, waysides, and interpretive facilities are proposed to increase trail users' understanding of the natural and cultural resources of the area. There is great potential for use of the trail for environmental education. Plant community restoration projects and wildlife habitat improvement projects would benefit students and trail users. The trail will end near Historic Forestville.

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

The master plan evaluates and uses the current research and trends on existing use of trails and demand for trail opportunities. Current demographic data is taken into account. Information gathered at public workshops is also considered.

# **Vision for the Preston to Forestville State Trail**

The Preston to Forestville State Trail is part of the Blufflands Trail System which when complete may connect LaCrescent, Hokah, Caledonia, and Spring Grove in Houston County and Preston, Harmony, Fountain, Wykoff, Spring Valley, Mabel, Canton, and Ostrander in Fillmore County; Dover, Eyota, Stewartville, Byron, and Chester Woods county park in Olmsted county; and Winona, Minnesota City, Rollingstone, Altura, Lewiston, Utica, St. Charles, and Elba in Winona county. See the map on the next page that illustrates the conceptual Southeast Minnesota Trail System.

The vision for the Southeast Minnesota Trail System is to develop a system of loop trails. The system/loop concept provides numerous and diverse trail opportunities ranging from lengthy touring opportunities to short distance opportunities. Novice and experienced trail users will be served - individuals, families, and groups.

The Preston to Forestville State Trail corridor will be aesthetically pleasing; acquired, developed and managed to enhance natural resource values of the Blufflands landscape. Interpretive information will enhance the trail experience by increasing trail users' appreciation of the significant resources along the trail.

Trail users will benefit physically and mentally by experiencing the trail. Trail users will understand and respect the needs of others. Communities will also experience benefits from trail development, including economic benefits and the addition of an opportunity for recreation by community residents.

# Southeast Minnesota Trail System

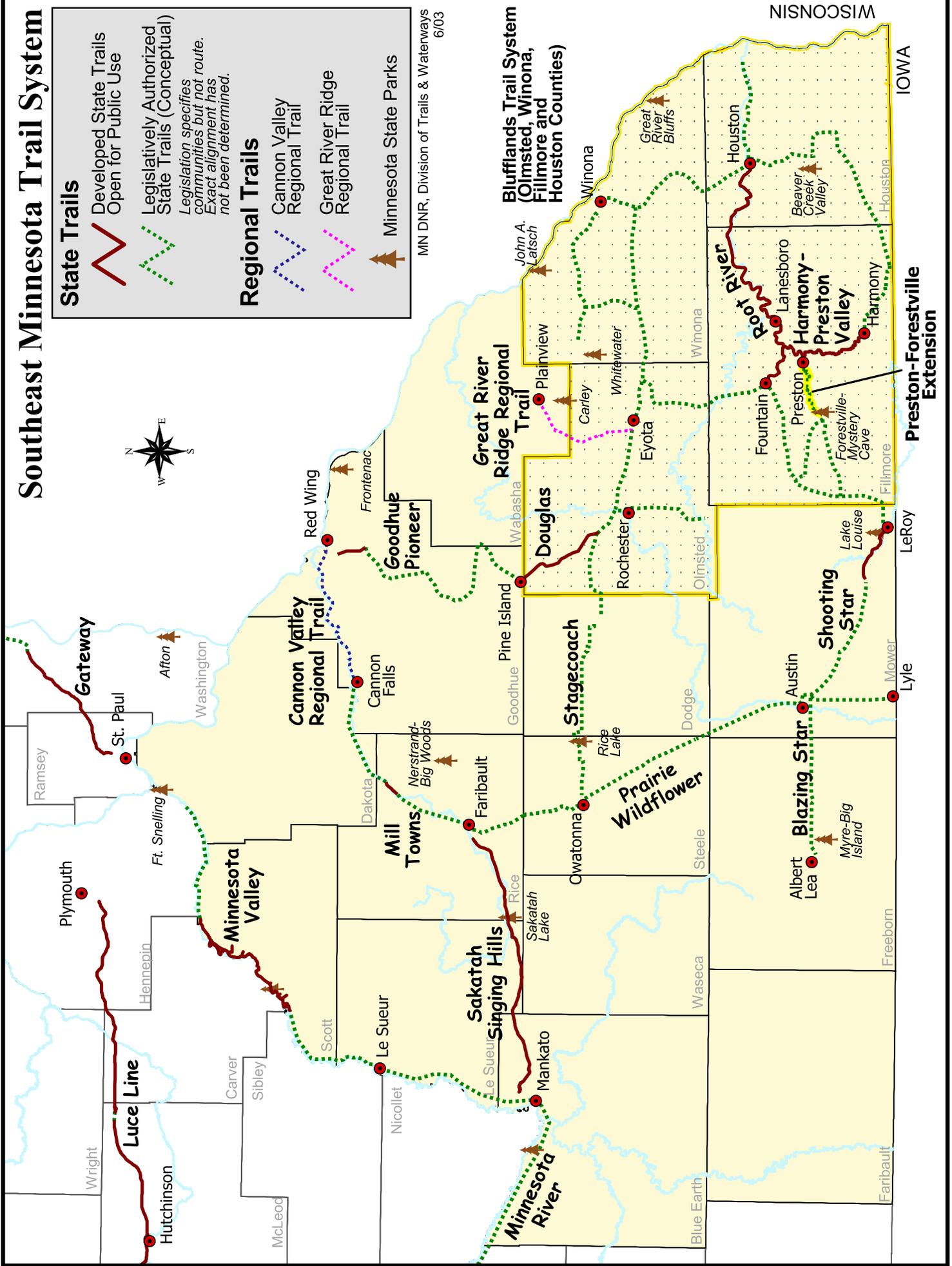
## State Trails

-  Developed State Trails Open for Public Use
-  Legislatively Authorized State Trails (Conceptual)  
*Legislation specifies communities but not route. Exact alignment has not been determined.*

## Regional Trails

-  Cannon Valley Regional Trail
-  Great River Ridge Regional Trail
-  Minnesota State Parks

MN DNR, Division of Trails & Waterways  
6/03



WISCONSIN

IOWA

Preston-Forrestville Extension

LeRoy

Lyle

Freeborn

Faribault

Gateway

St. Paul

Minnesota Valley

Cannon Valley Regional Trail

Red Wing

Goodhue Pioneer

Great River Ridge Regional Trail

Douglas

Stagecoach

Prairie Wildflower

Blazing Star

Shooting Star

Bluffslands Trail System (Olmsted, Winona, Fillmore and Houston Counties)

John A. Latsch

Plainview

Carley

Whitewater

Eyota

Wimona

Harmony

Harmony

Harmony

Root River

Lanesboro

Harmony - Preston Valley

Harmony

Harmony

Fountain

Preston

Forestville-Mystery Cave

Fillmore

Houston

Rochester

Olmsted

Dodge

Lake Louise

Mower

Lyle

LeRoy

Plymouth

Hennepin

Washington

Afton

Ft. Snelling

Cannon Falls

Goodhue

Wabasha

Pine Island

Faribault

Mill Towns

Nerstrand-Big Woods

Dakota

Faribault

Qwatonna

Rice Lake

Dodge

Austin

Myre-Big Island

Albert Lea

Freeborn

Luce Line

Hutchinson

Wright

Carver

Sibley

McLeod

Le Sueur

Nicollet

Le Sueur

Sakatah Singing Hills

Rice

Sakatah Lake

Waseca

Mankato

Waseca

Blue Earth

Waseca

Waseca

Waseca

Waseca

Waseca

# Goals for the Preston to Forestville State Trail

## **Environmental**

- Preserve and enhance the natural and cultural features of the trail corridor.
- Interpret the natural, historical, and cultural features of the trail and the Blufflands landscape.
- Design, construct, and maintain the trail in a way that protects and enhances the natural environment and minimizes the trail users' impact.
- Protect, restore, and manage plant communities, wildlife, soil, and water resources in a way that is appropriate to the Blufflands landscape.

## **Adjacent Landowner Relationships**

- Develop and maintain the trail so that impacts to adjacent landowners are avoided or minimized.

## **Trail Integrity/Connectivity**

- Provide a continuous, off-road multi-use trail which serves as a component in the emerging southeastern Minnesota trail system.
- Connect regional tourist travel destinations and population centers.
- Connect state and local outdoor recreation lands and facilities.

## **Meeting Trail User Needs**

- Provide access for a wide range of people with varying degrees of capabilities.
- Promote the safety and security of trail users.
- Work with local communities in developing, managing, and maintaining the trail right-of way to mutually benefit both trail users and the communities.
- Complement the character and economic vitality of the communities through which the trail passes.
- Involve local units of government, user groups, adjacent landowners, and other concerned citizens in the planning, design, and operation of the trail so that their needs are identified and addressed.
- Work cooperatively with other units of the DNR and public agencies to fulfill mutual objectives.

## Recommended Trail Uses

This page summarizes the recommended allowable uses for the trail. The Preston to Forestville State Trail is a multi-use trail, but the physical limitations of the corridor dictate that not all potential trail uses can be accommodated at all times on the entire length of the trail.



**Bicycling**



**Hiking and Walking**



**Dog walking**



**Running/Jogging**



**In-Line Skating/Skate-skiing**



**Cross-country skiing**



**Environmental Education/Interpretation**



**Trail development will be accessible to people with disabilities wherever possible**

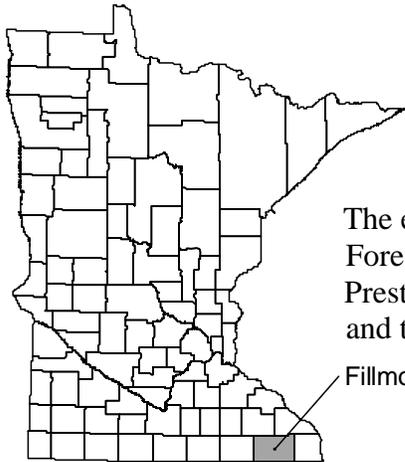


**Access for fishing**

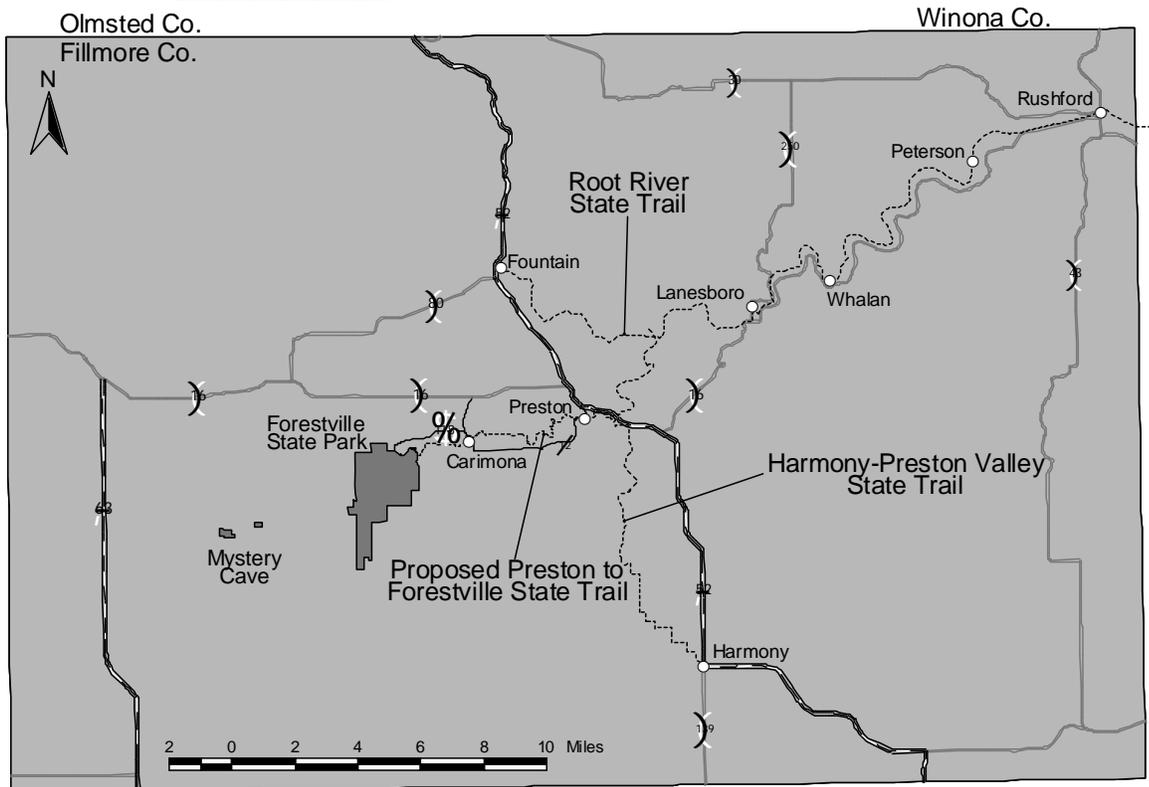
# Overview of the Trail Alignment

The Preston to Forestville State Trail is a legislatively authorized state trail which, when complete, will connect the community of Preston, the Harmony Preston Valley State Trail and the Root River State Trail to Forestville State Park.

