Cuyuna Lakes State Trail Master Plan

August 2004

Minnesota Department of Natural Resources
Division of Trails & Waterways

The Minnesota Department of Natural Resources, Trails and Waterways Division would like to thank all who participated in this master planning process. Assistance from the Cuyuna Lakes Trail Association and Dennis Palmer was invaluable. Many city and county officials, DNR staff, trail association members and local citizens contributed their time and energy to the planning process as well.

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Executive Summary

Trail Alignment

The Cuyuna Lakes State Trail is a legislatively authorized state trail which, when complete, will be approximately 35 miles long and connect the towns of Baxter, Brainerd, Riverton, Ironton, Crosby, Cuyuna, Aitkin and the Cuyuna Country State Recreation Area. A connection to the Paul Bunyan State Trail will be an important link in the overall trail system of the central Minnesota lakes region.

For purposes of this plan, the trail alignment has been divided into four planning segments. The segments are Baxter to Lum Park in Brainerd, Lum Park to Riverton, Riverton to Cuyuna, and Cuyuna to Aitkin. Generally, the following criteria will guide alignment planning:

- The paved trail will use abandoned railroad alignments where available. These routes offer the gentle grades required to support a diverse group of bikers, in-line skaters, walkers, and runners. Whenever practical, the paved and unpaved alignments will be separated in a manner that minimizes dust and debris from collecting on the paved alignment.

- Where former railroad alignments are not available, alternative alignments will favor the use of public right-of-way, when practical. However, paved alignments will favor routes away from vehicular traffic routes for safety and for an improved trail experience.

- Existing DNR grant-in-aid snowmobile trails will be retained without change as the preferred non-paved alignment, whenever practical.

Recommended Trail Uses

The Cuyuna Lakes State Trail is a multi-use trail but the limitations of width dictate that not all uses can be accommodated at all times on the entire length of the trail. The following are the recommended trail uses: bicycling, hiking/walking, cross-country skiing, dog walking, running/jogging, in-line skating, cross-country roller skiing, hunting, snowmobiling, and environmental education/interpretation. The trail will be accessible to people with disabilities wherever practical. Certain segments of the trail can be used for fishing access.

Trail Management

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

Natural and Cultural Resources

The natural resources within the trail right-of-way will be managed to provide a healthy diversity of wetland, woodland and riverine communities for wildlife habitat and for the appreciation of trail users and adjoining landowners. Native flowers, grasses, trees and shrubs will be planted and managed. Cultural resources will be preserved and managed for interpretive purposes. There will be many opportunities for trail users to experience the mining history of the area through existing and proposed interpretive sites.

Planning Process: Purpose and Scope

Master planning for the Cuyuna Lakes State Trail was conducted in order to:

- Provide a unifying vision for trail advocates who are working to secure a trail alignment and funds for development and maintenance of the trail. The Cuyuna Lakes Trail Association is a driving force behind the establishment, acquisition and development of this trail.

- Guide the development, management, maintenance, and operation of the Cuyuna Lakes State Trail so that quality recreation experiences are provided.

- Provide a forum for open public discussion and debate concerning trail use and trail development options, trail maintenance and management issues, and trail operations and enforcement needs.

- Support partnerships and processes that will help carry out the plan and contribute to providing quality trail experiences.

- Inform the decision-making process by assessing 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.

Cuyuna Lakes State Trail Master Planning Process

STEPS IN THE PROCESS
Information Gathering and Issue Identification
Formulate Vision, Goals, and Design Concepts
Formulate Trail Development and Management Recommendations
Draft Plan and Internal DNR Review
Draft Plan and Public Review
Trail Plan Adopted - Implementation Begins
Public Workshop for Each Segment After Alignment is Determined and Before Construction is Completed
Evaluation and Adjustment 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.

WHO'S INVOLVED
Trail Associations
Trail User Groups
Communities
Public Workshop Participants
Adjacent Landowners
Elected Officials
Other Agencies

Trail Authorization

The Cuyuna Lakes State Trail was legislatively authorized in 2002 (Minnesota Statutes 85.015, Subdivision 24).

(a) The trail alignments shall originate in Crow Wing County at the Paul Bunyan trail in the city of Baxter and shall extend in an east-northeasterly direction to the city of Riverton, Crow Wing County, where they shall connect to the Sagamore Mine segment of the Cuyuna Country State Recreation Area. The trail alignments shall then continue in a northeasterly direction, generally along and using former railroad rights-of-way insofar as practical, to connect with the main body of the Cuyuna Country State Recreation Area, the communities of Ironton and Crosby in Crow Wing County, and the Croft Mine historical park. The trail alignments shall then continue in an east-northeasterly direction, generally along and using former railroad rights-of-way insofar as practical, to the city of Cuyuna in Crow Wing County, and then continue east to the city of Aitkin, Aitkin County, and there terminate.

(b) The trail shall be developed as a multiuse, multiseasonal, dual treadway trail.

The Cuyuna Lakes State Trail is one of the legislatively authorized state trails in the State Trail System. (See the map of Minnesota's State Trail System on page 7.) 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 Cuyuna Lakes 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 to or passage through other areas which have significant scenic, historic, scientific, or recreational qualities or reestablishes or permits travel along an historically prominent travel route or which provides commuter transportation.

(b) No unit shall be authorized as a state trail unless its proposed location substantially satisfies the following criteria:

(1) Permits travel in an appropriate manner along a route which provides at least one of the following recreational opportunities:

(i) travel along a route which connects areas or points of natural, scientific, cultural, and historic interest.

The Cuyuna Lakes State Trail connects the towns of Baxter, Brainerd, Riverton, Ironton, Crosby, Cuyuna and Aitkin. There are many historical and cultural resources in the communities along the trail. For instance, the trail will connect to the Croft Mine Historical Park, located within the Cuyuna Country State Recreation Area (CCSRA), where visitors can tour a simulated underground iron ore mine or visit the museum that displays thousands of mining artifacts.

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

Trail users will enjoy views of many lakes, wetlands, woodlands and occasionally the Mississippi River. The topography of the area in the vicinity of the CCSRA will afford trail users views of the brilliantly colored iron ore tailings and stockpiled rock, as the extracted overburden dramatically changes the landscape with strong vertical elements. In some areas, overburden was stockpiled over 200 feet high and pits were as much as 525 feet deep. Time and nature have reclaimed the mined areas, filling the pits with water and allowing forests to cover the overburden piles. Left behind are spectacular vistas and the feeling of being in a natural, unaltered environment. Further east, the land becomes more flat, with gently rolling fields of hay and generously scattered wetlands.

(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.

Traveling through the area by trail allows users to observe the natural environment at a slower pace. The route is dotted by lakes, mine pits and wooded areas that are best observed and appreciated by walking or bicycling through the landscape. Portions of the trail will also parallel the Mississippi River. Wildlife enthusiasts can utilize the trail to observe wildlife.

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

The corridor between Aitkin and Brainerd served initially as a segment of a regional rail route transporting lumber and general supplies, then as a transcontinental route. The transcontinental route was later augmented to become a strategic transporter for a manganese-rich iron-mining district.

On the developing western end of the corridor, Brainerd became the railhead of the future transcontinental rail route from Duluth to the Pacific Ocean on March 11, 1871, when the first train reached this village. For many river towns such as Brainerd, a railroad line contacting or crossing the river either created or re-defined the town site.

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

The Cuyuna Lakes State Trail will be a vital link in the recreation system of the central Minnesota lakes region. It will connect to the Paul Bunyan State Trail, which is a 100-mile long trail between Baxter/Brainerd and Bemidji. Future expansion of the Paul Bunyan State Trail is planned connecting to Crow Wing State Park. This connection will link Crow Wing State Park and the CCSRA, allowing travel between the two units. The Cuyuna Lakes State Trail is also planned to be a link to other state and regional trails, such as the Munger State Trail to the east, the Mesabi Regional Trail to the north, and the Glacial Lake Aitkin Trail system in Aitkin County. The Cuyuna Lakes State Trail will also be part of the national Mississippi River Trail – a 10-state cycling route that will allow cyclists to tour from the headwaters of the Mississippi to the Gulf of Mexico. Future plans include making connections with other local trails.

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

The trail will be located on abandoned railroad grades wherever feasible. The trail will utilize public lands within the CCSRA. Road rights-of-way will be used to make connections when needed.

(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.

The trail will connect to the Croft Mine Historical Park in Crosby. The park is a re-created underground mining experience, museum and interpretive center where visitors can experience mining machinery, artifacts, and a simulation of an old shaft cage.

A local trail is proposed to connect the Milford Mine site, which is approximately two miles north of Crosby, to the Cuyuna Lakes State Trail. The Milford Mine site is where a mining disaster claimed the lives of 41 miners in 1924. Interpretive displays are proposed to memorialize the miners and the mine. See full description of the Milford Mine site on page 57.

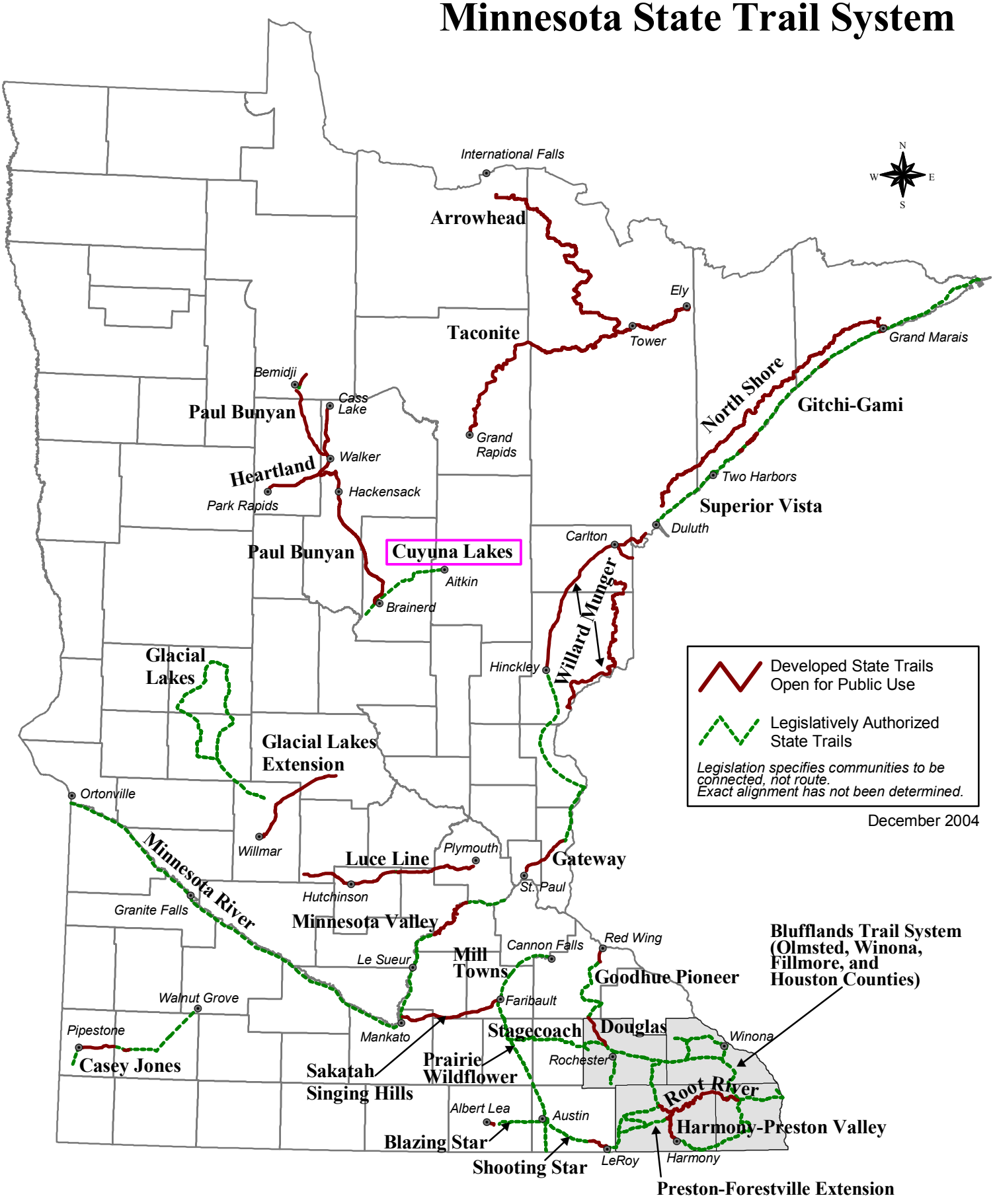
Interpretive facilities have been proposed to increase trail users appreciation and understanding of the mining resources along the trail.