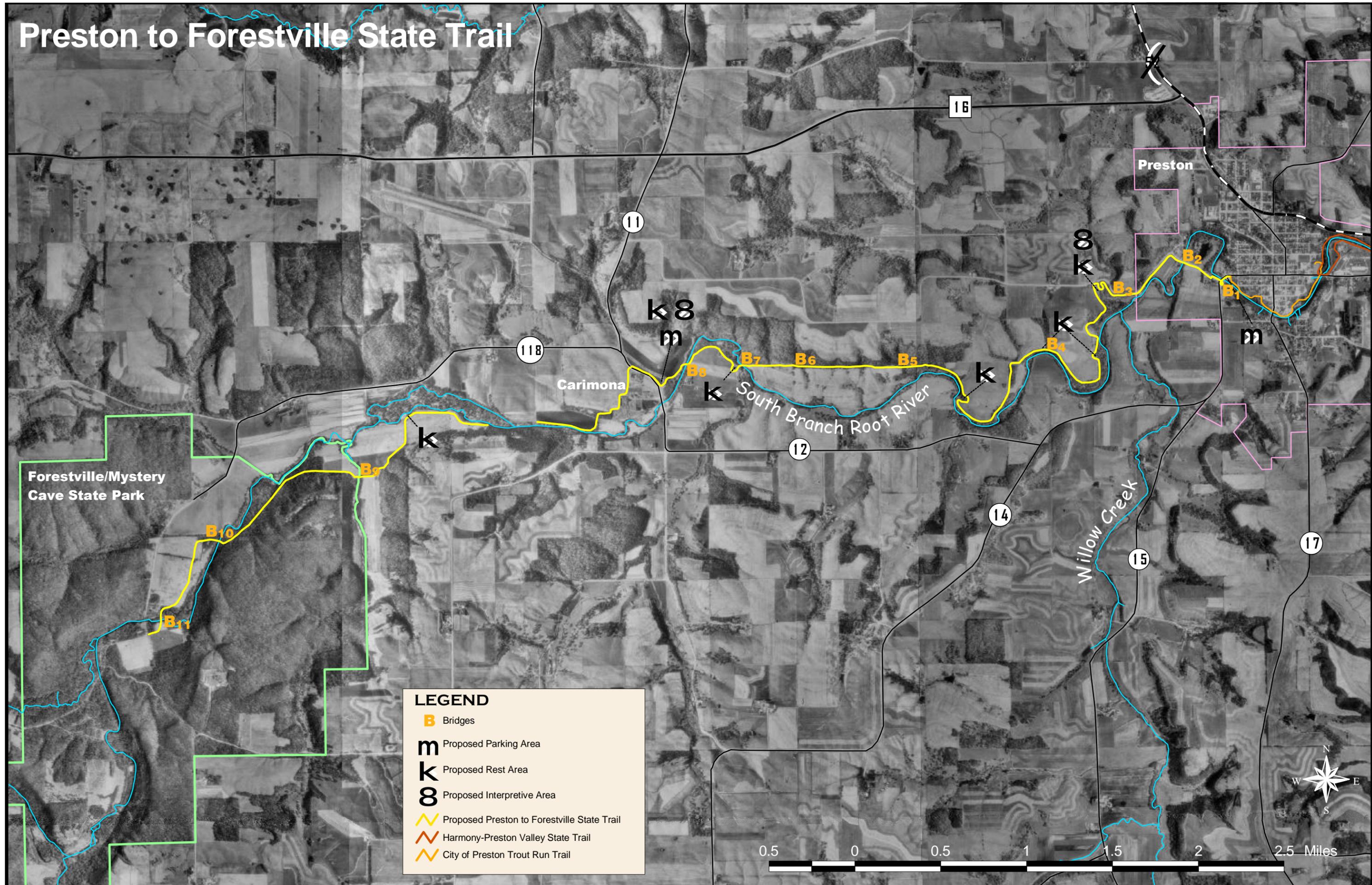
The endpoints of the trail addressed in this master plan are Historic Forestville in Forestville State Park and the canoe launch in Preston, located at the junction of County State Aid Highway 12 and the South Branch of the Root River.



Fillmore County



# Preston to Forestville State Trail



**LEGEND**

- B** Bridges
- m** Proposed Parking Area
- k** Proposed Rest Area
- 8** Proposed Interpretive Area
- Yellow line** Proposed Preston to Forestville State Trail
- Orange line** Harmony-Preston Valley State Trail
- Blue line** City of Preston Trout Run Trail



# Preston to Forestville State Trail Alignment and Development

## Trail Surface and Width

The Preston to Forestville State Trail will be developed with an asphalt surface, ten feet wide.

## Trail Access and Parking Areas, Rest Areas, Interpretive Sites

Preston	<i>Preston trail access/parking/rest area.</i> The existing trail access/parking/rest area for the Harmony-Preston Valley State Trail will serve as a trailhead/rest area for the Preston to Forestville State Trail. There is sufficient parking capacity here to accommodate trail users going to the Harmony-Preston Valley State Trail or to the Preston to Forestville State Trail. There are existing restrooms and an information kiosks at this site. The addition of trail orientation and interpretive information for the Preston to Forestville State Trail is recommended
Bridge 1	A bridge over the South Branch of the Root River, paralleling the existing County State Aid Highway 12 (Fillmore Street) bridge will be developed. Currently funding is available for construction of this bridge.
Bridge 2	A bridge over the South Branch of the Root River is needed.
Bridge 3	A bridge over the ravine is required here.
Hillside Rest Area	Due to the slope of the trail here, a rest area will be appreciated by trail users at this location. Scattered picnic tables, plantings of native vegetation and interpretive signs relating to the history of this farm and farming in the Blufflands are recommended
Rock Outcrop Rest Area	The rock outcrop, studded with wildflowers including harebells and columbine is a scenic highlight. A pull-off, picnic table and interpretive sign are recommended here.

Bridge 4 and Rest Area	Development of a bridge over the ravine at this location is required. This site is another scenic highlight of the trail. The wooded ravine has been eroded and the bedrock exposed. A rest area on the west side of the bridge is recommended.
Wooded Rest Area	Development of a rest area that includes a picnic table and interpretive sign is recommended here.
Bridge 5	A bridge over the ravine at this location will be developed.
Overlook Rest Area and Interpretive Site	The scenic vista of the valley located here is a highlight of the trail. Trail users will want to stop to appreciate the view. A picnic table and interpretive sign is recommended for this site.
Bridge 6	A bridge over the ravine located here is required.
Bridge 7	A bridge over the South Branch of the Root River will be developed at this location. Access to the river for fishing will also be provided.
Rest Area	Due to the slope of the trail here, a rest area will be appreciated by trail users at this location.
Bridge 8 - South Branch of the Root River	A bridge over the South Branch of the Root River will be developed at this location. Access to the river for fishing will also be provided
Carimona	<i>Carimona trail access/parking/rest area</i> A small parking lot, rest area and information kiosk is recommended for this site.
Rest Areas and Access to Fishing	There are several areas in this stretch where the trail right-of-way will extend to the river. This provides opportunities for access to fishing.
Forestville State Park	<i>Forestville State Park rest area and interpretive site</i> Forestville State Park will not be identified as a major parking area and access to the trail. However, it is anticipated that this will occur. An existing parking lot will be identified to serve this function.
Bridge 9	A bridge over an unnamed stream is required here.
Bridge 10	A bridge over the South Branch of the Root River is required here.
Bridge 11	A bridge over the South Branch of the Root River is required here.

## **Interrelationship of the Preston to Forestville State Trail and Preston**

### **History**

Settled originally in 1853, Preston was actually platted two years later when it was named by its founder, mill owner, John Kaercher. The name was chosen to honor Kaercher's millwright, Luther Preston. Soon after, when a post office was established, Luther Preston became the community's first postmaster.

Located on the south Branch of the Root River, the city's early history was closely tied into its development as a center for flour milling and the struggle to gain railroad access to the markets of the day. After establishing the depot at Isinours, a narrow gauge railroad (the Caledonia, Mississippi and Western) reached Preston in 1879. However, it was not until 1903 that a standard gauge railroad connected Preston to Isinours. The citizens of Preston, worked to get the railroad to construct a line from Preston to Isinours on the condition that the community would provide the right-of-way free of charge to the railroad. This accomplished, the first trail traveled over the new link on November 23, 1903.

The first county seat of Fillmore County was located in Chatfield; a short time later it was moved to Carimona; and finally, in 1856 it was permanently placed in Preston. On June 10, 1856 the first term territorial court was held by Judge Welch. By the fall of 1859, the Fillmore County commissioners voted to build a courthouse for a cost of less than \$6,000. Preston was incorporated as a village on March 4, 1871.

The closing years of the nineteenth century saw Preston as a growing diversified community. Its role as a milling and agricultural service center was being augmented by a number of other businesses and service functions. The Preston Foundry was one of several growing industries. In addition to the variety of stores and shops, the village boasted two hotels. – the Park Hotel and the Tibetts House.

### **The Community Today**

The population of Preston is 1,530. While the original courthouse has been replaced, there is a distinctive courthouse square within the center of the downtown district. Restaurants, stores, and shops around the square offer most of the goods and services needed by residents and visitors alike. Additional businesses, including a hilltop supper club overlooking the city and the valley are located along Highway 52 to the north of downtown. Overnight accommodations include a motel and two bed and breakfasts. One of these B&Bs (the former county jail) has been remodeled into a 12 room historic inn and listed on the National Register of Historic Places. A public swimming pool, parks, tennis courts, and a golf course are additional recreation resources available to visitors. Trout fishing is as close as the river flowing through the city. Forestville and Mystery Cave State Park are located eight miles west of the city.

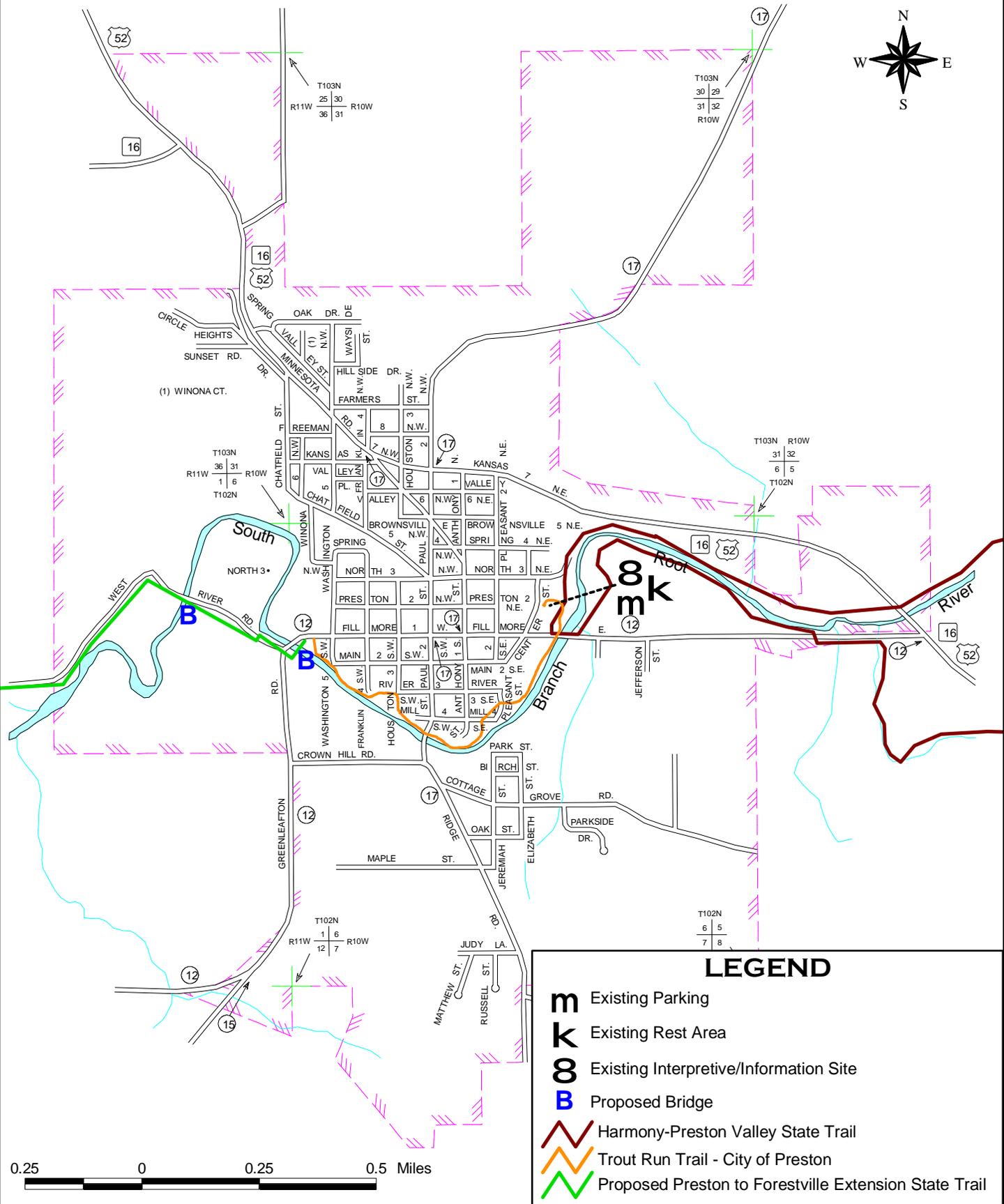
## **Trail Alignment**

The Preston to Forestville State Trail will begin in the west central part of the community near the South Branch of the Root River, where the exiting Trout Run Trail ends. Approximately ½ mile of the trail will be located within the corporate limits of Preston. The Trout Run Trail parallels the South Branch of the Root River and connects the Harmony-Preston Valley State Trail on its eastern end to the Preston to Forestville State Trail.

## **Role of the Community**

Preston will serve as a trailhead and rest area for trail users. The existing trailhead for the Harmony-Preston Valley Trail will also serve as the trailhead for the Preston to Forestville State Trail. Currently, parking and restrooms are available at the trailhead. Trail orientation and interpretive information for the Preston to Forestville State Trail should be developed and displayed at the trailhead.

# City of Preston



### LEGEND

- m** Existing Parking
- K** Existing Rest Area
- 8** Existing Interpretive/Information Site
- B** Proposed Bridge
- Harmony-Preston Valley State Trail
- Trout Run Trail - City of Preston
- Proposed Preston to Forestville Extension State Trail

## **Interrelationship of the Preston to Forestville State Trail and Forestville/Mystery Cave State Park**

### **Park Highlights**

Forestville State Park is located approximately halfway between Spring Valley and Preston. There are two spatially separated units to the park. One area encompasses the entrances to Mystery Cave and is located five miles west of the main park. The main park includes the campground, picnic area and trail system. Forestville/Mystery Cave State Park received 132,905 visits in 2002.

Park visitors can experience the resources of the Blufflands landscape at Forestville State Park in a variety of ways. The park's trail system provides views and vistas of the bluffs and valleys that define the landscape. Up-close views of wildflowers and landscape perspectives of the plant communities that define the landscape can be experienced. The park includes large areas of oak woods. Other plant communities in the park include oak savanna with oak and prairie species; northern hardwoods with maple and basswood; lowland hardwoods with cottonwood and ash; small areas of white pine; upland brush; and restored prairie. Blooming spring ephemerals such as bloodroot, hepatica, wild ginger, trout lilies, and Dutchman's breeches carpet the understory in May and June. Asters, goldenrods, and blazing stars of the prairie bloom in July and August. The park is an excellent place for birdwatching. Hawks, owls, scarlet tanagers, and wild turkeys can be seen in the park. Park visitors can observe other wildlife including deer, beaver, raccoon, opossum, squirrels, and fox.

Three cool and swift flowing streams, the South Branch of the Root River, Canfield Creek and Forestville Creek, are considered among the best trout waters in the state. Tours of Mystery Cave provide the opportunity to learn about the unique karst geology of this area. Mystery Cave is comprised of a system of linear corridors. Over 12 miles of passages exist in two rock layers.

The Minnesota Historical Society manages Historic Forestville, a thriving, rural trade center in the mid 1800s. The railroad bypassed the town in 1868, which led to the town's decline. Thomas Meighen, son of the town's founder, owned the entire village by 1890. The town's remaining residents made their living on his farm. The Meighen Store, still stocked with the products and goods that were sold there at the turn of the century, tells a story of what life was like at that time. Costumed guides portray residents and daily activities that occurred there including farming, gardening, and cooking.

The park provides a variety of recreational opportunities including camping, picnicking, stream fishing, and trail recreation. The park has 17 miles of hiking trails, 15 miles of horseback riding trails, 11 miles of cross-country ski trails and 6 miles of snowmobile trails.

### **Criteria for locating trail alignment**

Provide access to the park; its resources and recreational opportunities.

Use existing corridors where possible.

Protect sensitive plant species and communities.

Protect archaeological resources.

Minimize the impact to Historic Forestville and integrate trail design into the historic context.

Provide a satisfying trail experience

Avoid displacing existing park users

### **Trail Alignment**

The map on page 24 illustrates the recommended alignment of the Preston to Forestville State Trail in the state park. The trail will enter the park at the northeastern corner and proceed southwesterly, cross the South Branch of the Root River, parallel the South Branch of the Root River, following the alignment of the River Bottoms Trail for a distance of approximately 0.3 of a mile. A trail bridge will cross the South Branch of the Root River near the Historic Site and end near the parking lot for the historic site. Bicycle racks will be provided here and trail users invited to explore Historic Forestville on foot.

This alignment is consistent with the Forestville State Park Management Plan which recommends:

“Action 1: Work with Fillmore County and the Bluffland Trail Joint Powers Board to provide a bicycle trail through the park on a widened shoulder or in the vicinity of the road right-of-way on County Road 118 and CSAH 12. Where it is possible, consideration will be given to separating the trail from the road for safety. If the through-park motor vehicle traffic is rerouted seasonally, there would be less need to separate the treadway from the road.”

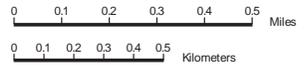
The future of the existing county bridge and County Road 118 in the park is uncertain. Future decisions regarding bridge closing or bridge replacement will affect a final trail alignment. The Forestville State Park Management Plan included alternatives for closing the road through the park, either seasonally or permanently. In the event a permanent closure would occur before trail development, the existing historic bridge could be used as an alternative to building a trail bridge over the South Branch of the Root River.

Additional studies and site analysis are recommended that will produce illustrations of what trail development (including the location of a bridge over the south Branch of the Root River) will look like from various perspectives. The purpose of this analysis will be to identify the alternative that minimally impacts the historic site.

The trail will end near the parking lot for the historic site. Bicycle racks will provided here and trail users invited to explore the historic site. This master plan for the Preston to Forestville State Trail will address trail alignment to this point. Subsequent planning processes will address future trail alignment to Mystery Cave and on to Ostrander and Spring Valley.

**Role of the Park**

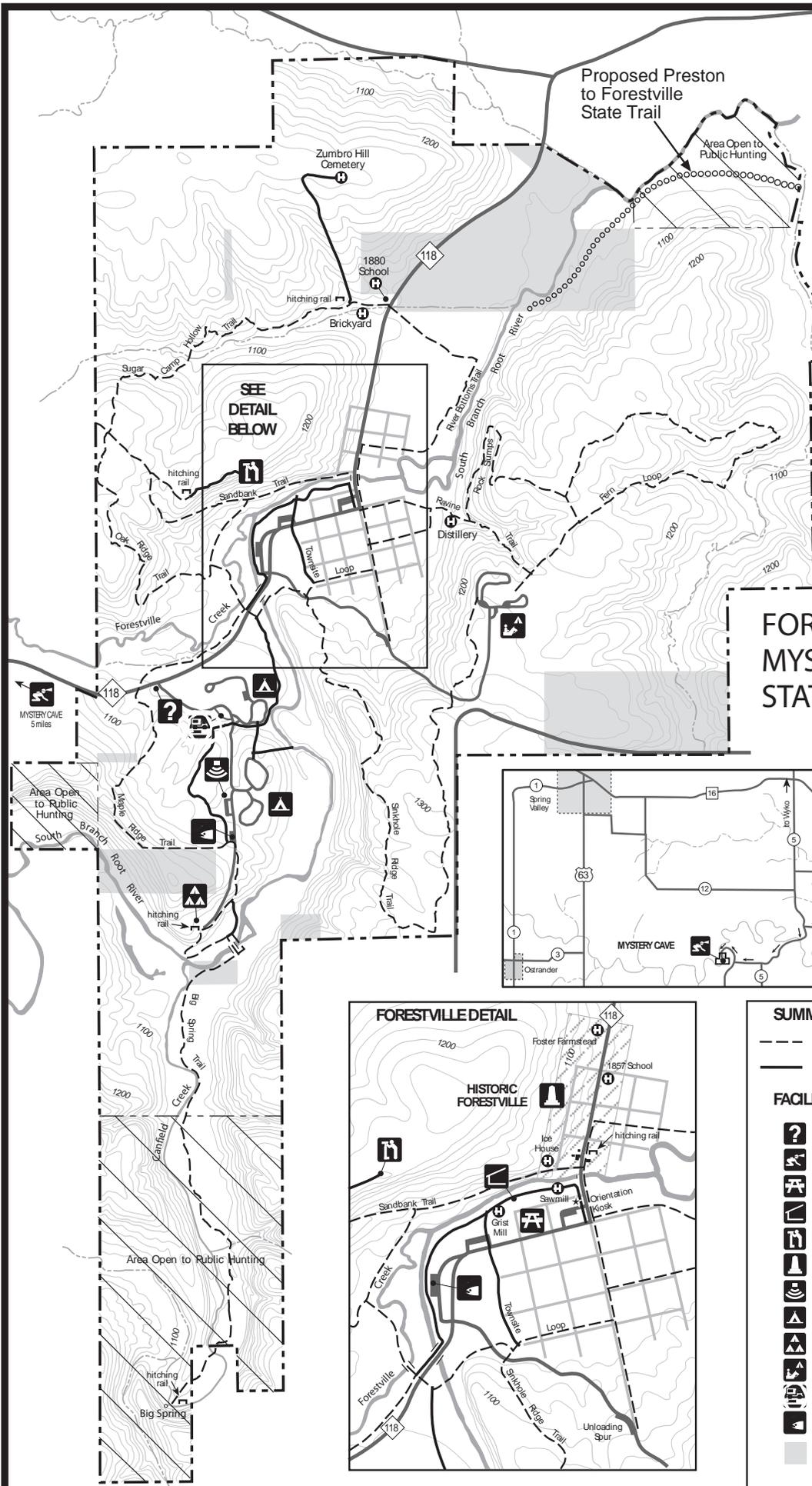
Forestville State Park will serve as a destination for trail users originating in Preston, Carimona, Fountain, Harmony and other points on the developed Root River State Trail and Blufflands System. It is anticipated that the park will also serve as a trailhead for some trail users, but the park will not be promoted as a major access to the trail. That role will be provided by other communities. However, people coming to the park to use the trail will require parking. They will be directed to use an existing parking lot. Information directing them to the trail should be provided here.



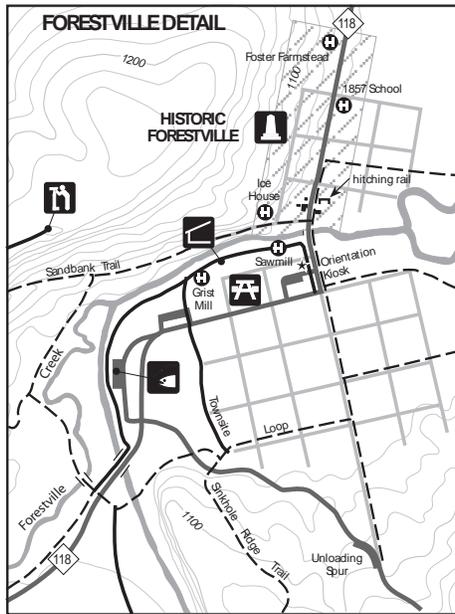
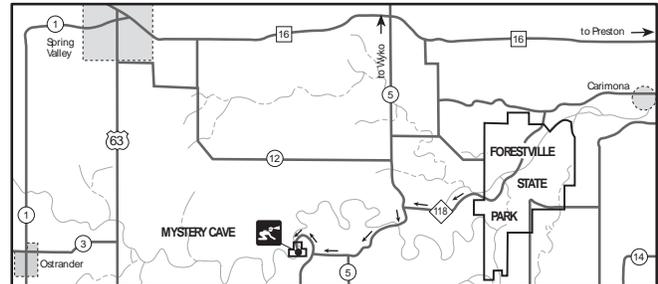
Because lands exist within the boundaries of this park that are not under the jurisdiction of the D.N.R., check with the park manager if you plan to use facilities such as trails and roads other than those shown.

Proposed Preston to Forestville State Trail

# FORESTVILLE/ MYSTERY CAVE STATE PARK



**SEE  
DETAIL  
BELOW**



### SUMMER TRAILS

- Horseback/Hiking
- Hiking

### FACILITIES

- ? Information/Office
- Mystery Cave
- Picnic Area
- Shelter
- Overlook
- Historic Site
- Amphitheater
- Campground
- Primitive Group Camp
- Equestrian Camping
- Trailer Sanitation Station
- Angler's Parking Lot
- Private Property
- Public Use Prohibited (except on designated trails)

# Projected Trail Use

## State Trail Use As an Indicator of Future Use

It is anticipated that the number of trail users and pattern of use will be similar to what is occurring on other state trails. The following table summarizes the summer use (Memorial Day to Labor Day) for the other asphalt trails in the state system. Use is measured in user hours. (A trail user spending one hour on the trail is a user hour.)

**Trail User Hours**

	<u>Total Seasonal User Hours</u>	<u>Miles of Trail in Survey</u>	<u>User Hours per Trail Mile</u>
<b><u>High Local Use</u></b>			
Douglas - Summer 1997	42,910	12.5	3,433
Gateway - Summer 1997	181,952	18.5	9,835
Luce Line - Summer 1998	65,120	29.0	2,246
<b><u>High Tourist Use</u></b>			
Heartland - Summer 1998	125,381	27.0	4,644
Paul Bunyan - Summer 1996	155,268	46.4	3,346
Root River - Summer 1997	178,761	40.8	4,381
<b><u>Mix Local/Tourist Use</u></b>			
Glacial Lakes - Summer 1998	33,858	18.0	1,881
Paul Bunyan segment, near Lake Bemidji State Park - Summer 1998	17,488	5.3	3,300
Sakatah Singing Hills - Summer 1998	95,634	38.0	2,517
<b><i>All Trails</i></b>	<b><i>896,373</i></b>	<b><i>236</i></b>	<b><i>3,806</i></b>

It is anticipated that the Preston to Forestville Trail will experience use patterns similar to the Root River State Trail. This trail receives a majority of use from tourists, or people from beyond the local area.