The trail will be developed to minimize the impact on the natural resources within and adjacent to the trail corridor.

(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.

Minnesota State Trail System



December 2004

Vision for the Cuyuna Lakes State Trail

The Cuyuna Lakes Trail Association (CLTA) was formed in 1998. The original members were participants in a Blandin Leadership program involving the Cuyuna Range area. They saw the trail as a way to enrich their community. Other community members enthused about the potential of this trail project soon joined them. The CLTA was incorporated as a non-profit organization in 2001 and is an advocate for the state trail linking Brainerd, Crosby, Ironton and Aitkin as well as other trail development linking the Cuyuna Range communities. The CLTA envisions that this trail network, when completed, can create an enhanced sense of identity and unity for the communities involved and positively affect the quality of life for all through recreation, economic, health and safety benefits.

The Cuyuna Lakes State Trail will be an important part of a regional network of multi-purpose recreational trails serving the entire central Minnesota lakes region. The Cuyuna Lakes State Trail will connect the Cuyuna Country State Recreation Area (CCSRA) to the Paul Bunyan State Trail on the west and to Aitkin on the east. The general overview of the Cuyuna Lakes State Trail is shown on page 11.

The first segment of the Cuyuna Lakes State Trail will enhance the recreational dimension of the 5,000-acre CCSRA in the historic Cuyuna iron-mining region of Minnesota. The future intersecting local trail system will connect the Cuyuna Range communities and provide access to points of interest, community activities, schools and merchants.

There is a demand for recreational trails in the former Cuyuna Range mining area. Users will be local and seasonal residents, weekend visitors, and day-trippers.

The Cuyuna Lakes State Trail will meet the demand for diverse recreational opportunities for persons of all ages and all recreational abilities:

- The paved alignments will support walking, running, biking, in-line skating and cross-country skiing.
- Paved trails and connecting local trails will provide alternative transportation within the Cuyuna communities, supporting commuting to schools, shopping, and other community resources.
- The unpaved alignments will support snowmobiles, mountain biking, horseback riding and hiking.

The CCSRA will support a broad range of related activities. Visitors to the CCSRA can also engage in camping, birding, horseback riding, mountain biking, rock collecting, off-trail hiking, boating, fishing, canoeing, swimming, scuba diving and nature appreciation.

The Cuyuna Lakes Trail Association advocates trails that serve multiple uses - hiking, running, bicycling and other compatible uses in the summer, and cross-country skiing and snowmobiling in the winter. This is consistent with the requirements of the authorizing legislation that the trail shall be developed as a multi-use, multi-seasonal, dual treadway trail.

The Cuyuna Lakes State Trail alignment boasts:

- The Mississippi River.

- The rich heritage of the Cuyuna Iron Range.

- The newly formed Cuyuna Country State Recreation Area.
- The Croft Mine Historical Park, a development of the IRRRB.
- Connections to the Paul Bunyan State Trail, Lake Bemidji State Park, and Crow Wing State Park.
- Public forests, parks, sites of historical interest and community facilities.
- An established tourism industry and demand for trail access.
- Bountiful wildlife and hundreds of lakes, rivers and wetlands.
- A natural connection between other state and regional trails in the central Minnesota region, including a north connection to the Mesabi Regional Trail in Grand Rapids and an east-west connection to the Munger State Trail near Duluth, as well as a connection to the Glacial Lake Aitkin Trail system in Aitkin County.
- Because segments will generally follow the Mississippi River corridor, it will be a part of the Mississippi River Trail – a 10-state cycling route that will allow cyclists to tour from the headwaters of the Mississippi to the Gulf of Mexico.

Goals for the Cuyuna Lakes State Trail

- To create a trail system that invites family participation, supports a broad range of recreational activities by persons with a broad range of ability and interests and promotes healthy life styles through year-round outdoor activities and interaction with the natural environment.
- To connect recreational trails in the central Minnesota lakes area to enhance the Cuyuna Range's image as a tourist destination and as part of the greater central Minnesota lakes tourism area.
- To use existing public right-of-way and preserve unused railroad corridors for trail alignments.
- To coordinate and work cooperatively with other local trail user groups to explore opportunities for recreation in the area.
- To promote economic stability and opportunity by linking communities, enhancing the Cuyuna Range's identity as a destination for tourism and business and expanding local and regional opportunities for economic development.
- To provide the opportunity for trail users to experience and appreciate the natural and cultural resources along the trail.
- To preserve the unique culture and rich history of the Cuyuna Range.
- To be a good neighbor.

Summary of Recommended Trail Uses

This page summarizes the recommended allowable uses in relation to the paved and unpaved alignments of the trail. The separate alignments will provide for year-round trail use. The recommended uses are:

Paved Trail	Unpaved Trail	Recommended Trail Activity
NO	YES	**Snowmobiling** - the primary winter activity. Metal studs damage paved trails so provision of unpaved alternative is required.
YES	YES	**Hiking -** hiking may be permitted on the unpaved trail that has permanent right-of-way, so long as appropriate safety can be assured.
YES	YES	**Bicycling -** biking may be permitted on the unpaved trail that has permanent right-of-way, so long as appropriate safety can be assured.
NO	YES	**Horseback riding** – the CCSRA management plan allows for this use.
YES	NO	**Access to persons with disabilities** - paved trail will meet ADA guidelines wherever practical.
YES	YES	**Camping** - Campers will be able to use facilities at CCSRA as well as local campgrounds. Additional facilities may be necessary in future.
YES	NO	**In-line skating / Cross-country roller-skiing**
YES	NO	**Cross-country skiing**
See explanation at right	See explanation at right	**Hunting** - within the CCSRA, hunting must be managed for, but must not conflict with other recreational uses. **During legal hunting season only** - Currently, state trail rules allow hunting within the trail right-of-way, except where restricted by local ordinance. The current rule states: *"No firearm or bow and arrow shall be discharged within the trail at any time, except for the purpose of lawful hunting during the period from September 15 to March 30 only. No rifle, shotgun with slug or bow and arrow shall be discharged upon, over, or across the trail treadway at any time."* Communities may restrict firearms or bow and arrow discharge, or trapping, by ordinance. These ordinances take precedence over state trail rules.
NO	LIMITED	**Off-highway vehicles** - will not be allowed on the paved trail and are currently not allowed within the CCSRA.

General Overview of the Trail Alignment

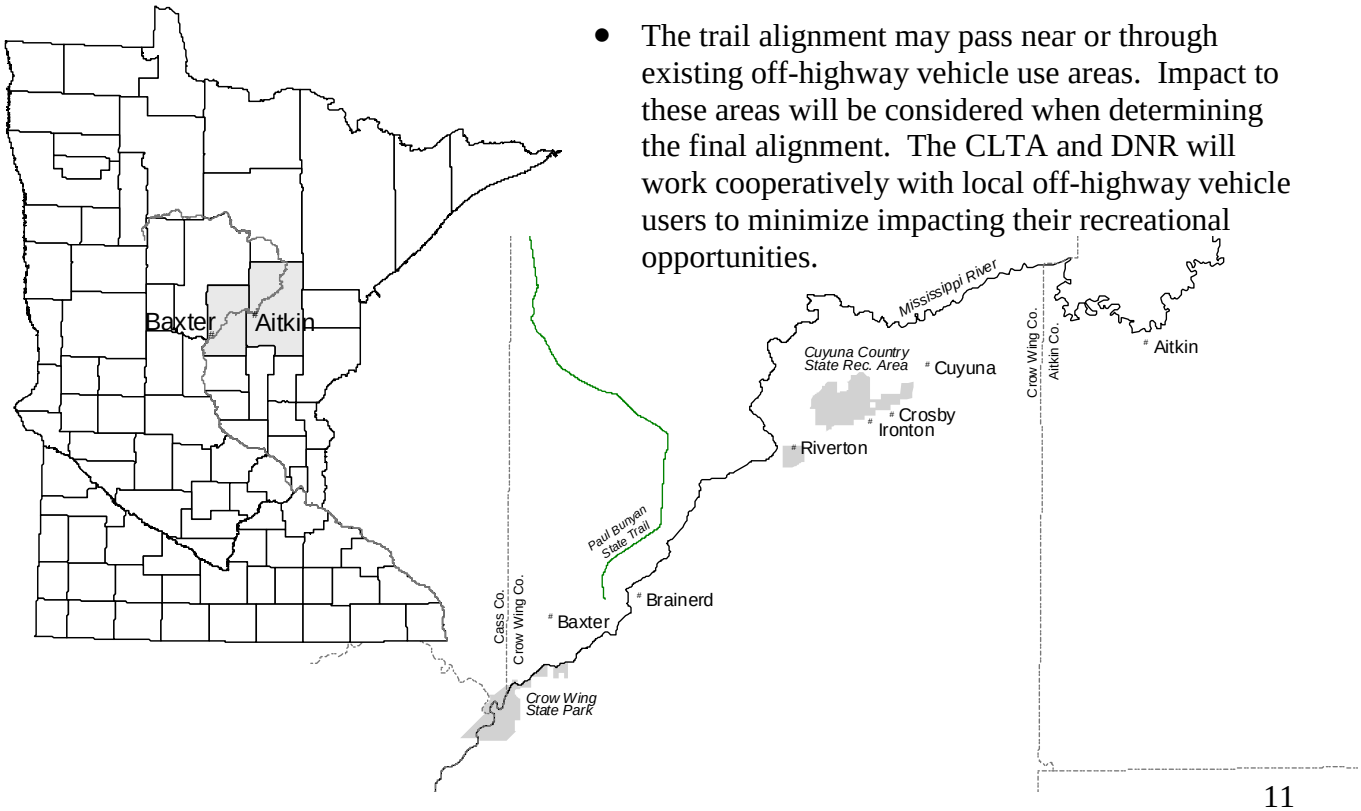
The Cuyuna Lakes State Trail is a legislatively authorized state trail which, when complete, will connect the towns of Baxter, Brainerd, Riverton, Ironton, Crosby, Cuyuna, Aitkin and the Cuyuna Country State Recreation Area. A connection to the Paul Bunyan State Trail will be an important link in the overall trail system of the central Minnesota lakes region.