## Trail Use on the Root River State Trail By Segment

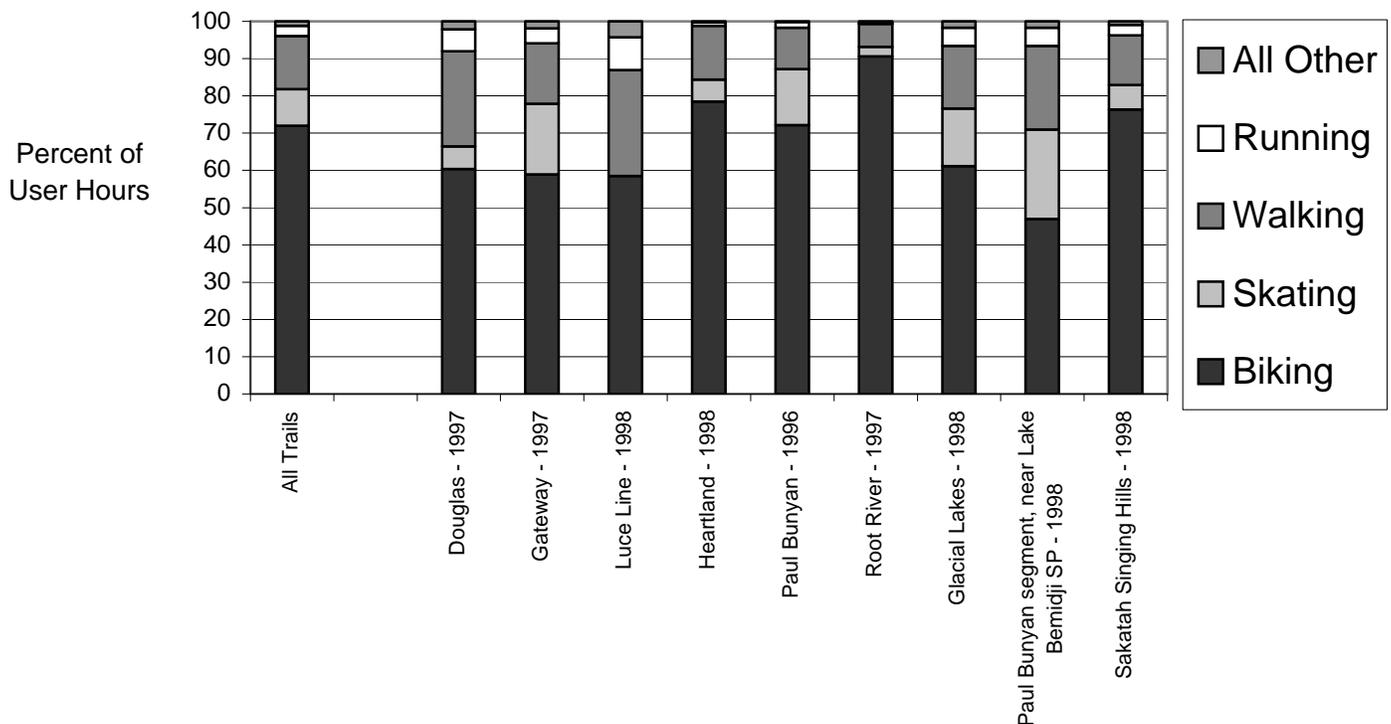
The use on the Root River State Trail varies by segment. A 1997 survey of summer trail users indicated use illustrated in the table below.

	Total Seasonal User Hours	Percent of User Hours	Miles of Trail in Survey	User Hours per Trail Mile
<b>Entire Trail</b>	178,761	100.0	40.8	4,381
<b>Trail Segment</b>				
Fountain to Preston	37,978	21.2	12.0	3,165
Isinours to Whalan	83,958	47.0	9.3	9,028
Whalan to Peterson	31,921	17.9	8.9	3,587
Peterson to Rushford	18,578	10.4	4.8	3,870
Rushford to Money Creek Woods	6,327	3.5	5.8	1,091

## Potential Trail Use By Trail Activity

The use pattern observed on other state trails can also provide insight into the mix of trail activities that can be expected. As the table below illustrates, bicycling will most likely be the predominant activity, followed by walking, then in-line skating.

Trail Activities



# Trail Maintenance

Adequate maintenance of the Preston to Forestville State Trail is critical to provide and sustain the experience trail users appreciate. Maintenance activities are numerous and diverse, as the following list illustrates. Specifically, maintaining the Preston to Forestville State Trail will include:

- Monitoring trail conditions, which includes scheduling and documentation of inspections; monitoring the condition of railings, bridges, trail surfaces, and signage; hazard tree inspection; and removal of debris such as downed trees
- Scheduling of maintenance tasks
- Mowing of vegetation: shoulders, rest areas, and parking lots
- Winter grooming and plowing
- Tree and shrub pruning
- Trash removal
- Trail repair – fixing washouts and controlling erosion are examples
- Maintaining bridge decking and railings
- Trail drainage control
- Trail surface maintenance
- Repair of animal damage to trail or facilities
- Checking and repairing fence lines and gates
- Mowing and brushing farm crossings
- Cleaning out ditches and culverts, replacing failing culverts
- Controlling noxious weeds
- Maintaining equipment
- Painting posts and picnic tables
- Graffiti control and vandalism repair, especially to signs
- Maintaining boundary signs, and working to resolve encroachment issues
- Coordination of volunteer efforts
- Training and supervision of employees, Minnesota Conservation Corps, or Sentence to Service crews
- Sweeping the asphalt surface

### ***Maintenance Recommendations***

***Recommendation 1: Additional maintenance funds will be required to maintain the trail after it is developed.***

***Recommendation 2: The Division of Trails and Waterways is responsible for maintenance and management of designated state trails. However a portion of this trail is located in Forestville/Mystery Cave State Park, managed by the Division of Parks and Recreation. To assure appropriate protection of state park resources, viewsheds and facilities immediately adjacent to the trail, trail managers will work with park staff to establish standards and parameters for maintenance activities on state trails within or segments of state trails passing through the state park. Local trail managers will plan, schedule, and coordinate maintenance activities following these guidelines with the appropriate park manager.***

***Recommendation 3: A memorandum of understanding will be developed between the two Divisions to address these trail maintenance issues, as well as other issues related to the operation of the state trail within the state park.***

***Recommendation 4: The trail should be seal coated approximately six years after initial development. Research shows that this will prolong the life of the trail.***

# 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, 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 resulting in a change in user experience, it should be noted on the informational kiosks to assist trail users in understanding what the trail experience will be. For example, if there is a change when the trail enters a community.



Trail orientation signs such as this one located on the Luce Line State Trail will be developed for the Preston to Forestville State Trail

## **Identification of Services**

Trail users benefit from knowing where they can obtain services (medical assistance, telephones, gasoline, food, lodging, rest rooms, campgrounds, repair facilities, or other retail) and local businesses benefit from an increase in customers. A listing of the services available in each community developed, maintained and updated by the community could be displayed on information boards at parking areas in each community.

## **Trail Rules and Regulations and Trail Courtesies**

Trail courtesy and safety display boards aimed at educating trail users about appropriate behavior, promoting safe trail use, and protecting the quality of the trail environment should be developed. These user-friendly versions of the rules applying to state trails should be posted at information kiosks along the trail and included in trail maps.

Volunteer patrols could be used to distribute information on appropriate trail behavior and etiquette relative to specific problems such as unleashed dogs, or all trail users keeping to the right and warning others when passing.

## **Interpretation of Natural and Cultural Resources**

There are many natural and cultural resources of significance and interest along the trail. These include the South Branch of the Root River and vegetation and wildlife of the Blufflands landscape. In addition, there are several places that tell the history of this region. Providing information about these resources can add enjoyment to the trail experience.

An interpretive theme is identified for state trails during the planning process. The interpretive theme helps tie together spatially separated interpretive sites and provides a continuity in the messages. Agriculture is the dominant activity in the region influencing land, water, economics, social lives, etc. The recommended interpretive theme for the Preston to Forestville State Trail is: How the natural resources of the Blufflands Landscape has affected land use over time, specifically tying in the history of Historic Forestville, Carimona and Preston.

Other interpretive elements include: Geology, trout fishing, plant communities and plant species found in and adjacent to the corridor, wildlife species likely to be observed by trail users, and the South Branch of the Root River.

Interpretive signs will be developed in consultation with other DNR divisions and the Minnesota Historical Society (MHS). Some initial ideas are listed in the development summary. Additional sites will be interpreted over time.

Each state park has interpretive themes, programs, and signs for interpreting its cultural and natural resource setting covering the themes identified for the state trail as well as others. Coordination between the Division of Parks and Recreation and Division of Trails and Waterways in developing interpretive displays and programming will benefit park visitors and trail users

### ***Information and Education Recommendations***

***Recommendation 1: Develop a kiosk design that reflects the interpretive theme for the trail that can be used in communities and at rest areas along the trail***

***Recommendation 2: Community services information, trail orientation, and trail rule and trail courtesy information should be developed and installed on a kiosk at the same time the trail is developed.***

***Recommendation 3: Trails and Waterways should cooperate with schools to use the trail for environmental education purposes.***

***Recommendation 5: Interpret the natural and cultural features along the trail. Include information on the fishing opportunities of the trail. The Division of Fisheries local offices and MinnAqua staff should be consulted as resources.***

# Enforcement

Enforcement activities are a vital aspect of maintaining a safe and secure trail environment. Enforcement of state trails rules and regulations, information and education, trail design, trail maintenance of the mix of trail uses are all factors that contribute to the maintenance of a safe, secure trail environment. DNR has the primary responsibility for law enforcement on DNR-owned and operated recreation areas.

Adequate enforcement was cited by participants of the planning process as a way of resolving potential problems and addressing concerns. User conflicts, unauthorized use of the trail, and trail users leaving the treadway designated for their use, were among the concerns identified during the planning process as likely areas where enforcement attention would be needed.

Funding for law enforcement on state trails has not kept pace with the need created by new trail development. When miles are added to the system, funds for the additional law enforcement needed have not been appropriated. Sufficient law enforcement promotes public safety and natural resource enhancement.

***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, specific to uses of a particular segment and problems and conflicts occurring there.***

***Recommendation 3: Use increased visibility of Trails and Waterways staff during peak use times for an enforcement effect.***

***Recommendation 4: Additional enforcement officers are required to address the enforcement need of the expanding trail system.***

***Recommendation 5: Trails and Waterways will include the cost of enforcement when providing information about the cost of the trail when communicating with legislators trail advocates, and local government officials***

***Recommendation 6: Trails and Waterways will work with state park staff to coordinate enforcement and oversight of other trail related activities so that the safety of trail users and successful operation of the state trail will be ensured. This will be addressed in the operational memorandum of understanding between the Division of Trails and Waterways and the Division of Parks and Recreation.***

## Adjacent Landowners

A goal for the Preston to Forestville State Trail is to work with adjacent landowners to address their concerns. Primary concerns of adjacent landowners to proposed trails are trespass, vandalism, litter, crime, and loss of privacy. Liability is another frequently voiced concern.

Several studies have shown that trespass, vandalism, litter, crime, and invasion of privacy have not been problems experienced after trail development. “A 1988 survey of greenways in several states has found that such parks typically have not experienced serious problems regarding ...vandalism, crime, trespass, or invasion of privacy....Prior to developing park facilities, these concerns were strongly voiced in opposition to proposed trails. After park development, however, it was found that fears did not materialize...concerns expressed by the neighbors opposed... have not proven to be a post-development problem in any of the parks surveyed. (“A Feasibility Study for Proposed Linear Park,” Oregon Department of Transportation, Parks and Recreation Division, May 1988.) According to surveys on the Root River State Trail and Douglas State Trail taken before and after trail construction, perception of potential problems by adjoining residents exceeded actual problems by wide margins. There are other studies that document similar findings.

DNR Trails and Waterways will work with adjacent landowners to address their issues and concerns. Strategies that can be used to address concerns include trail design details, screening (fencing and vegetation), enforcement of state trail rules and regulations, and trail user education. For example, the placement of the trail treadway within the right-of-way, development of cattle passes, and grading are strategies that have been used to address landowner concerns. Fencing and vegetative screening can be used to address privacy issues. Citations are issued when state trail rules and regulations are violated, such as when unauthorized use of the trail occurs. Trail user education that emphasizes respecting adjacent landowner’s property is also emphasized.

DNR Trails and Waterways strives to be a good neighbor and resolve concerns promptly. Trails and Waterways staff who manage the trail will work with adjoining landowners to prevent or correct problems.

## Blufflands Subsection

The Preston to Forestville State Trail is located in the Blufflands subsection of the state's ecological classification system. A subsection is a distinct landscape of Minnesota defined by vegetation, geology and other resource criteria.

The source of the following description of the subsection is found on the DNR website:  
[http://www.dnr.state.mn.us/ecological\\_services/ecs/broadleaf/ecs\\_x.html](http://www.dnr.state.mn.us/ecological_services/ecs/broadleaf/ecs_x.html)

The west boundary is complex, following major river valleys. Loess (windblown silt) cover thins to the west). The northern boundary marks the northern extent of loess deposits. There is also small outwash plain that marks the northern boundary. This unit consists of an old plateau covered by loess and then extensively eroded along rivers and streams. It is characterized by highly dissected landscapes associated with major rivers in southeastern Minnesota. Bluffs and deep stream valleys (500 to 600 feet deep) are common. River bottom forests grew along major streams and rivers.

### Landform

The area is a loess-capped plateau, deeply dissected by river valleys. The greatest amount of relief occurs along the Mississippi River, where relief is up to 600 ft. In the east, loess lies directly on bedrock. In the southeast, loess overlies red clayey residuum that was formed directly from limestone and/or sandstone. Paleozoic sedimentary rocks crop out in valley walls, but are generally mantled with colluvium or loess. Topography is controlled by underlying glacial till along the western edge of the subsection, where loess is several feet thick. As glacial drift thins to the east, topography is largely bedrock controlled (Dept. of Soil Science, Univ. of Minnesota 1973). Sinkholes are common in the southwestern portion of the subsection.

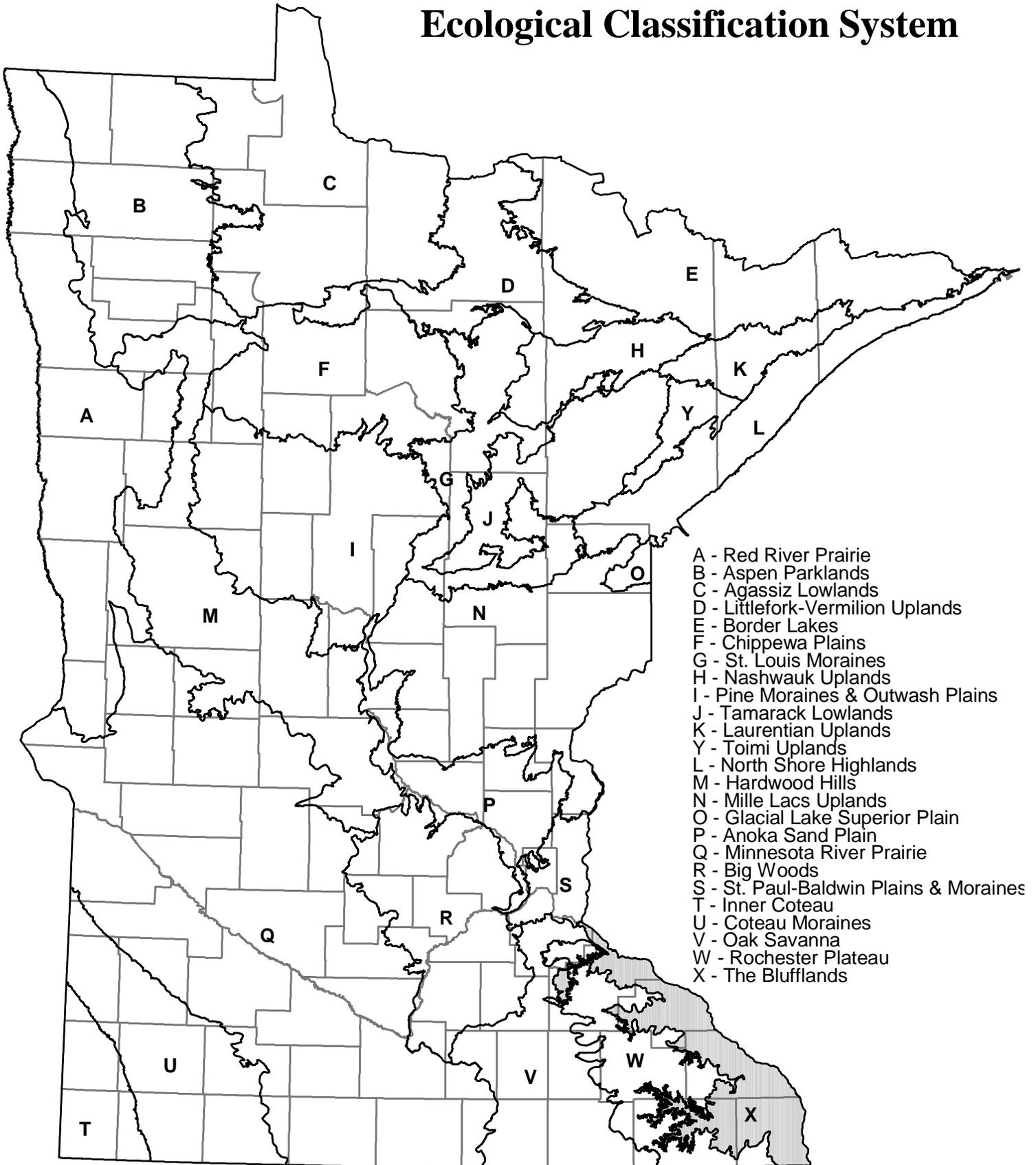
### Bedrock geology

Depth of drift over bedrock varies from 0 to 50 feet. Bedrock is exposed in river and stream valleys. In general, sediment thickness varies by landscape position. Large exposures of bedrock occur in the steep ravines. These exposures are primarily Ordovician dolomite, limestone, and sandstone with Cambrian sandstone, shale, and dolomite exposed along the valley walls of the Mississippi River (Morey 1981, Sims et al. 1966). Devonian dolomite and limestone are more locally exposed along the western edge of the subsection.

### Soils

Loess thickness is variable: loess deposits are as thick as 30 feet on broad ridgetops, to less than a foot on valley walls. The predominant soils are Udalfs, with localized Aquents along the floodplains of major rivers (Cummins and Grigal 1981). Cambrian siltstones, sandstones, and shales influence soil properties.

# Ecological Classification System



## Climate

The subsection has a continental climate. Annual normal precipitation ranges from 29 inches in the western portion to 34 inches in the southeast (Midwest Climate Center 1992). Growing season precipitation ranges roughly from 11 to 16 inches and growing season length ranges from 136 to 156 days.

## Hydrology

There are no lakes in this subsection. The drainage network is well developed and dendritic (branch-like) in nature. Major rivers include the Mississippi (which forms the eastern boundary), Root, Whitewater, Zumbro, and Cannon. There are numerous coldwater trout streams throughout the subsection.

## Presettlement vegetation

Tallgrass prairie and bur oak savanna were major vegetation types on ridge tops and dry upper slopes. Red oak, white oak, shagbark hickory, and basswood grew on moister slopes, and red oak, basswood, and black walnut forests in protected valleys. Prairie was restricted primarily to the broader ridge tops, where fires could carry, but also occurred on steep slopes with south or southwest aspect.

## Present vegetation and land use

About 30 percent of this subsection is cropped, 20 percent is in pasture and 50 percent is in woodland (Dept. of Soil Science, Univ. of Minnesota 1973). In Minnesota, Wheeler et al. (1985) found species characteristic of oak openings and barrens to be abundant (based on herbarium collections). People are finding good recreational opportunities in this subsection.

## Natural disturbance

Fire was important on the upland prairie and oak dominated ecosystems. Recent records of tornados and ice storms indicate that they locally impacted forest vegetation.

## Conservation concerns

A major concern is groundwater quality. The groundwater has high amounts of nitrates and phosphates. These pollutants are mainly the result of agricultural activities. There are numerous high quality coldwater trout streams in the subsection. Many individuals are working to make sure that their quality is not degraded. Control of soil erosion is another conservation concern.

# Geology

The Blufflands Trail System is located within the Blufflands landscape of southeastern Minnesota. In contrast to most of the land in Minnesota, this region was glaciated so long ago that little or no evidence of glaciation remains. Unlike most of the landscape in Minnesota and the Midwest as a whole, the regional landscape found here is very old and highly dissected. Steep hills, bluffs, and deep river valleys are the dominant features. This is what makes the trail so scenic, and trail development so challenging.

Total relief is approximately 650 feet. Level land occurs at an elevation of about 1300 feet and below 800 feet. The land is steep and rocky between these two extremes. Exposed rock is abundant and visibly divided into varying strata, which erode at different rates and occupy different levels in the landscape.

Precambrian bedrock or the archaic igneous and metamorphic rock at the earth's crust, is several hundred feet to perhaps 1,500 feet below the land surface. Soils, some of which are thin layers of windblown loess, range up to a thickness of 20 feet and may cover older glacial till. Between the overlay of soil and the Precambrian bedrock lie hundreds of feet of Paleozoic rock. Paleozoic rock is sedimentary rock (limestone, shale, dolomite and sandstone) that was originally deposited by the advance and retreat of shallow inland seas. These rock layers range in age from 350 to 600 million years old. Paleozoic means "ancient life", which is reflected in the fact that abundant fossils of early sea life will be found in certain layers of limestone, such as the Galena, Maquoketa, and Platteville formations.

The oldest rock formations are exposed in the extreme eastern part of the region, near the Mississippi River. The reason for this phenomenon is that the ancient underlying bedrock (Precambrian) dips to the southwest at an average rate of 15 feet per mile. Although this bedrock dips in a westerly direction, the earth's surface actually rises due to the presence of younger, less eroded deposits over the older rock strata when moving west.

After the final retreat of the Paleozoic seas, some 300 million years ago, the regional landscape was subjected to great change through the action of wind, ice, and moving water. The Pleistocene Ice Age began about 2 million year ago and ended about 10,000 years ago. There were several different episodes of glaciation and interglacial periods. While much of the Blufflands escaped the last period of glaciation (Wisconsin Ice Stage), which lasted until about 13,000 years ago, the area may have been subjected to glacial activity over 500,000 years ago. This is thought to be about the time the Mississippi River was formed.

The process of down cutting of streams, which probably occurred during mostly the last 160,000 years, was aided by the enormous quantities of glacial melt waters from the north and west. Ancient drainage ways were enlarged and new ones were carved out of the rock layers. The deep Root River valley, along with other manor stream valleys in the area, is a product of this sculpting action by glacial waters. Glacial melt waters eroded the more resistant rock strata, dolomite and limestone, into narrow, steep sided channels and gorges. At elevations where the

more easily eroded sandstone strata predominated, the resulting valleys became broad plains. This pattern of erosion continues today.

In addition, when a stream flows from a limestone or dolomite formation to sandstone, its gradient increases because of the more rapid erosion of the sandstone. The resulting rapids or waterfalls were often used by early settlers to power mills at these locations. Communities usually developed around these early mill sites. At Preston, opposite the site of the old mill, Jordan Sandstone and Oneota Dolomite are exposed. The waterpower for the mill was derived from the drop from the Oneota to the Jordan formation.

The Root River valley has a dendritic or branchlike drainage pattern, which dissected the layers of rock over a very long period of time. With the diminishing of glacial meltwaters, the valley was filled with a fine alluvial material. Renewed down cutting of the Root and its tributaries left remnants of these higher valley floors. Called stream terraces, these remnants can be seen along much of the valley. The predominant strata throughout most of the Root River Valley region are the Prairie du Chien formations of the Shakopee and Oneota Dolomite and Jordan Sandstone. These formations are commonly seen as the Root River State Trail enters Fillmore County and twist and turns while traveling west within the confines of the narrow valley floor. In some locations step cuts in the rock strata closely border the trail's treadway. At other trail sections, stream terraces and broader farm fields may be viewed. The topography is varied and interesting throughout.

Moving west from Lanesboro toward Fountain, the traveler encounters a changing landscape. Considered as a transition zone between the river bottom to the east and the upland area to the west, there is a noticeable rise in elevation and the topography tends to flatten out. Here and there, relatively small circles of trees will be seen among the corn and soybean fields. This is especially noticeable to the west of Fountain. These circles are actually the outer boundaries of steep sided, rocky holes that were formed from dissolving limestone.

Called a karst landscape, these holes or sinks in the ground are common in the western half of Fillmore County and other areas of southeastern Minnesota. The sinks range in diameter from 30 – 150 feet and may be 30 feet deep. They form in areas of at least moderate rainfall, and where Galena Limestone, (one of the younger rock formations) is near the land's surface.

As the rain falls, it absorbs atmospheric carbon dioxide and becomes slightly acidic. Seeping into the ground, the rainwater picks up additional carbon dioxide and becomes a weak form of carbolic acid. Eventually, the underlying limestone dissolves leaving the sinks and caverns. The Galena Limestone in this area has been subject to this process for as long as 100 million years. Of major significance in the area are Mystery Cave located west of Preston in Forestville/Mystery Cave State Park. The entrance to Mystery Cave is located five miles west of where the trail ends. Concept plans call for the Blufflands Trail System to connect to Mystery Cave in the future. The cave is under about one half square mile of land and at depths of 40 to 150 feet below the surface (DNR, 1995).

# Water Resources

The Blufflands trail lies within the 1,670 square miles of the Root River watershed. Largest of the watersheds draining southeastern Minnesota into the Mississippi, The headwaters of the Root River originate in the spring-fed sloughs Olmsted and eastern Mower counties. Headwaters streams flow in wide, shallow valleys that cut through a thin mantle of glacial drift. They gradually deepen as these streams flow toward the east into the driftless area. As this network of streams enters Fillmore County, the valleys are incised to a level of 100 to 300 feet below the upland surface. In eastern Fillmore County and Houston County, they become deep, sinuous gorges that deepen and widen toward the east. Gorges of the Root River at Lanesboro, Rushford, and Hokah are 400 to 550 feet deep and from a quarter of a mile to one mile wide. Tributary streams, entering from the north and south, flow through steep walled coulees into the main branches of the Root. The eastern boundary of the watershed is the wide Mississippi River Valley with a depth of about 600 feet.

The western part of the Root River watershed is drained by numerous tributaries and three main branches (North, Middle, and South). The approximate fall of all branches from their sources to Lanesboro is about 550 feet. Beginning at Lanesboro, drainage is primarily through the main river channel, its South Fork, and four tributaries. The fall from Lanesboro to the Mississippi is approximately 150 feet.

The well-defined dendritic drainage pattern throughout the Root River watershed has eliminated most of the undrained depressions. Runoff is rapid in the deeply incised stream beds and steep valley slopes. Consequently, many disastrous flash floods have been recorded since the time of European settlement. Until conservation practices were initiated in the 1930s, floods were the nemesis of area farmers and several communities. Although still an environmental problem, measures have been implemented to prevent flooding or reduce some of its adverse impacts through proper land use planning.

Since the Root River watershed is devoid of lakes, streams are sustained by springs from groundwater sources. Huge quantities of groundwater are stored in the layers of dolomite, limestone, and sandstone that underlie the entire watershed. After the peak flows in spring and early summer have receded, the depletion of water in this natural storage occurs very slowly and the stream flow gradually diminished. Aquifers continue to supply accessible water throughout most of the watershed.

## **South Branch of the Root River**

The South Branch of the Root River has its source in the drainage ditches and field tiles of eastern Mower County. After flowing 19 miles, it sinks beneath the stream bed in the vicinity of Mystery Cave No 1, only to reappear after 4.5 miles of dry steam bed. This stream rebirth is from three cavern springs, just to the west of Forestville State Park. From this point, the South

Branch flows for another 36.8 miles to its juncture with the North Branch of the Root River below Lanesboro.