For purposes of this plan, the trail alignment has been divided into four planning segments. The segments are Baxter to Lum Park in Brainerd, Lum Park to Riverton, Riverton to Cuyuna, and Cuyuna to Aitkin. If an exact alignment has not been determined for a segment, criteria for location of the trail are listed, as well as alternative corridor options. Generally, the following criteria will guide alignment planning:

- The paved trail will use abandoned railroad alignments where available. These routes offer the gentle grades required to support a diverse group of bikers, in-line skaters, walkers, and runners. Whenever practical, the paved and unpaved alignments will be separated in a manner that minimizes dust and debris from collecting on the paved alignment.

- Where former railroad alignments are not available, alternative alignments will favor the use of public right-of-way, or other existing disturbed corridors when practical. However, paved alignments will favor routes away from vehicular traffic routes for safety and for an improved trail experience.

- Existing DNR grant-in-aid snowmobile trails will be retained without change as the preferred non-paved alignment, whenever practical. If a snowmobile trail is displaced, alternatives for a permanent unpaved alignment will be considered.



- The trail alignment may pass near or through existing off-highway vehicle use areas. Impact to these areas will be considered when determining the final alignment. The CLTA and DNR will work cooperatively with local off-highway vehicle users to minimize impacting their recreational opportunities.

Baxter to Brainerd (Lum Park)

Alignment **-** Planning for snowmobile and summer routes in and near Baxter and Brainerd is now underway by the respective cities, local interest groups and the DNR. A conceptual paved alignment is shown on page 21, based on the existing (July, 2002) city of Brainerd trail system plan. The city plan shows an undefined crossing of the railroad in the vicinity of 1st Ave NE. Crossing highway 210 is the obstacle to planning a route through this area. There are three alternatives to crossing highway 210.

- Cross at-grade at 1st Ave NE along with railroad at-grade crossing [stoplight]
- Construct a tunnel crossing [under 210 and RR]
- Construct a separated grade pedestrian crossing (not identified yet) [overhead bridge?]

There is little opportunity for east-west snowmobile trails through either city except along the railroad corridor. The most likely links will be south of Brainerd and north of Baxter, following existing grant-in-aid snowmobile routes. An existing grant-in-aid snowmobile route map is on page 70, Appendix 4.

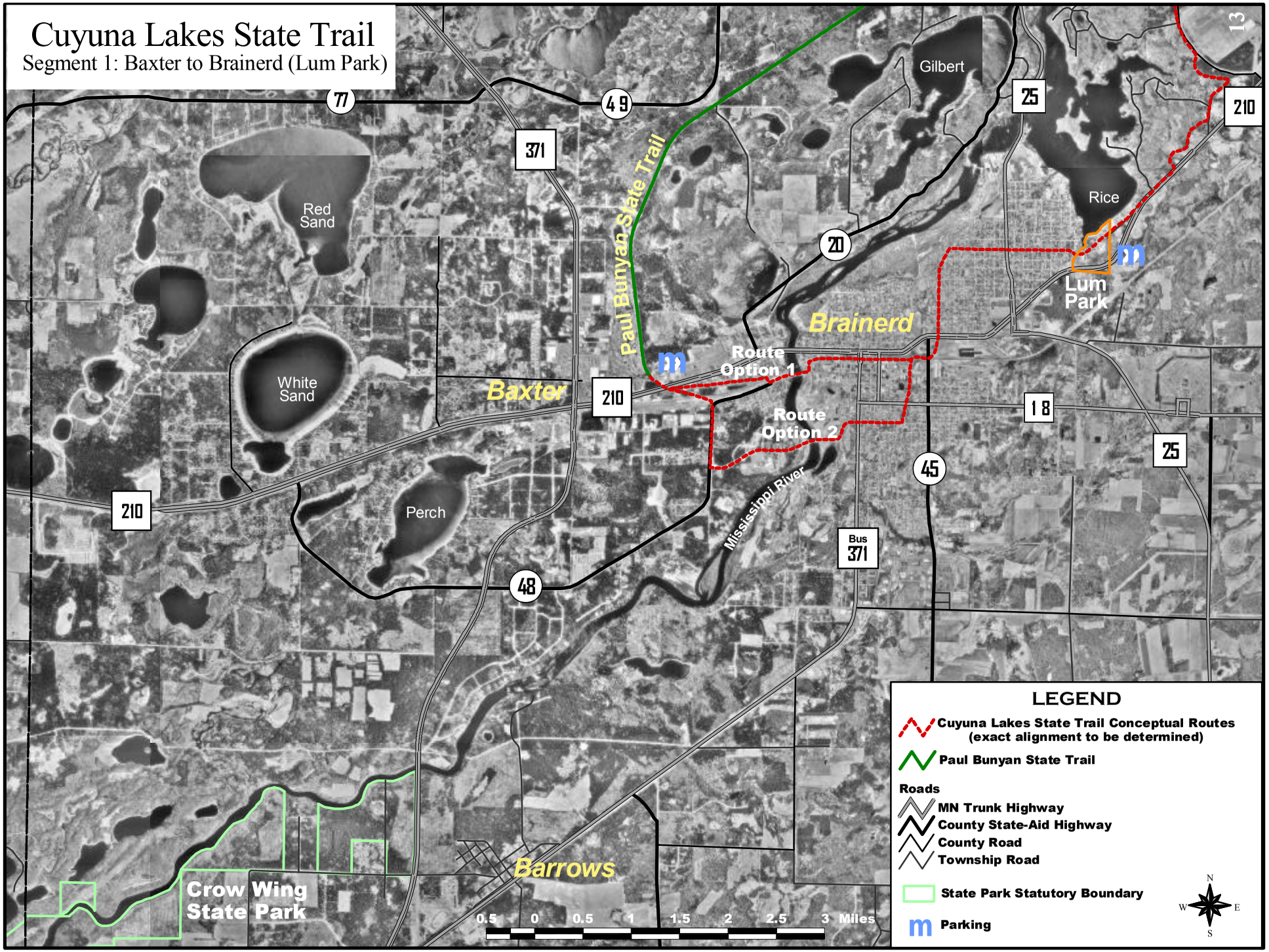
Trail Use and Surfacing **-** The paved alignment will feature a 10-foot wide surface. Permitted uses include hiking, running, biking and in-line skating. Snowmobiles will not be allowed on this segment. Unpaved alignments may be a natural surface or gravel depending on local circumstances.

Services **-** Parking is available at the Baxter trailhead of the Paul Bunyan State Trail, located just north of Excelsior Road in Baxter. Parking and trail access will also be available at Lum Park in east Brainerd. Public restrooms are located at Lum Park. Restaurants, fuel and lodging are available throughout Brainerd and Baxter.

Connections **-** Connection to the Paul Bunyan State Trail is planned to be at the existing trailhead in Baxter. Trail systems of the two communities can be accessed from the Cuyuna Lakes State Trail and the Paul Bunyan State Trail. The community trail systems connect to numerous city parks in Brainerd and Baxter as well as the Brainerd Arboretum. See map on page 21.

Cultural and interpretive opportunities **-** The proposed route of the Cuyuna Lakes State Trail passes the historic railroad yards and near the paper-mill dam on the Mississippi River.

Bridges, highway and roadway issues **-** Planning for the southern extension of the Paul Bunyan State Trail to Crow Wing State Park will be impacted by on-going planning for County Road 48, Washington Street and Excelsior Road. Grade separations are being considered for the trail at Excelsior Road and for County Road 48 at the railroad tracks. Changes to the paved alignment shown may occur, depending on the conclusions of these transportation studies.


Cuyuna Lakes State Trail
Segment 1: Baxter to Brainerd (Lum Park)
77
49
371
Paul Bunyan State Trail
Gilbert
25
210
13
Rice
20
Lum Park
Brainerd
Red Sand
White Sand
Baxter
210
Route Option 1
Route Option 2
18
25
45
Perch
Mississippi River
Bus 371
48
Barrows
Crow Wing State Park
0.5 0 0.5 1 1.5 2 2.5 3 Miles
LEGEND
Cuyuna Lakes State Trail Conceptual Routes (exact alignment to be determined)
Paul Bunyan State Trail
Roads
MN Trunk Highway
County State-Aid Highway
County Road
Township Road
State Park Statutory Boundary
Parking
N
W
E
S

Brainerd (Lum Park) to Riverton

Alignment – A preliminary alignment has been determined for this section. The alignment will go around the northern end of the airport, then east towards the county landfill. It will then continue in a northeasterly direction along old highway 210, then along the railroad grade to the Sagamore Mine segment of the CCSRA. Extensive public land is available along this route, but final route selection will have to balance topographic limitations and environmental considerations with a preference to be close to the river.

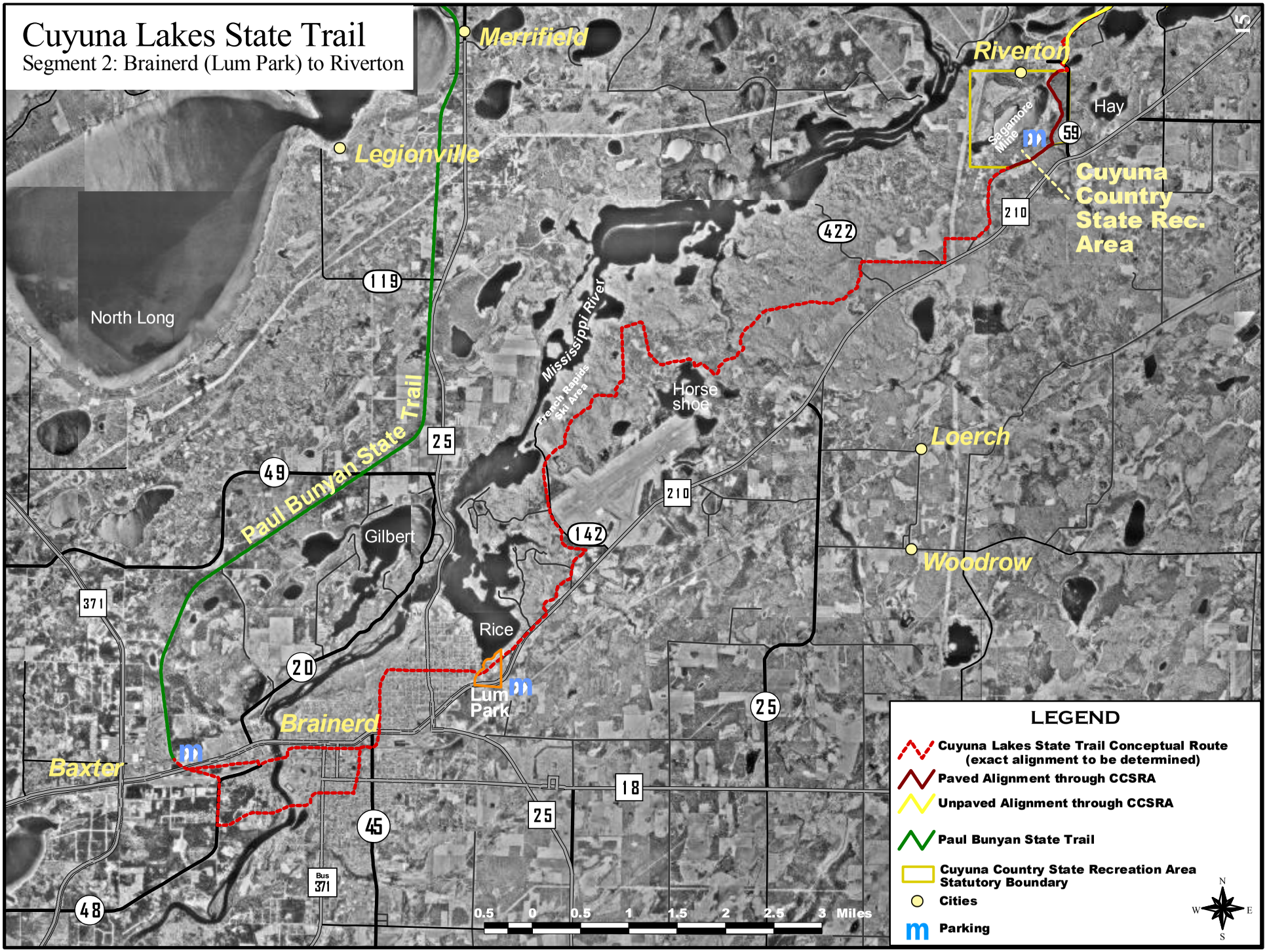
East-west snowmobile trails most likely will follow existing grant-in-aid snowmobile routes. Existing grant-in-aid snowmobile routes are shown on page 70, Appendix 4. Permanent winter right-of-way should be sought when determining final alignment of both alternatives. A bridge over the Mississippi River, to serve both winter and summer uses, would be a desirable long-term goal to promote safety and provide excellent connections to the Merrifield area and Paul Bunyan State Trail.

Trail Use and Surfacing - The paved alignment will feature a 10-foot wide surface. Permitted uses include hiking, running, biking and in-line skating. Snowmobiles will not be allowed on this segment. Unpaved alignments may be a natural surface or gravel, depending on local circumstances.

Services - Parking and trail access will be provided at either end of this segment. Restaurants, fuel and lodging are available at the Brainerd end of the trail. Parking and/or restrooms in the Sagamore Mine segment of the CCSRA will be coordinated with CCSRA managers.

Connections to public recreation - A short distance east of Lum Park is French Rapids on the Mississippi River and the French Rapids cross-country ski area. At the east end of this trail segment is the Sagamore Mine segment of the CCSRA. In the CCSRA, the DNR has planned a rustic campground and boat access for the Sagamore pit and unimproved trails are available for mountain biking, hiking and nature observation.

Bridges, highway and roadway issues - Topography becomes rugged near the Mississippi River, which means that bridges or extensive grading may be required if the trail is located close to the river. Even if the trail follows the TH 210 corridor, additional right-of-way will be required to attain the desired grades for the trail.


Cuyuna Lakes State Trail
Segment 2: Brainerd (Lum Park) to Riverton
Merrifield
Riverton
Legionville
Hay
Sagamore Mine
59
Cuyuna Country State Rec. Area
210
422
119
North Long
Mississippi River
French Rapids Ski Area
Horse shoe
Loerch
Paul Bunyan State Trail
25
49
Gilbert
210
142
Woodrow
371
Rice
20
Lum Park
Brainerd
25
Baxter
18
45
25
Bus 371
48
0.5 0 0.5 1 1.5 2 2.5 3 Miles
LEGEND
Cuyuna Lakes State Trail Conceptual Route (exact alignment to be determined)
Paved Alignment through CCSRA
Unpaved Alignment through CCSRA
Paul Bunyan State Trail
Cuyuna Country State Recreation Area Statutory Boundary
Cities
Parking
N
W
E
S

Riverton To Cuyuna

Alignment – A specific alignment for the trail has been determined in the CCSRA. The route was selected based on availability of right-of-way, appropriate grade and whether winter plowing will be done. Snowmobile trails will approximately follow existing grant-in-aid snowmobile routes, except where those routes are on the old railroad alignment being converted to the paved trail. In these areas, the new winter alignment needs to be in place before snowmobiles are not allowed on the paved trail. Permanent winter route right-of-way should be sought when determining final alignment of both alternatives. Existing grant-in-aid snowmobile routes are shown on page 70, Appendix 4.

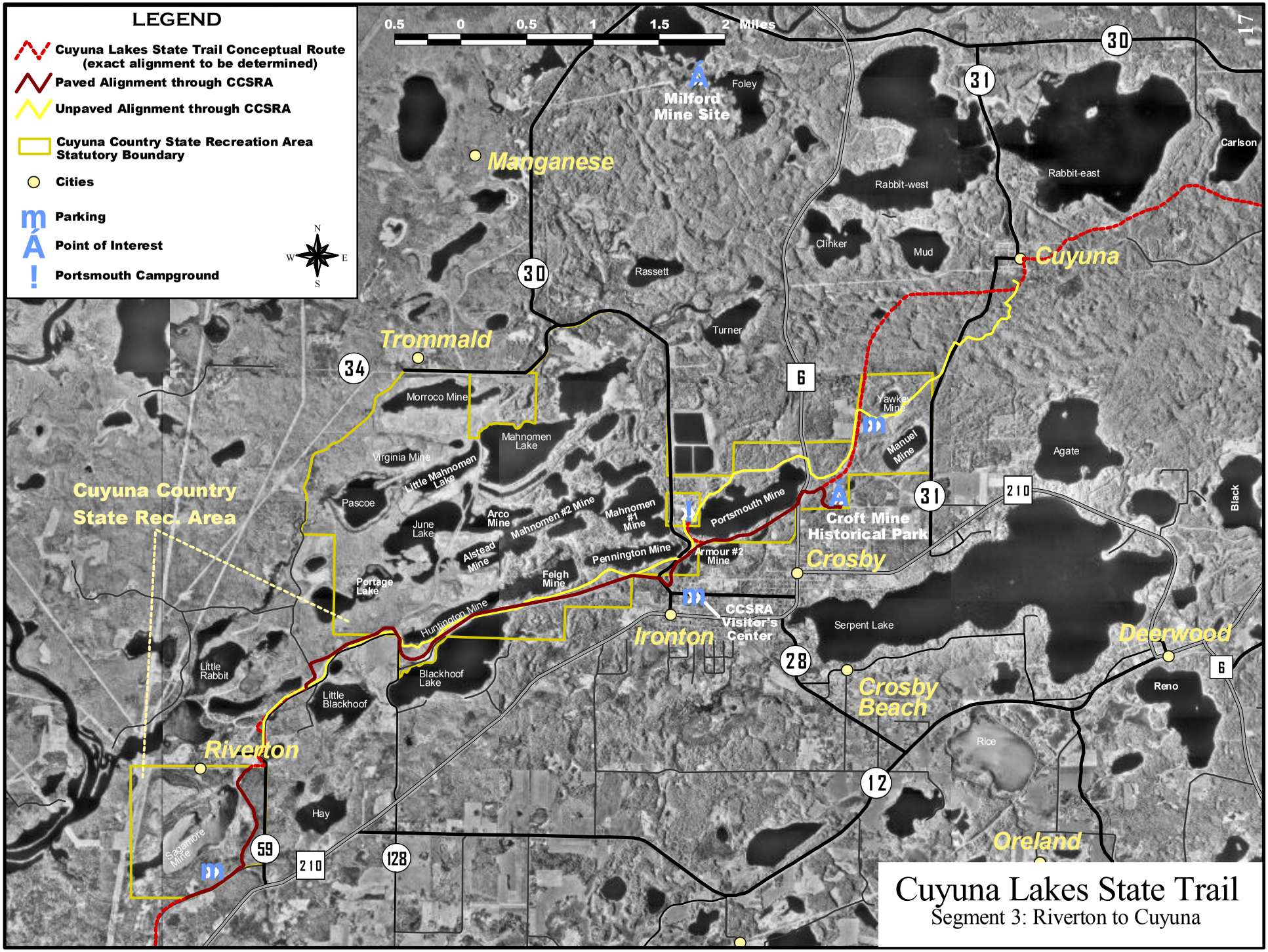
Trail Use and Surfacing - The paved alignment will feature a 10-foot wide surface. Permitted uses include hiking, running, biking and in-line skating. Snowmobiles will be restricted on this segment. Unpaved alignments may be a natural surface or gravel, depending on need to support uses in the CCSRA.

Services - Parking and a primary trailhead will be created at the CCSRA visitor's center in Ironton. Secondary trailheads will be created at the Sagamore Mine access and parking area, at the Portsmouth Campground in the CCSRA, and at the Croft Mine Historical Park. Camping is available at the CCSRA campgrounds and at Crosby's public park on Serpent Lake. Lodging is available at hotels and resorts in the Crosby-Deerwood area. Food is available in Ironton, Crosby, Deerwood and Cuyuna. Exercise, swimming and meeting facilities are available at the Hallett Community Center in Crosby.

Connections - Near the CCSRA visitor's center, summer access to Ironton businesses will be provided by marking shoulders on County Road 30. From this same general area, a future local trail running toward Trommald and Cuyuna will connect the state trail to the Milford Mine site and another local trail is proposed to connect Deerwood, Bay Lake and Garrison to one another. Extensive opportunities for hiking, nature observation, scuba diving, fishing and canoeing exist within the CCSRA.

Cultural and interpretive opportunities - Between Ironton and Crosby, east of the Armour #2 mine pit, is the proposed Miner's Mile Interpretive Segment. This mile, more or less, will concentrate historical information about the mining history, cultural history and geology of the Cuyuna Range. The Cuyuna Lakes State Trail will pass adjacent to the existing Croft Mine Historical Park and the proposed local trail to the Milford Mine site will permit interpretive development of the disaster site. See the full explanation of the Milford Mine disaster on page 57.

Bridges, highway and roadway issues - County Road 30 and State Highway 6 bisect the main unit of the CCSRA and the State Trail. Special signage will be required at the intersection of the trail and County Road 30 and State Highway 6 for safety of trail users.



Cuyuna Lakes State Trail

Segment 3: Riverton to Cuyuna

Cuyuna To Aitkin

Alignment – A specific alignment for this segment has not been determined. Aitkin County has suggested an alignment that would follow County Roads 30, 32, and 15 to minimize bridgework.

The Glacial Lake Aitkin Trail Committee is proposing a trail system in Aitkin County. They have completed a system plan that "will provide Aitkin County with trail options and implementation strategies that will result in a non-motorized trail that can be expanded and enhanced over time." The trail will generally follow the Great River Road and is planned to be constructed in four phases. Phase one has the highest priority and is part of the corridor that will connect Cuyuna to Aitkin. Currently, a route has not been finalized from Cuyuna to the Crow Wing/Aitkin County border. When this alignment has been determined, work with the Glacial Lake Aitkin Trail Committee will continue to finalize the rest of the alignment leading east into the city of Aitkin. The map shows three potential alignments within Aitkin County.

Snowmobile trails are expected to approximately follow existing grant-in-aid snowmobile routes, except where those routes are converted to a paved trail. In these areas, a new winter alignment needs to be in place before restrictions are placed on the paved trail. Permanent winter route right-of-way should be sought when determining final alignment of both alternatives.