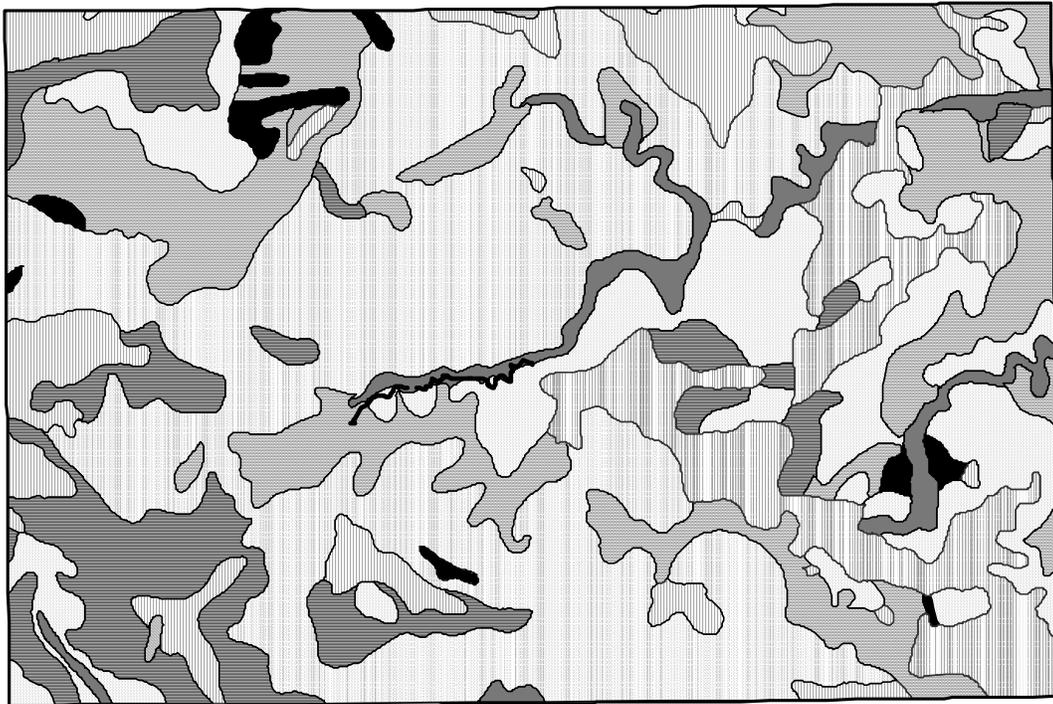
The headwaters of the South Branch are about 1300 feet above sea level and located in a relatively level landscape of rich sandy loam soil. Most of the watershed is farmed to the stream bed. By the time the stream reaches the North Branch of the Root, it has dropped more than 300 feet and is within a greatly changed environment. From Forestville to Lanesboro, the South Branch cuts through Shakopee or Oneota Dolomite, Jordan Sandstone, and St. Lawrence Dolomite. Steep, heavily wooded slopes and high bluffs predominate; cliffs of 120 feet are common and much of the remaining land is devoted to corn, other row crops or pasture. Nearly all of the land in the immediate watershed is in private ownership. Only five percent of the developed land is used for urban related purposes. The remaining 95 percent is used for agriculture.

***Recommendation 1: Minimize trail development and maintenance impacts to water resources through the use of mulching, geo-textiles, silt screens, and seeding to establish vegetation. Appropriate erosion control measures should be taken to minimize the potential impacts on adjacent water resources.***

***Recommendation 2: Strive to limit water crossings and obtain permits for any crossings.***

## Vegetation of Fillmore County at the Time of the 1853 –1854 Public Land Survey

The map below illustrates the vegetation of Fillmore County as interpreted by Francis J. Marschner using the Public Land Survey records from 1853-1854. The contemporary names used today for the natural community types defined by Marschner are listed in parentheses after Marschner's names.



∩ Proposed Route of Preston-Forestville Extension

- ▨ Prairie
- ▨ Wet Prairie
- ▨ Brush Prairie
- ▨ Aspen-Oak Land
- ▨ Oak openings and barrens
- ▨ Big Woods - Hardwoods (oak, maple, basswood, hickory)
- ▨ River Bottom Forest

*River bottom forest* (floodplain forest) These forests characterized the valleys of the Mississippi River, Root River, and other local streams. These lowland sites were subject to periodic flooding and drought. Frequent spring flooding enriched the soil by depositing silt over the forest floor. Dominant trees included silver maple, American elm, green ash, black willow, and cottonwood. Sedges, woody climbers, poison ivy, and stinging nettle were among the most common understory plants.

*Wet prairies, marshes, and sloughs* (wet prairie, seepage meadow, wet meadow, calcareous seepage fen) Large prairie wetlands were in the floodplains of all major waterways. Smaller prairie wetlands were found along trout streams and other small tributaries in seepage areas and old oxbow sloughs.

Prairie wetlands were also found in the upland swales of southwest Fillmore County. Rushes, sedges, cattails, blue-joint grasses and cordgrass dominated these areas.

*Upland deciduous forest* (maple-basswood forest, oak forest, lowland hardwood forest, white pine-hardwood forest, northern hardwood –conifer forest, black ash swamp). About half of Houston County and smaller areas of Fillmore County were once covered by maple basswood forests. Upland deciduous forests were dominated by sugar maple, basswood, elm, and also included moist forests dominated by red oak. This forest type was called the “big woods” by early settlers in the south-central part of the state, where it covered a contiguous area of over 3,000 square miles. These trees are fire sensitive and were partially protected by natural firebreaks of water courses and rough topography.

*Oak openings and barrens* (dry oak savanna, mesic oak savanna, jack pine barrens, oak woodland-brushland, oak forest) – Most of Fillmore County and significant portions of Houston County were included in the oak woodland and brushland vegetation type, a transition type between the prairie and deciduous forest. Fire, more than any other natural disturbance, influenced the position and extent of this community. These areas were typified by a landscape ranging from small groves of trees among open prairies to scrub forests and dense shrub thickets of hazel. Dominant trees consisted of bur oak and northern pin oak. White oak and black oak were also common.

*Brush prairie* (oak woodland-brushland, dry oak savanna) – There were several small areas covered by this type. Brushland of oak and aspen, and grasses characterized these areas.

*Aspen-oak land* (oak forest, early successional stage) – A small percentage of Fillmore County was of this type. Dense aspen stands with scattered oak, basswood, and ash characterized this type.

*Prairie* (dry prairie, mesic prairie) Tall-grass or mesic prairie characterized by big bluestem and Indian grass once existed on the broad plateau of both Fillmore and Houston counties. (Nearly all of this area has been cultivated or converted to pastures of eurasian grasses.). Representative of the true prairie ecosystem, these areas blended into areas of oak woodland and brushland. Midsize grasses such as little bluestem were dominant on drier areas, sandy river terraces, and on steep south-facing bluffs and cliffs. Many of these areas have become overgrown with red cedar and other brush in the absence of fires.

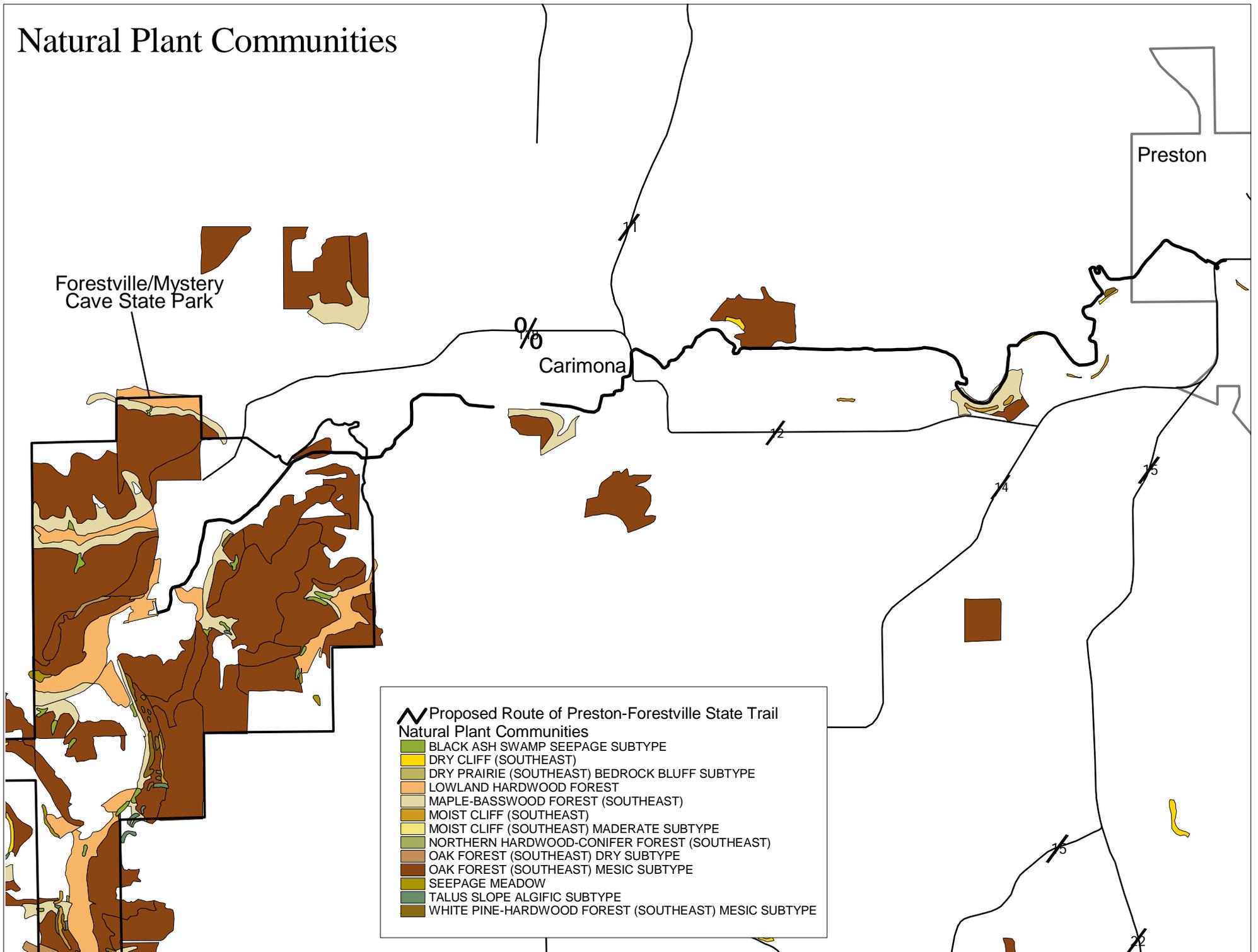
## **Vegetation of Fillmore County Today**

### **Natural Communities**

The vegetation pattern present at the time of the public land survey has been drastically altered. According to the Minnesota County Biological Survey, natural communities cover just over 3% of Fillmore County today (State of Minnesota, Department of Natural Resources). Most of the county has been converted to cropland or to pastureland. There are remnants of the original vegetation. The Minnesota County Biological Survey inventoried and mapped the existing natural communities in Fillmore County. See map on page 44.

The trail passes within close proximity to several, but does not pass through them. Trail users will be able to view them, but not access them, as barriers such as steep terrain or the river bars access to

# Natural Plant Communities



them. Natural communities within close proximity to the trail include oak forest, mesic subtype; dry cliff; moist cliff; maple-basswood forest; and white pine-hardwood forest. The oak forest, mesic subtype, maple-basswood forest, and white pine-hardwood forest were described in the previous section.

Moist cliffs are found on shaded north to east facing cliffs. Mosses, lichens, jeweled shooting star, Mackay’s brittle fern and slender cliff-brake fern are some species found in this community.

Dry cliff communities are found exposed south to southwest facing cliffs. They are often associated with dry prairies. Species found here include harebell, smooth cliff-brake and columbine.

*Endangered, Threatened and Special Concern Plant Species*

Fillmore County is host to a rich diversity of native plant species, due to the geological and climatic condition of the Paleozoic Plateau. Since so much of the original habitat has been developed for agriculture, many of these species are relegated to isolated remnants of habitat that meet their particular requirements. These limited ranges may be vulnerable to degradation or destruction. Some of these plants are on the extreme periphery of their extensive original natural range, while others are only found in this limited area of the Midwest. Others are disjunct species, located hundreds of miles from other existing populations.

<b>Scientific Name</b>	<b>Common Name</b>	<b>Minnesota Status</b>
<i>Aster shortii</i>	Short’s aster	Threatened
<i>Napaea dioica</i>	Glade mallow	Special Concern
<i>Poa wolfii</i>	Wolf’s bluegrass	Special Concern
<i>Allium cernuum</i>	Nodding wild onion	Threatened
<i>Carex woodii</i>	Wood’s sedge	Special Concern

*Vegetation Along the Trail Corridor*

The Preston to Forestville trail corridor and adjacent land is scenic and diverse. The trail passes through wooded environments, open pasture land, and changes in elevation providing up close views of the South Branch of the Root River and vistas of the pastoral rural landscape.

The majority of the land purchased for the trail was agricultural, and is located at the edge of fields and pastures. Some pastures are scattered with mature oak trees, giving the landscape a savanna-like character. Some of the woodlands have been pastured in the past and present a tangle of prickly ash, gooseberry, buckthorn, and barberry. Portions of the trail will be located within a road right-of-way. Segments of the trail also traverse floodplain forest with silver maple, willow, ash, cottonwood, elm, and a lush groundcover of wood nettle, woodland phlox, wild geranium, meadow rue, golden Alexander, cup plant, sedges, and grasses where the canopy is more open. The trail also crosses several wooded ravines that will need bridging.

The following list describes the land adjacent to the trail corridor and illustrates the diversity of environments trail users will experience.

Segments located between cropland and floodplain forest

Segments located between cropland and wooded pasture.

Segments located between open pasture land and wooded pasture

Segments traversing through wooded pasture land with scattered oak and grass groundcover

Segments traversing through wooded pasture land with a dense understory of prickly ash, gooseberry, raspberry and barberry

Segments located in wooded pasture land with spring ephemerals

The trail crosses a variety of wooded ravines and the South Branch of the Root River

Views of the South Branch of the Root River



## ***Vegetation Management Recommendations***

***Recommendation 1: Native plant species, from locally collected seed source, consistent with the native plant communities of the Blufflands subsection, should be used to revegetate areas disturbed by erosion, over use, construction, in windbreak plantings, and in the landscaping of parking areas and waysides. Give restoration ample time to respond.***

***Recommendation 2: Efforts will be made to avoid impacting wetlands, however, wetlands will be inventoried and a wetland mitigation plan will be prepared to address any identified impacted wetlands.***

***Recommendation 3: Sections of the trail will be developed in wooded pasture. The oaks should be avoided if possible, and the impacts of trail development minimized.***

***Recommendation 4: Restore or establish native woodland, prairie, or wetland plantings along the trail to minimize maintenance, minimize the use of pesticides, control noxious weeds, and enhance natural species abundance and biodiversity for user appreciation. Native seeding within the trail corridor in open oak wooded areas will create a savanna-like landscape. The woodland environment will be enhanced***

***Recommendation 5: Avoid planting and try to eradicate any of the plants listed below; all of these plants are aggressive introduced species which will crowd out native species***

<i>Carduus nutans</i> (Musk thistle)	<i>Elaeagnus angustifolia</i> (Russian olive)
<i>Centaurea maculosa</i> (Spotted knapweed)	<i>Elaeagnus umbellata</i> (Autumn olive)
<i>Cirsium arvense</i> (Canada thistle)	<i>Glechoma hederacea</i> (Creeping Charlie)
<i>Cirsium vulgare</i> (Bull thistle)	<i>Hieracium aurantiacum</i> (Orange hawkweed)
<i>Euphorbia esula</i> (Leafy spurge)	<i>Lonicera tartarica</i> (Tartarian honeysuckle)
<i>Lythrum salicaria</i> (Purple loosestrife)	<i>Lotus corniculatus</i> (Birdsfoot trefoil)
<i>Rhamnus cathartica</i> (Common buckthorn)	<i>Melilotus alba</i> (White sweet clover)
<i>Rhamnus frangula</i> (Glossy or Alder buckthorn)	<i>Melilotus officinalis</i> (Yellow sweet clover)
<i>Robinia pseudoacacia</i> (Black locust)	<i>Digitalis lanata</i> (Grecian foxglove)
<i>Sonchus arvensis</i> (Sow thistle)	<i>Morus alba</i> (Mulberry)
<i>Acer ginnala</i> (Amur maple)	<i>Phalaris arundinacea</i> (Reed canary grass)
<i>Acer platanoides</i> (Norway maple)	<i>Iris pseudacorus</i> (Yellow iris)
<i>Berberis thunbergii</i> (Japanese barberry)	<i>Linaria vulgaris</i> (Common toadflax)
<i>Bromus inermis</i> (Smooth brome grass)	<i>Pastinaca sativa</i> (Wild parsnip)
<i>Cannabis sativa</i> (Hemp or Marijuana)	<i>Polygonum cuspidatum</i> (Japanese knotweed)
<i>Chrysanthemum leucanthemum</i> (Oxeye daisy)	<i>Tanacetum vulgare</i> (Common tansy)
<i>Caragana arborescens</i> (Siberian peashrub)	<i>Taraxacum officinale</i> (Dandelion)
<i>Convolvulus arvensis</i> (Field bindweed)	<i>Ulmus pumila</i> (Siberian elm)
<i>Alliaria petiolata</i> (Garlic mustard)	<i>Vicia cracca</i> & <i>Vicia villosa</i> (Cow & Hairy vetch)
<i>Berteroa incana</i> (Hoary alyssum)	<i>Coronilla varia</i> (Crown vetch)
<i>Butomus umbellatus</i> (Flowering rush)	<i>Miscanthus sacchariflorus</i> (Amur silver grass)
<i>Daucus carota</i> (Queen Ann's lace)	

## **Wildlife**

In addition to the many species that are commonly seen throughout Minnesota, there are some uncommon or even unique creatures in this part of the state. Observant visitors may catch sight of wild turkeys, turkey vultures or even a rare peregrine falcon. Occasionally, timber rattlesnakes, an endangered species, are seen on rock outcrops and in the river bottoms. Blanding's turtles and bullfrogs, threatened species are sometimes seen near calm waters or wetlands. Although usually associated with their northern nesting areas, bald eagles are often spotted near the Root River during seasons of migration. Some 50 – 75 eagles winter in the vicinity of Wabasha, near the open water maintained by the inflowing Chippewa River.

## Mammals

As you move north in Minnesota, the species of mammals change in diversity. For example, there are some mammals whose range includes only northern Minnesota and neighboring Canada. By the same token, species found in southeastern Minnesota are included in a range that extends further south and, to some extent, east and west. While some species range throughout the state, others are at their northern limits in southeastern Minnesota.

The state of Minnesota recognizes 58 non-game mammals in the state. These species include those that generally are not hunted, are protected by law, or may be killed throughout the year. Of these 58 species, more than half have been documented in southeastern Minnesota. Ten species (Virginia opossum, least shrew, eastern mole, eastern pipistrelle, spotted skink, southern flying squirrel, plains pocket gopher, plains pocket mouse, western harvest mouse, and the pine vole) are at their northern limit in southeastern Minnesota. Two of these (the least shrew and the pine vole) have only been found in the state's southeastern counties. The prairie vole (*Microtus ochrogaster*) a species of special concern has been noted near Preston. This small rodent prefers grassy uplands. There are two bat species of special concern in Fillmore County – the myotis and the eastern pipistrelle. Caves and mines in southern Minnesota provide them with winter habitat for hibernation.

Abundant or common non-game mammals likely to be seen by trail users include woodchucks, thirteen-lined ground squirrels, eastern chipmunks, northern pocket gophers and striped skunks.

Of the 20 species for which the DNR has set hunting or trapping seasons, most are found in southeastern Minnesota. White-tailed deer, red and gray fox, coyote, raccoon, muskrat, river otter, beaver, fox and gray squirrels, mink, and eastern cottontail rabbits are common.

## Birds

As with mammals and other forms of wildlife, habitat diversity is directly related to a diversity of bird species. Greater diversity of habitat and more complex structures within the habitat lead to an increase in bird species. Several species reach their highest relative abundance or are only found in southeastern Minnesota.

Commonly seen birds include sparrow, grackles, starlings, crows, robins, meadowlarks, red-winged blackbirds, mourning doves, house wrens, bobolinks, cardinals and swallows. Waterfowl such as mallards, blue-winged teal and wood ducks are common during the summer months and seasons of migration. The Mississippi is heavily used by migrating waterfowl, including such non game species as whistling swans, great blue herons, and white common egrets. Ring-necked pheasants and ruffed grouse, upland game birds are present. Frequently observed raptors include the great horned owl, American kestrel, and the red-tailed hawk. Red-shouldered hawks, ospreys, and marsh hawks have been spotted on occasion. As noted earlier, wild turkey are a special feature of this area of the state.

Of 197 breeding species counted statewide, 104 are found in southeastern Minnesota. Many species, are not apparent to the casual observer. While not all are abundant or common, turkey vultures, red-tailed hawks, belted kingfishers, red-bellied woodpeckers, rough-winged swallow, white-breasted nuthatches, house wrens, cardinals, indigo buntings, and field sparrows reach their highest relative abundance in this area of the state. The bobwhite, red shouldered hawk, blue-winged warbler, Bell's vireo, and blue-gray gnatcatcher are only found in southeastern Minnesota. The bobwhite is an endangered species. The loggerhead shrike, a threatened species once common and widely distributed across the United States, has recently seen drastic declines in its range. Breeding populations have been noted in the past in Fillmore and Houston counties. It inhabits dry upland territory, nesting in shelterbelts, hedgerows or farmstead trees. As a predator bird, (with the unusual behavior of impaling prey such as mice or frogs on thorns or barbed wire), its decline may be due to environmental contamination.

### Reptiles and Amphibians

While the diversity of mammal species changes or even increases when moving into northern Minnesota, the diversity of reptiles and amphibians increases in the state's southeastern region. Of 45 species that occur statewide, 37 species are found here. Warmer temperatures and higher annual precipitation contribute to this increase, as does the unique habitat requirements found in this region of the state.

Turtles include the common snapping turtle, western painted turtle, and eastern spiny softshell turtle (a species that occurs only in southeastern Minnesota). The Blanding's turtle and the wood turtle are present, but only occasionally seen. Both species are classified as threatened. Additional species, not usually seen, include the smooth softshell, map turtle, and false map turtle.

Snakes and lizards are especially compatible with the environment of southeastern Minnesota. Two species of lizards are common (northern prairie skink and six-lined racerunner). The five-lined skink, an endangered species of lizard has been found in Fillmore County on exposed limestone or sandstone outcrops and wooded ravines. The region boasts the greatest number of snake species in Minnesota. The eastern plains garter snake, eastern garter snake, and eastern hognose snake are commonly seen. Of thirteen other species found in this region, three are not found in any other part of the state. These three species consist of the timber rattlesnake and eastern massasauga, Minnesota's only venomous snakes, and the black rat snake.

Timber rattlesnakes are classified as a species of special concern in Minnesota. This means the species is not endangered or threatened, but is uncommon in Minnesota and has unique or highly specific habitat requirement and deserves careful monitoring of its status.

## Fish

The sixty mile long South Branch of the Root River is a significant fisheries resource. Thirty seven of these sixty miles are designated trout stream. Brown trout and rainbow trout are the species most sought after by anglers and the most prevalent gamefish. Smallmouth bass and sauger are caught occasionally in the lower three miles of the river. For management purposes, the Division of Fisheries has divided up the river into three segments known as “reaches”. The section of river between mile 14.68 (located just east of Preston) and mile 36.8 (located west of Forestville State Park) is known as Reach 2. This is the reach that parallels the Preston to Forestville State Trail. Reach 2 includes the best trout habitat in the river. Camp Creek, Willow Creek, North Branch Creek, and South Branch Creek, all coldwater tributaries, enter the river in this reach. This influx of cold water helps to maintain the cool water temperatures required by trout. Wild brown trout are present in North and South Branch Creek. The other tributaries are stocked. Reach 2 contains numerous long pools commonly 1,000 feet long. The river segment through Forestville State Park has a high abundance of trout. Species diversity in the South Branch is high. A total of 38 species of fish typical of cold/coolwater streams have been collected.

The following species have been collected in the South Branch of the Root River, although all may not be present in reach 2.

American brook lamprey ( <i>Lampetra lamottei</i> )	Brown trout ( <i>Salmo trutta</i> )
Brook trout ( <i>Salvelinus fontinalis</i> )	Rainbow trout ( <i>Oncorhynchus mykiss</i> )
Northern pike ( <i>Esox lucius</i> )	Northern hogsucker ( <i>Hupenfeliumnigricans</i> )
White sucker ( <i>Catostomus commersoni</i> )	Greater redhorse ( <i>Moxostoma valenciennesi</i> )
Golden redhorse ( <i>Moxostoma erythrurum</i> )	Silver redhorse ( <i>Moxostoma anisurum</i> )
Shorthead redhorse ( <i>Moxostoma macrolepidotum</i> )	Creek chub ( <i>Semotilus atromaculatus</i> )
Hornyhead chub ( <i>Nocomis biguttatus</i> )	Longnose dace ( <i>Rhinichthys cataractae</i> )
Northern redbelly dace ( <i>Phoxinus eos</i> )	Blacknose dace ( <i>Rhinichthys atratulus</i> )
Common shiner ( <i>Luxilus cornutus</i> )	Mimic shiner ( <i>Notropis volucellus</i> )
Bigmouth shiner ( <i>Notropis dorsalis</i> )	Sand shiner ( <i>Notropis stramineus</i> )
Bluntnose minnow ( <i>Pimephales notatus</i> )	Fathead minnow ( <i>Pimephales promelas</i> )
Suckermouth minnow ( <i>Phenacobius mirabilis</i> )	Central stoneroller ( <i>Campostoma nomalum</i> )
Common carp ( <i>Cyprinus carpio</i> )	Black bullhead ( <i>Ameiurus melas</i> )
Stonecat ( <i>Noturus flavus</i> )	Rock bass ( <i>Ambloplites rupestris</i> )
Largemouth bass ( <i>Micropterus salmoides</i> )	Smallmouth bass ( <i>Micropterus dolomieu</i> )
Black crappie ( <i>Pomoxis nigromaculatus</i> )	Green sunfish ( <i>Lepomis cyanellus</i> )
Sauger ( <i>Stizostedion canadense</i> )	Rainbow darter ( <i>Etheostoma caeruleum</i> )
Johnny darter ( <i>Etheostoma nigricans</i> )	Fantail darter ( <i>Etheostoma flabellare</i> )
Slimy sculpin <i>Cottus cognatus</i>	Brook stickleback ( <i>Culaea inconstans</i> )

*The Stream Management Plan* for the South Branch of the Root River prepared by the DNR, Division of Fisheries includes an operational plan for stocking. For Reach 2, the recommendation is to annually stock 150,000 fingerling brown trout and 6,750 fingerling rainbow trout and 2,550 yearling rainbow trout.

Fisheries easements have been purchased along the South Branch of the Root River just west of Preston and west of Forestville State Park. The trail will parallel the easement west of Preston.

### **Interrelationship of the river and the trail.**

Although the river parallels the trail corridor, opportunities to access the river from the trail are limited. Private land ownership between the trail-right-of way and the river prevents access. Steep slopes and cliffs between the trail right-of-way and river also prevent access. There are several locations along the trail where trail right of way extends to the river. These locations will provide opportunities for fishing access.

#### ***Recommendations:***

***Recommendation 1: Create angling and education opportunities where the trail intersects fishing opportunities.***

***Recommendation 2: Trails and Waterways will work with the Division of Fisheries in the design of the trail where the trail and river connect to ensure both fisheries needs and trail user needs are met.***

***Recommendation 3: Assess the trail-river connections as to their suitability for development of “fishing pads” which promote the use of the river for fishing by people with mobility impairments.***

***Recommendation 4: Trail construction at water crossings should not occur between October 15<sup>th</sup> and April 15<sup>th</sup> so that it does not coincide with spawning or migration of fish species. Silt plumes that may result can negatively affect fish spawning and habitat, or native mussel species.***

***Recommendation 5: The trail should be designed to minimize angler and trail user contact by using available trees and land features as visual buffers. Plantings to create screening could also be used. This will help create the solitary experience many trout anglers prefer.***

# Cultural Resources

The area through which the trail will pass is rich in archaeological and historical resources. A framework developed by the State Historic Preservation Office, Minnesota Historical Society will be used to provide an overview of the history of the area and to provide a context for the archaeological and historic resources that are present along the trail. The State Historic Preservation Office (SHPO) has identified cultural period contexts (See table below) to assist in describing and determining the significance of cultural resources. Artifacts from all contexts of the Pre-Contact and Contact Periods have been found in the area. The most significant context for the trail in the Post Contact Period is the Early Agriculture and River Settlement (1840 – 1870).