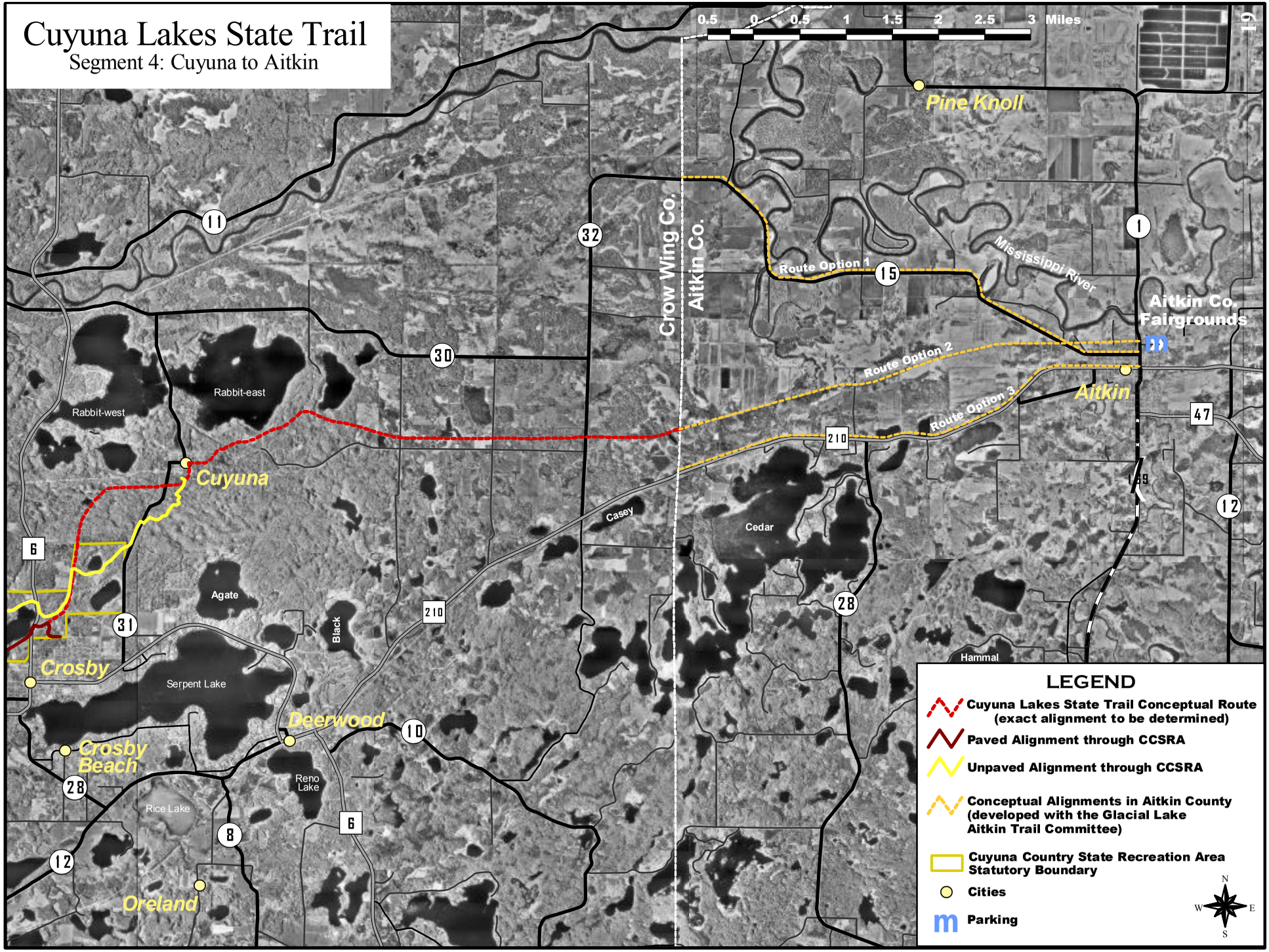
Trail Use and Surfacing - The paved alignment will feature a 10-foot wide surface. Permitted uses include hiking, running, biking and in-line skating. Snowmobiles will not be allowed on this segment. Unpaved alignments may be a natural surface or gravel.

Services - Parking and trail access will be available within the towns of Cuyuna and Aitkin. An official trailhead will be located at the Aitkin County Fairgrounds and will serve as a trailhead for the Cuyuna Lakes State Trail and the Glacial Lake Aitkin Trail. Restaurants, fuel and lodging are available within Aitkin, while Cuyuna offers limited trail services.

Connections – From Aitkin, a future connection to the Mesabi Regional Trail, which when completed will run from Grand Rapids to Ely, is a possibility. If desired, a future connection from the Cuyuna Lakes State Trail to the Munger State Trail would also begin at Aitkin. In addition, a connection to the Glacial Lake Aitkin Trail will begin in Aitkin at the shared trailhead.

Cultural and interpretive opportunities - The trail will pass through the lakebed of Glacial Lake Aitkin, affording an opportunity to present glacial history of the Aitkin and Lake Mille Lacs area.

Bridges, highway and roadway issues - Topography becomes rugged near the Mississippi River, which means that bridges or extensive grading may be required if the trail is located close to the river. Even if the trail follows the TH 210 corridor, additional right-of-way will be required to attain the desired grades for the trail.


Cuyuna Lakes State Trail
Segment 4: Cuyuna to Aitkin
0.5 0 0.5 1 1.5 2 2.5 3 Miles
Pine Knoll
Crow Wing Co.
Aitkin Co.
Route Option 1
Mississippi River
Aitkin Co. Fairgrounds
Route Option 2
Route Option 3
Aitkin
Rabbit-east
Rabbit-west
Cuyuna
Casey
Cedar
Agate
Black
Serpent Lake
Crosby
Deerwood
Crosby Beach
Reno Lake
Rice Lake
Oreland
Hammal
LEGEND
Cuyuna Lakes State Trail Conceptual Route (exact alignment to be determined)
Paved Alignment through CCSRA
Unpaved Alignment through CCSRA
Conceptual Alignments in Aitkin County (developed with the Glacial Lake Aitkin Trail Committee)
Cuyuna Country State Recreation Area Statutory Boundary
Cities
Parking
N
W
E
S

Trail Alignment within the Communities

Baxter/Brainerd

The Cuyuna Lakes State Trail begins at the existing Paul Bunyan State Trail trailhead in Baxter and follows the Baxter and Brainerd trail systems through the urban area. Virtually no separation is possible between the trail and traffic corridors in many reaches of this segment. Crossing of the Mississippi River requires use of existing bridges. Details of the route are subject to change, with significant street and highway improvements being planned.

Numerous stores, restaurants, commercial services and user services exist along the urban route. The newly expanded YMCA lies adjacent to the planned alignment for the paved trail. Brainerd has also planned its trail system to access most of their city parks, including Lum Park at the eastern edge of the city.

Opportunities for cooperation exist in development of routes through the urban area. The Brainerd/Baxter trail coordinating committee (consisting of local citizens, business and resort owners, county officials, representatives from PCA, MnDOT, and DNR) is working cooperatively with nearby communities to connect to new city systems, to downtown areas and to the Cuyuna Lakes State Trail. Great challenges also exist in this segment where the trail will pass over and near heavy-traffic areas.

The Cuyuna Lakes Trail Association and the DNR should work with the City of Brainerd to provide an all-season trail access point on the eastern side of the urban area, possibly at Lum Park or at the airport. Existing snowmobile routes are seasonally limited because they require excellent ice conditions on the Mississippi River for safety. Alignment planning should focus on the issue of winter trail use through the urban area.

Communities of Baxter & Brainerd

Route Option 1

Route Option 2

Paul Bunyan State Trail

Lum Park m

Brainerd Arboretum m

Brainerd State School and Hospital

BAXTER

BRAINERD

Mn/DOT DISTRICT HEADQTRS.

BRAINERD COMMUNITY COLLEGE

Trailer Court

Red Sand Lake

Carlson Lake

Jacks Lake

Mud Lake

Gilbert Lake

Rice Lake

Little Whipple Lake

Whipple Lake

White Sand Lake

Rush Lake

Perch Lake

First Island

Mississippi River

B.N.S.F.

LEGEND

City Trails

- On-Road Signage
- Existing Trail
- Potential Cuyuna Lakes State Trail Routes
- Parks
- m Parking/Trailhead

Transportation base map provided by MnDOT
City parks and trail data provided by Dahlgren, Shardlow and Uban, Inc.

0.25 0 0.25 0.5 0.75 1 1.25 1.5 1.75 2 Miles

Minnesota Department of Natural Resources

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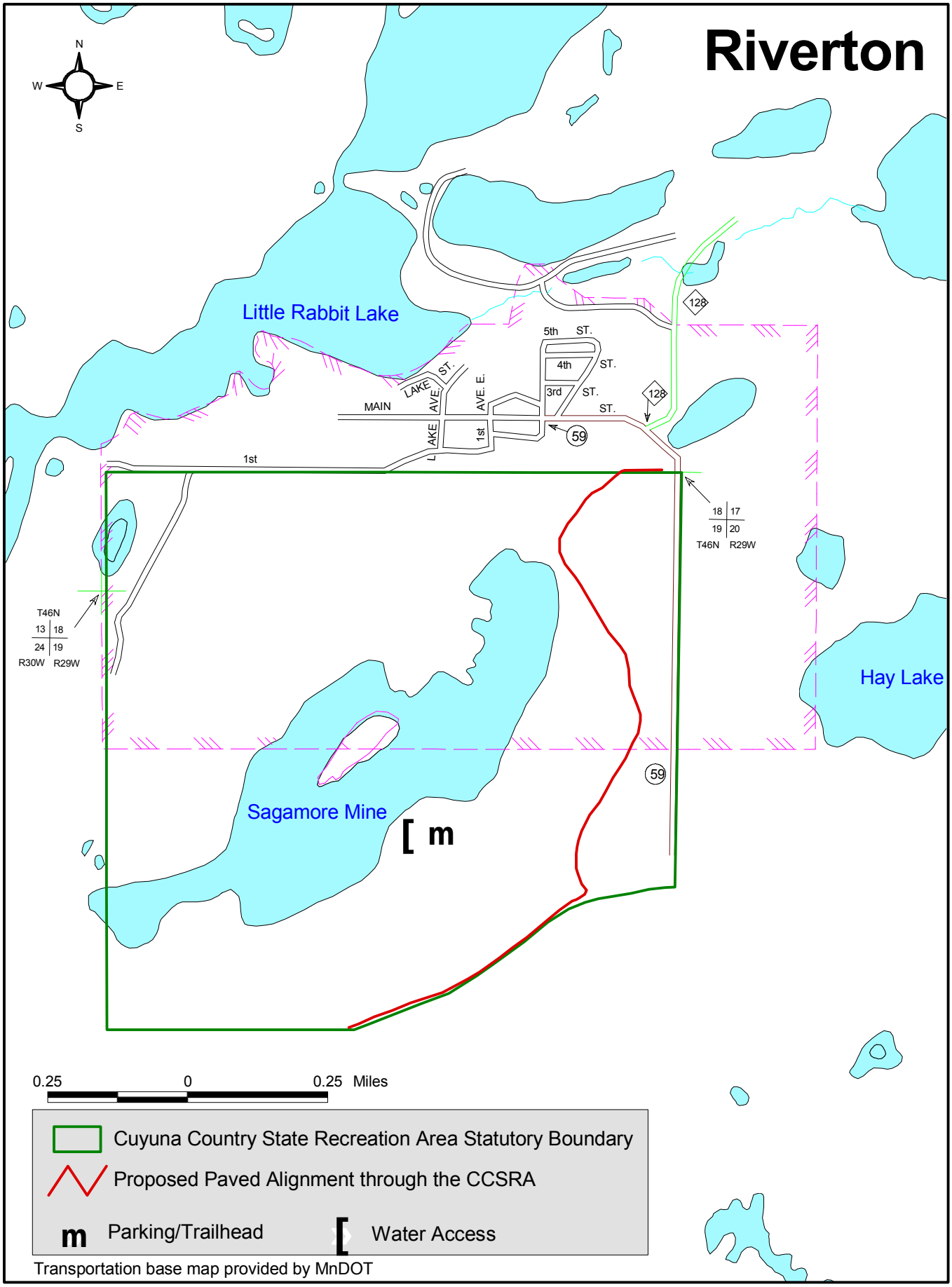
Riverton

Riverton lies at the western end of the Cuyuna Country State Recreation Area (CCSRA). It is primarily a residential community. Services, lodging and restaurants do not exist.

The Sagamore pit portion of the CCSRA is not connected to the main body of the CCSRA at this time, but excellent scenery and fishing will draw visitors to this end of the CCSRA. Access to the Sagamore Pit is through Riverton. The DNR has planned water access for the Sagamore Pit. A primitive campground exists on the north shore. A small trailhead would be desirable at this location. The CLTA will work with the DNR to coordinate trail development within the CCSRA.



Transportation base map provided by MnDOT

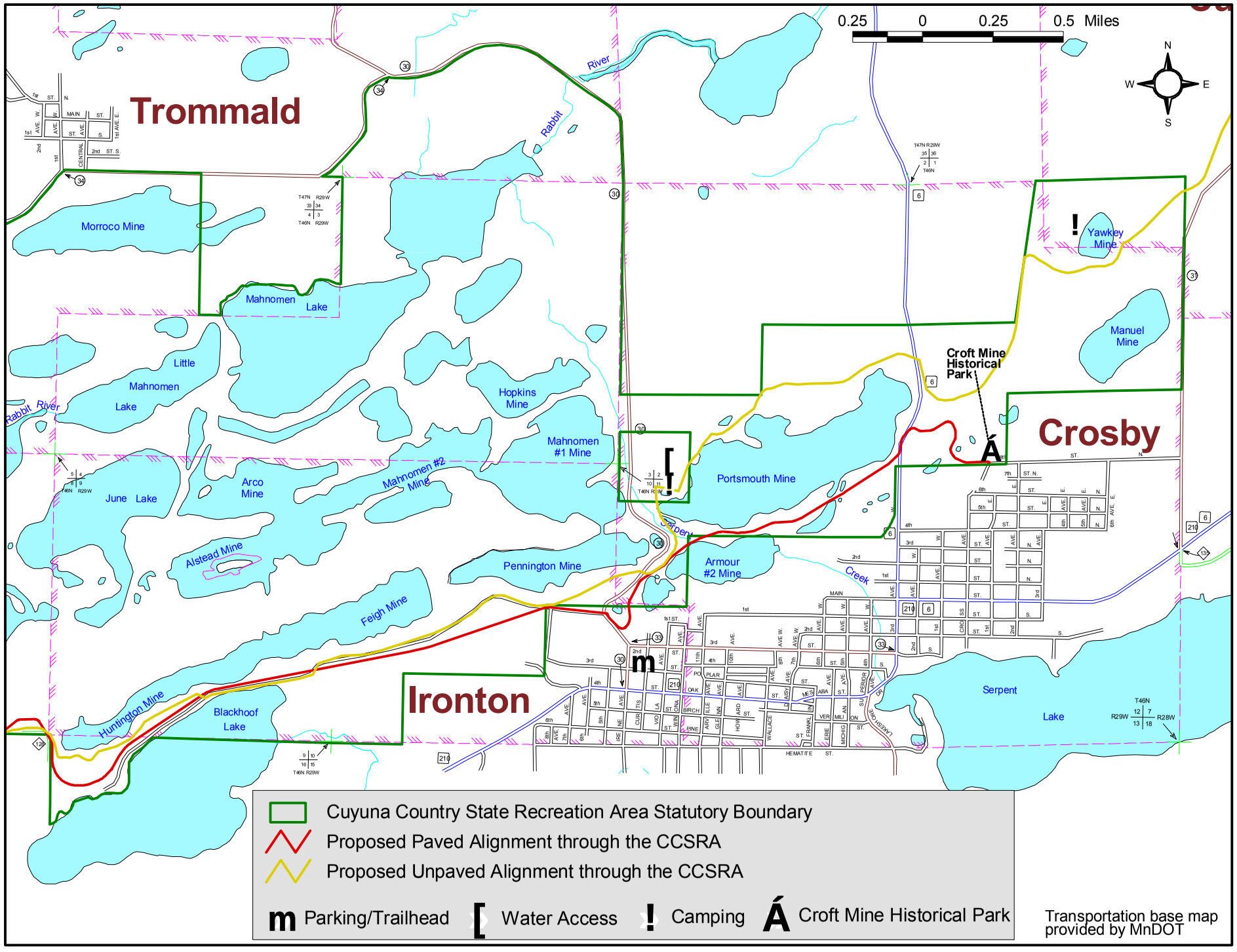
Ironton/Crosby

Ironton will be the access point to the CCSRA from the Cuyuna Lakes State Trail. Recreation area management services will be located here. Both paved and unpaved access to downtown Ironton is possible, where trail users will find restaurants and services. The access is away from highway traffic, making this a safe connection for trail users.

Ironton will be the beginning of the "Miner's Mile," an interpretive segment of the trail intended to focus on the mining heritage of the area. Actually more than a mile long, it will extend to Crosby, where paved and unpaved access to downtown is also possible.

In Crosby, the trail passes adjacent to the Croft Mine Historical Park, a re-created underground mining experience, museum and interpretive center. Each summer, Crosby presents "Heritage Days", an event that focuses on the mining heritage of the area. Crosby offers restaurants, lodging, shopping and services. The Crosby community park on Serpent Lake offers camping, swimming, a public water access, a fishing pier and play areas and could serve as trail parking and access area. Two blocks from the Croft Mine Historical Park is the Hallett Community Center, featuring snacks, exercise facilities and meeting rooms. Crosby also boasts an excellent hospital and clinic.

Within the CCSRA itself (see map on page 32), swimming, boating, scuba diving and wilderness activities exist in addition to about 60 miles of paths, mining roads and trails supporting casual hiking to aggressive mountain biking. The local high school lies adjacent to the unpaved "downtown" route of the trail. Students will no doubt use the trail during the school year.

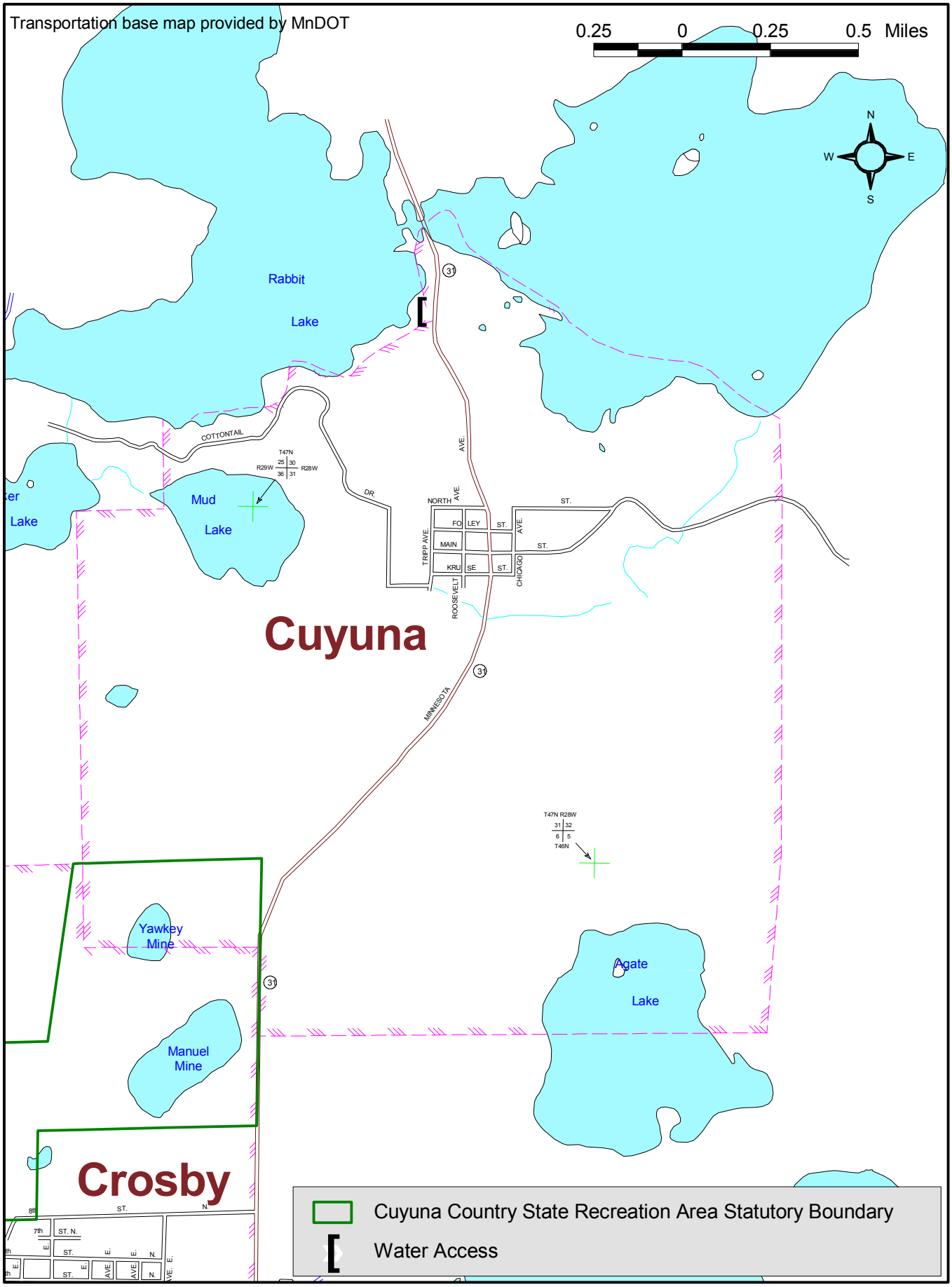

0.25 0 0.25 0.5 Miles
N
W
E
S
Trommald
Crosby
Ironton
Morroco Mine
Mahnomen Lake
Little Mahnomen Lake
Rabbit River
June Lake
Arco Mine
Alstead Mine
Mahnomen #2 Mine
Mahnomen #1 Mine
Hopkins Mine
Portsmouth Mine
Pennington Mine
Armour #2 Mine
Feigh Mine
Huntington Mine
Blackhoof Lake
Yawkey Mine
Manuel Mine
Croft Mine Historical Park
Serpent Lake
Cuyuna Country State Recreation Area Statutory Boundary
Proposed Paved Alignment through the CCSRA
Proposed Unpaved Alignment through the CCSRA
m Parking/Trailhead
[Water Access
! Camping
Á Croft Mine Historical Park
Transportation base map provided by MnDOT

Cuyuna

Cuyuna lies at the northeast edge of the CCSRA and is at the east end of the first phase of trail development. It is primarily a residential community, with a single restaurant and limited trail services.