## Outline of Cultural Periods in Minnesota (Adapted from Minnesota State Park Cultural Resource Management Program Annual Report – 2001)

Pre-Contact Period	Paleoindian Tradition	9500 B.C. – 6000 B.C.
	Archaic Tradition	6000 B.C. – 500 B.C.
	Woodland Tradition	c.a. 500 B.C. – A.D. 1650
	Plains Village Tradition	1000 - 1500
	Mississippian Tradition	1000 – 1650
	Oneota Tradition	1000 – 1650
Contact Period	American Indian	1650 – 1837
	Euroamerican	

### PRE-CONTACT PERIOD (9500 B.C. – A.D. 1650)

#### Paleoindian Tradition (9500 B.C. – 6000 B.C.)

This period includes the earliest human activity in Minnesota. There is not a lot of evidence of the human activity that occurred during this time period. The evidence includes scattered surface finds of stone tools and some projectile points. Evidence suggests that they were hunters and gatherers and traveled across the landscape.

#### Archaic Tradition (6000 B.C. – ca. 500 B.C.)

More distinctive settlement patterns developed during this period due to the diversity of plant and animal communities that resulted from climatic changes. Documented sites from this tradition are not common but the existing evidence suggest distinctive settlement patterns. Evidence of this tradition include chipped stone tools, pecked and ground stone tools, axes and gouges for woodworking. Native copper tools and decorative items made from copper have also been found from this tradition.

**Woodland Tradition (ca 500 B.C. – A.D. 1650)**

This cultural tradition was marked by the use of pottery and the burial of the dead in earth mounds. People became more sedentary during this time. Horticulture began and the population expanded. The number of sites from this tradition is more numerous than from earlier traditions. Large village sites were present during this time.

**Mississippian Tradition (1000 – 1650)**

The northward spread of the Mississippian Culture around 1000 A.D. brought a new way of life to southern Minnesota. Although still dependent on hunting and fishing, agriculture dominated this culture. A major center of this new culture was the lower Illinois Valley and to the east of present day St. Louis.

These early farmers worked the sandy soils of the river bottoms and terraces with bone hoes and other hand tools. Their settlements were typically large villages of 600 to 800 inhabitants surrounded by fields of corn, beans, squash, sunflowers, and tobacco. Refined pottery and the continued use of burial mounds also characterized this culture.

**Oneota Tradition (1000 – 1650)**

This tradition was common in southeastern and south-central Minnesota. The Woodland Tradition adopted cultural elements from the nearby Mississippian people defining this tradition.

**Plains Village Tradition (1000 – 1500)**

Maize and squash were farmed. Bison was a staple resource. Unique ceramics were developed and defined this tradition.

**Archaeological Evidence of the Pre-Contact Period in the Vicinity of the Trail**

An archaeological survey will be conducted of the trail corridor before development. It is likely that pre-contact artifacts will be found based on surveys that have been conducted elsewhere in the Root River Valley. The Traditions just described used the river corridor as travel routes and to obtain resources.

**CONTACT PERIOD (A.D. 1650 – A.D. 1837)**

European trade goods enter the archaeological record including beads, bells, knives and ceramics. Evidence of French trade goods appear in the 1670s. The fur trade brought both French and British traders to the area. During the 1690s and early 1700s, the French established trading posts in the Mississippi River Valley. Between 1763 – 1805, British traders and explorers came to Minnesota.

**POST CONTACT PERIOD (1837 – 1945)**

In 1837, the Dakota relinquished their claims to the lands east of the Mississippi. The 1851 treaties of Mendota and Traverse des Sioux took all of southern Minnesota away from them. Two years later, the Dakota reluctantly left their homes along the Mississippi and other area

rivers and moved to a narrow reservation of land along the Minnesota River Valley. Additional pressure and abuse by the government and some of its officials led to war.

### **Early Agriculture and River Settlement (1840 – 1870)**

Fillmore County was established in 1853 and was named for Millard Fillmore who served as President of the United States from 1850 – 1853. The first county seat was located in Chatfield in 1854 and 1855. The county seat was moved to Carimona in 1855. Preston was selected as the county seat by voters in 1856.

### **Historic Forestville**

A significant trail highlight and terminus of the trail is Historic Forestville, managed by the Minnesota Historical Society. The following excerpt taken from the Department of Natural Resources, Division of Parks and Recreation Forestville/Mystery Cave State Park map summarizes the significance of this site and describes the opportunities available there.

“Founded in 1853, the village emerged as a rural trade center, typical of hundreds that emerged across southern Minnesota during the 1850s. Area farmers came to Forestville to trade their farm produce for goods and services. By 1858, Forestville numbered 100 inhabitants and 20 buildings including; two general stores, a grist mill, a brickyard, two hotels, a school and mechanics of several trades.

Forestville prospered until the first area railroad, the Southern Minnesota, bypassed the community in 1868. Village residents watched their town struggle to survive while towns served by the railroad boomed with prosperity. By 1890, Thomas J. Meighen, son of one of the town’s founders, owned the entire village. The 50 residents made their living on Mr. Meighen’s farm. In return for the work, his employees received housing, board and credit in his store. Mr. Meighen also maintained a post office, the school, and a feed and saw mill.

Today the Minnesota Historical Society has restored a portion of the townsite of Forestville. In the summer months, visitors discover Forestville’s exciting past by stepping back into the summer of 1899. Costumed interpreters portray Forestville residents. Explore the latest styles of merchandise in the brick store or visit the Thomas and Mary Meighen residence. Pass the time with farm laborers as they go about their daily chores around the farm buildings.

Besides the restored portion of the village, there are many historic sites to explore that include the Zumbro Hill cemetery, south townsite, school house, residences, grist mill and distillery.”

### **National Register of Historic Sites**

There are a number of sites and two districts on the National Register of Historic Places in Fillmore County.

Lenora Methodist Church in Canton

Norway Township Stone House (Also know as Overland House) in Rushford

Quickstad Farm Implement Company in Peterson

Rushford Wagon And Carriage Company in Peterson

Tunnel Mill in Spring Valley

Forestville Townsite in Forestville State Park

Lanesboro Historic District

Wykoff Commercial Historic District

The trail is not located near any of these sites.

# **Socioeconomic Resources**

## **Economic**

The Preston to Forestville State Trail is located in Fillmore County, which is 861 square miles in size. Key industries are agriculture, forestry, fishing and hunting, mining, manufacturing, retail trade, healthcare, education, and tourism. The county unemployment rate as of June 2003 is 5.4%. The median household income is \$36,651, which is below the state average.

## **Population**

The 2001 population of Fillmore County is 21,296. Fillmore County has lost population from 1980 to 2000.

## **Regional and Recreation and Tourism Opportunities**

### **Historic Bluff Country Scenic Byway**

The Historic Bluff Country Scenic Byway is an important tourist attraction. The eighty-eight miles of Highway 16 between Dexter and La Crescent showcase the scenic Root River Valley. The Root River, bluffs, caves, sinkholes, hardwood forest, pastoral rural landscapes, historic sites, and hospitable and quaint towns are highlights of this byway. There are numerous and diverse recreational opportunities within close proximity to the byway. This byway has national significance. This scenic byway, is also designated as an All-American Road. The All American Road designation indicates that this scenic drive is unique in the nation as a “destination unto itself.” There are only 20 All-American Roads in the nation. Development of the Preston to Forestville State Trail will enhance the All- American Road by providing an additional amenity attracting people to the area. The All-American Road is located approximately two miles north of the Preston to Forestville State Trail and parallels the future trail between Preston and Forestville State Park.

### **Overnight Recreational Opportunities**

#### Camping

There are a variety of private and public campgrounds in Fillmore County. Forestville State Park has approximately 100 campsites. Vinegar Ridge, a unit in the Richard J. Dorer Memorial Hardwood State Forest located near Rushford provides a few primitive campsites. Several communities including Lanesboro, Rushford, Peterson and Harmony provide public campgrounds. There are approximately a dozen private campgrounds located within the county as well.

#### Non Camping (Hotels/Motels/ Resorts/Bed and Breakfasts)

There are numerous and diverse lodging opportunities available in Fillmore County ranging from the traditional hotel/motel type of facility to unique bed and breakfasts. An old county jailhouse,

historic homes, and historic commercial buildings have been developed into bed and breakfast accommodations throughout the county. Spring Valley, Chatfield, Preston, Lanesboro, Harmony, Rushford have traditional hotel/motel accommodations.

### **Traditional Day-Use**

#### **Recreational Opportunities**

##### Watercraft Access Facilities and Fishing Piers

Preston and Lanesboro have a fishing pier/platform on the Root River. There are numerous carry-in access points for canoeist along the Root River. There are no lakes in Fillmore County.

##### Visitor Information Centers, Interpretive Centers and Museums

There are visitor information centers located in Lanesboro, Preston, and Harmony.

The Fillmore County History Center located in Fountain is the headquarters for the Fillmore County Historical Society. There are several other museums located throughout the county. Some examples include: the Rushford Depot with artifacts from the railroad and history of Rushford, the Lanesboro Museum which tells the story of the history of Lanesboro, and the Peterson Depot Museum - a depot on the Southern Minnesota Railroad containing artifacts from the history of the Peterson area.

##### Trail Opportunities

Two state trails, Forestville State Park, the Richard J Dorer Memorial Hardwood State Forest, the snowmobile grant-in-aid system, and communities provide a diversity of trail opportunities in Fillmore County.

##### *State Trails*

The forty-two mile Root River State Trail, located between Fountain and Houston provides bicycling, in-line skating, hiking, and cross-country ski trail opportunities. The 18 mile Harmony-Preston Valley State Trail provides these same opportunities in addition to a winter dogsled opportunity between Preston to just south of Harmony.

The Preston to Forestville State Trail will connect to the Harmony-Preston Valley State Trail in Preston. The Preston to Forestville State Trail will be connected to the Root River State Trail via the northern 5 miles of the Harmony Preston Valley State Trail. The Harmony Preston Valley State Trail intersects the Root River Trail five miles north of Preston, near Isinours Forestry Unit.

##### *Forestville State Park*

Forestville State Park provides significant horseback riding trail opportunity. In addition to the 15 mile horseback riding trail system, the park has 17 miles of hiking trail, 11 miles of cross-country ski trail and 6 miles of snowmobile trail.

##### *Richard J. Dorer Memorial Hardwood State Forest*

Some units of the Richard J. Dorer Memorial Hardwood State Forest provide trail opportunities. The Brightsdale Unit located north of Lanesboro provides approximately six miles of hiking and cross-country ski trails. The Isinours Unit, located between Fountain and Lanesboro has 3 miles

of hiking trails. The Vinegar Ridge Unit, located north of Rushford, provides approximately 6 miles of hiking and snowmobile trail.

*Snowmobile Grant-in-Aid System*

There are over 230 miles of snowmobile trails in Fillmore County. These trails are part of the statewide grant-in-aid snowmobile trail system totaling over 20,000 miles. Development and maintenance of these trails are funded by snowmobile registration and a portion of the unrefunded gas tax attributed to snowmobile use. Local snowmobile clubs develop and maintain these trails with funds distributed by a local government sponsor.

**Other Recreational and Tourism Opportunities**

Fishing

The rivers and streams of Fillmore County provide excellent fishing opportunities. There are 35 designated trout streams in Fillmore County.

Big Spring Creek	Newburg Creek
Camp Creek	North Branch Creek
Crystal Creek	Partridge Creek
Duschee Creek	Rice Creek
Camp Hazard Creek	Riceford Creek
Diamond Creek	Shady Creek
Etna Creek	South Branch Creek
Frego Creek	South Branch Root River
Hallum Creek	Spring Valley Creek
Gribben Creek	Torkelson Creek
Kedron Creek	Trout Run Creek
Lynch Creek	Unnamed Creek
Little Jordan Creek	Vesta Creek
Lost Creek	Watson Creek
Lynch Creek	Wisel Creek
Mahoods Creek	Willow Creek
Maple Creek	
Mill Creek	
Nepstad Creek	

The DNR, Division of Fisheries has acquired streamside easements on many of these trout streams to provide angler access. There are several areas where trout streams can be accessed from public land adjacent to the stream such as Forestville State Park and along the Harmony Preston Valley State Trail. Habitat development projects have been completed on many of these streams as well. There is a fishing pier and platform in Lanesboro and Preston. There are no lakes in Fillmore County.

### Golf

There are five public golf courses in Fillmore County, the Chosen Valley Country Club in Chatfield, the Root River Country Club, the Ferndale Country Club in Rushford, and the Preston Golf Club in Preston, and the Harmony Golf Club in Harmony.

### Arts

The Commonweal Theater Company in Lanesboro presents professional, live plays February through December. In addition, they do a live radio show Sunday evenings May through September. The Cornucopia Art Center in Lanesboro has an exhibition gallery and offers workshops, in-school programs and sponsors art exhibits.

### Outfitters and Guide Services

There are outfitters in Chatfield, Lanesboro, Preston, and Rushford.

### Hunting and Trapping

Wildlife Management Areas provide hunting and trapping opportunities. There are five wildlife management areas in Fillmore County. None of these are located within close proximity to the Preston to Forestville State Trail. Hunting and trapping opportunities are available in the Richard J Dorer Memorial Hardwood State Forest. The Brightsdale Unit, Isinours Unit, Gribben Valley Unit, Diamond Creek Unit, Choice Unit, North Peterson Unit, Peterson Rusford Unit and South Rushford Unit all provide public hunting opportunities. There are also scattered smaller parcels that are owned by the State of Minnesota and managed by the DNR, Division of Forestry. None of these units is within close proximity to the Preston to Forestville State Trail.

### Canoeing

The Root River is a state designated canoe and boating route. The route has two beginning points on the eastern end, one at Chatfield, the other at Preston. The route ends where the Root River empties into the Mississippi. Carry-in accesses are located intermittently along the river. Canoe campsites are provided along the route.

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