Cuyuna was the first mining town on the Cuyuna Range, serving the first mine, which was originally an underground mine. It was converted to an open pit nearly 400 feet deep, which is now flooded as part of nearby Rabbit Lake. Rabbit Lake offers excellent boating and fishing. The public access to Rabbit Lake is north of Cuyuna on Crow Wing County Road 31.

The CLTA and the DNR will work with Cuyuna to determine paved and unpaved routes in the city and the connections to local facilities.


Transportation base map provided by MnDOT
0.25 0 0.25 0.5 Miles
N
W
E
S
Rabbit
Lake
COTTONTAIL
T47N
R29W
25
30
36
31
R28W
Mud
Lake
DR
NORTH AVE.
FO
LEY
ST.
AVE.
ST.
TRIPP AVE.
MAIN
KRU
SE
ST.
CHICAGO
ROOSEVELT
Cuyuna
MINNESOTA
T47N R28W
31
32
6
5
T46N
Yawkey
Mine
Manuel
Mine
Agate
Lake
Crosby
8th
ST.
N.
7th
ST. N.
E.
AVE.
Cuyuna Country State Recreation Area Statutory Boundary
Water Access

Aitkin

Aitkin is at the eastern end of the Cuyuna Lakes State Trail. Aitkin lies at the junction of Ripple (Mud) River and the Mississippi River, a principal water route used by the American Indians to commute between their large encampments on Big Sandy Lake and Lake Mille Lacs. Today, it lies at the junction of TH 169 (north-south) and TH 210 (east-west).

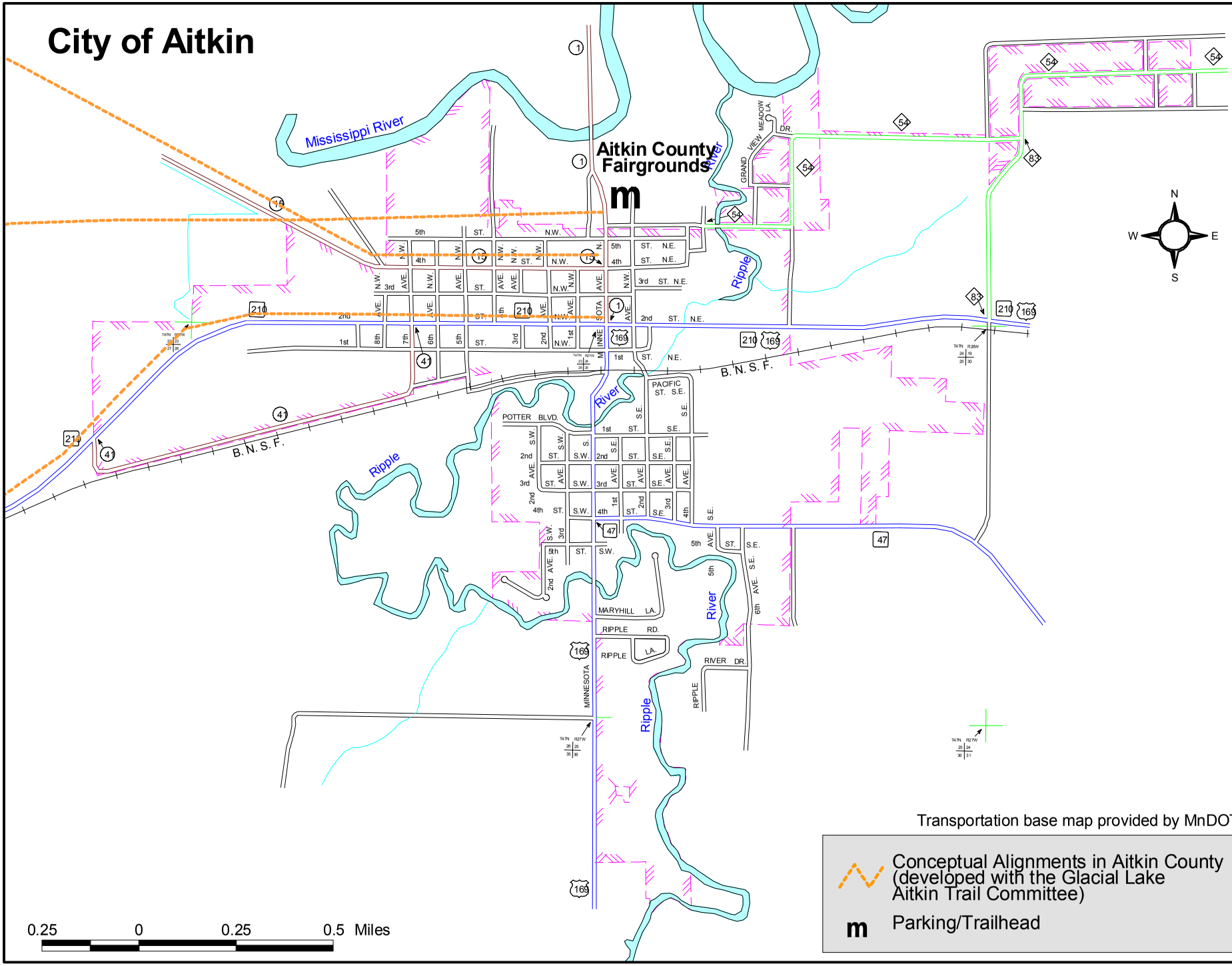
Founded in 1871, this community boomed during the logging era. It became a riverboat transportation center for boats running between Grand Rapids and Aitkin, carrying passengers and lumber. It was named for William Alexander Aitkin, a famed fur trader with the Ojibwe Indians.

Aitkin boasts public campgrounds, shopping, restaurants and services for trail users. Lodging facilities are available at local inns and nearby resorts. Several public and private campgrounds are located in the Aitkin area. The rivers are an excellent resource for canoe enthusiasts. The Great River Road and the proposed Mississippi River Trail run through Aitkin.

Aitkin has excellent medical facilities, multiple parks near the trail and hosts the Aitkin County Fair each year. Winter and summer activities and festivals are available. Some of the community festivals include: the famous *Fish House Parade* in November, *Riverboat Heritage Days* in July, and the *Festival of Adventures & Aitkin Fur Post Rendezvous* in September.

The DNR and the CLTA will coordinate with the city of Aitkin, Aitkin County, and the Glacial Lake Aitkin Trail Committee on connections with local trails and facilities. The trailhead will be located at the Aitkin County Fairgrounds, in the city of Aitkin, and will be multi-purpose as it will serve as the trailhead for the Cuyuna Lakes State Trail and the Glacial Lake Aitkin Trail system.

City of Aitkin



Cuyuna Country State Recreation Area

The Cuyuna area was a border area between the Dakota and the Ojibwe Indians and served as a long portage route from Mille Lacs Lake to the upper Mississippi River. It wasn't until the early 1900s that major changes took place in the area. Cuyler Adams, who homesteaded here in the late 19th century, noticed great compass deflections while surveying his land in 1903. He noted that this was probably due to the presence of iron ore beneath the surface. He was right. In 1904, Adams discovered ore and the range he discovered was subsequently named for him using the first three letters from Cuyler, and the three-letter name of his St. Bernard dog, Una, his constant companion and prospecting partner.

Cuyuna was the last of Minnesota's three major iron ranges to be discovered and mined. It extends almost 70 miles from Randall in Morrison County, northeast through Crow Wing County, and ends in central Aitkin County. Drilling began in 1904 with the discovery by Adams of "good ore" in the area. By 1909, approximately 2,000 drill holes had been completed and new town sites of Cuyuna, Crosby, Ironton, Manganese, Riverton, and Trommald were established.

Twenty to 30 mines operated in the area during the mining boom of World Wars I and II. Nearly 20 mines continued to operate in the early 1950s. Foreign competition and taconite mining on the Mesabi Range caused a virtual shutdown of the Cuyuna ten years later. Abandoned mining operations left behind a landscape dotted with mining pits 100 to 525-feet deep and rock stockpiles 200-feet high.

In 1981, the Iron Range Resources and Rehabilitation Board (IRRRB) requested that an advisory committee be formed to improve the appearance and the recreational use of the Cuyuna Range abandoned mining area. The Cuyuna Range Mineland Reclamation Committee was formed and completed many projects including: public water accesses, campgrounds, channels, overlooks, annual clean-up events and trout stocking.

The committee realized that the mineland area was a very unique resource and should be preserved. Originally, the committee considered the idea of a regional park, however, there was not enough financial resources to support the project. They then formed the Cuyuna Range Mineland Recreation Area Joint Powers Board in 1988. The purpose of this board was to formulate plans for the area to protect it from uncontrolled and unplanned development through the adoption of zoning ordinances, formation of a plan for continued recreational use of the area, donation, purchase or lease of critical lands in the public interest, and sound management of the public lands.

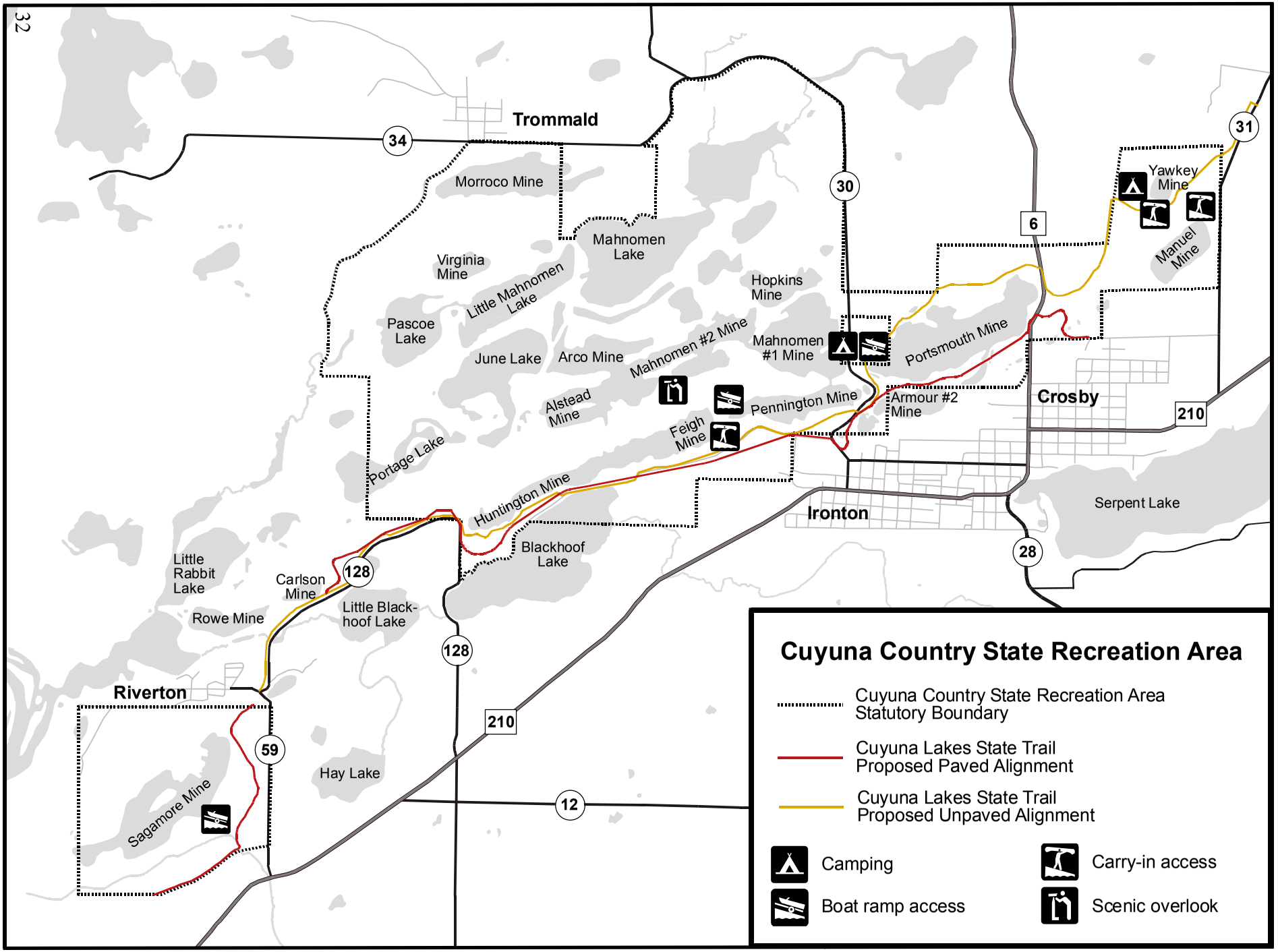
Through the efforts of the IRRRB, Crow Wing County, local governments, two joint powers boards, volunteer groups, and the Department of Natural Resources, the area has become an outdoor recreation attraction and officially became a Minnesota State Recreation Area in 1993. Many recreational opportunities exist within the CCSRA including hiking, camping, fishing, hunting, canoeing, boating, scuba diving, horseback riding and snowmobiling. Off-highway vehicles are not permitted within the boundaries of CCSRA.

Over the last 20 years, the landscape that was dotted with mining pits and stockpiles has changed. The deep pits are now filled with crystal clear water and a variety of vegetation now covers the area. The result is 25 miles of undeveloped shoreline with a considerable area of forested land containing trembling aspen, paper birch, basswood, red oak, ironwood and big-tooth aspen. The marsh areas contain bulrush, cattail and sedge. These communities provide a home for a wide variety of wildlife. The area contains six natural lakes, plus an additional 15 deep lakes that were former mine pits. Trout, northern, bass, crappies, sunfish and walleyes inhabit the area's lakes.

As for future mining use of the Cuyuna Country State Recreation Area, the enabling legislation states: (Laws of Minnesota for 1993, Chapter 172, Section 34, subd. 3)

> "MINING. The commissioner shall recognize the possibility that mining may be conducted in the future within the Cuyuna Country State Recreation Area, and that use of portions of the surface estate and control of the flowage of water may be necessary for future mining operations."

The most valuable mineral commodity within the CCSRA is manganese ore. Manganese is a critical defense-related element used as a hardening agent in the steel making process. The Cuyuna Range was an important supplier of manganese in WW I and WW II when foreign supplies were threatened and were drastically reduced at times during the wars. The reserves of manganese in the Cuyuna Range are large but of low-grade quality. The United States currently imports almost all of the manganese used in steel production. The only reason the Cuyuna Range would be put back into production is if there was a metallurgical breakthrough or if there was a world crisis. Areas with the highest potential for future mining have been described in the Cuyuna Country State Recreation Area Management Plan. The most likely areas to be put back into production for manganese, due to the highest concentration of mineable ore, would be the Hopkins and Sagamore mine areas. Future mining may impact the trail but it is nearly impossible to predict when, or even if, this may take place within the CCSRA.


Trommald
34
Morroco Mine
Mahnomen Lake
Virginia Mine
Little Mahnomen Lake
Pascoe Lake
June Lake
Arco Mine
Mahnomen #2 Mine
Alstead Mine
Portage Lake
Huntington Mine
Blackhoof Lake
Little Rabbit Lake
Carlson Mine
128
Little Black-hoof Lake
Rowe Mine
Riverton
59
Hay Lake
Sagamore Mine
210
12
30
Hopkins Mine
Mahnomen #1 Mine
Pennington Mine
Feigh Mine
Armour #2 Mine
Portsmouth Mine
Ironton
6
Crosby
31
Yawkey Mine
Manuel Mine
210
28
Serpent Lake
Cuyuna Country State Recreation Area
Cuyuna Country State Recreation Area Statutory Boundary
Cuyuna Lakes State Trail Proposed Paved Alignment
Cuyuna Lakes State Trail Proposed Unpaved Alignment
Camping
Carry-in access
Boat ramp access
Scenic overlook

Connections with Other Trails and Facilities

Communities, recreational opportunities, and the regional economy will all be served by the connections made by the Cuyuna Lakes State Trail system.

- The Cuyuna Lakes State Trail system will provide the seven communities on the Cuyuna Range with a sense of unity and common purpose, and the related opportunity for economic success.

- The Cuyuna Lakes State Trail will be part of the Mississippi River Trail, as well as a future connection to the Willard Munger State Trail, the Mesabi Regional Trail, and the Glacial Lake Aitkin Trail system in Aitkin County.

- The Cuyuna Lakes State Trail system will connect tourism destinations and resources of the central Minnesota lakes area.

- The trail system will connect to the Paul Bunyan State Trail, extending the demonstrated success of that trail to the Cuyuna Range.

- The Cuyuna Lakes State Trail system, together with nearby state, local, and other connecting trails, will connect Crow Wing State Park, the Croft Mine Historical Park, other historical locations, and the tourist attractions of the lakes area.

- An important local connection will be to the Glacial Lake Aitkin Trail in Aitkin County. Cooperative planning is underway with the Glacial Lake Aitkin Trail Committee to connect the two trail systems.

- The trail system will connect area historic sites and museums that illustrate the mining heritage of area residents, and the earlier Ojibwe and Dakota Indians who used the area as a major portage route from Mille Lacs Lake to the upper Mississippi watershed until shortly before mining began.

- The Cuyuna Lakes Trail system will connect the public with the natural resources and unique landforms in the area.

Projected Trail Use

The presence of the Cuyuna Country State Recreation Area is expected to draw a large number of persons to the Cuyuna Lakes State Trail system. The recreation area will support alternative uses (mountain biking, horseback riding, cross-country running, etc.) that are compatible with and will encourage trail use. Conservatively, it is estimated that use of the Cuyuna Lakes State Trail will be similar to the use experienced at the Heartland State Trail and the Paul Bunyan State Trail. A MNDNR trail use survey completed in 2000, reports that the Heartland and Paul Bunyan State Trails each generated over 4,000 user hours per mile during the summer period.

Trail Maintenance

Maintenance of the Cuyuna Lakes State Trail is critical to provide and sustain the experience trail users appreciate. Maintenance activities are numerous and diverse, as the following list illustrates.

- 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, 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, gates and cattle crossings
- Mowing and brushing farm crossings
- Cleaning out ditches and culverts, replacing failing culverts
- Vegetation management – restoration/enhancement
- Controlling noxious weeds
- Maintaining equipment
- Painting posts and picnic tables
- 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 doing maintenance work
- Any future sections of the trail developed with asphalt will require sweeping.

Recommendation 1: The Division of Trails and Waterways will require additional maintenance funds as the trail 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 within Cuyuna Country State Recreation Area, which is managed by the Division of Parks and Recreation. To ensure appropriate protection of State Recreation Area resources, view sheds 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, State Recreation Areas. Local trail managers will plan, schedule and coordinate maintenance activities following these guidelines with the appropriate Recreation Area Manager.

Information and Education

Identification of Services

Trail users benefit from knowing where they can obtain services (medical assistance, gasoline, food, lodging, rest rooms, campgrounds, repair facilities, other retail) and local businesses benefit from an increase in customers. A listing of the services available in each community should be developed in cooperation with local businesses and community groups and be displayed on information boards in each community.

A standardized sign indicating the distance to services should be put up in the trail right-of-way. Currently, state trail rules and regulations prohibit commercial advertisements and concessions in the trail right-of-way.

Trail User Orientation

A mile marker system should be established along the trail. Mile markers will serve to orient trail users to their location as well as assist emergency responders in locating trail users in need of medical assistance.

Information boards at parking areas and in communities should be installed to provide an overview of the trail and to orient trail users.

A standard information board design should be used in host communities and at other locations where wayside exhibits are proposed. The design should carry through the mining theme found at the Croft Mine Historical Park, at other reclamation projects within the CCSRA, and at the proposed "Miner's Mile." They should also fit with the northern pine and lakes region.

Trail Rules and Regulations

User-friendly trail courtesy and safety display boards that are aimed at educating trail users about appropriate behavior, promoting safe trail use and protecting the quality of the trail environment should be posted at information kiosks along the trail.

Trail users are legally responsible for obeying the rules and regulations provided in Minnesota Rules, State Recreational Trails, 6100.3000 through 6100.4300. They can be obtained from the web at *www.leg.state.mn.us/leg/statutes.asp.*

Interpretation of Natural and Historical Resources

Interpretive signs and displays should be placed along the trail to provide information about natural resources of significance and interest (rivers, lakes, wetlands, forests and prairie vegetation) and at places that tell the history of the region.

An interpretive theme has been identified for the Cuyuna Lakes State Trail system to tie together spatially separated interpretive sites and provide continuity in the messages. The recommended interpretive theme will feature Cuyler Adams and his dog, Una, to explain the area's cultural diversity, mining history and the plan for the future.

Environmental Education

The trail and the CCSRA have great potential for environmental education. One goal of the Cuyuna Range communities is to foster a culture of lifelong learning highlighting the natural resources of the region. The CCSRA offers an excellent opportunity to provide education about the reclamation of an area that was highly degraded by the mining industry and how it has been turned into a beautiful area. The trail corridor provides an opportunity for education regarding managed and natural reforestation. The CLTA and DNR will work together to advocate appropriate environmental education programs along the trail.

Recommendation 1: Develop a kiosk design that reflects the interpretive theme for the trail that can be used in the communities along the trail. Use of the same design helps build an identity for the trail and alert users to trail information.

Recommendation 2: Community services information, trail orientation, trail rules and trail courtesy information should be developed and installed on kiosks at the same time the trail is developed.

Recommendation 3: Interpret the natural and cultural features along the trail.

Enforcement

Enforcement activities are a vital aspect of maintaining a safe and secure trail environment. Enforcement of state trail rules and regulations, information and education, trail design, trail maintenance and the mix of trail uses are all factors that contribute to the maintenance of a safe, secure trail environment. DNR has the primary responsibility for law enforcement on DNR owned and operated recreation areas. Enforcement assistance will also be sought from the local Police Departments and the County Sheriffs.

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. A negative impact on public safety and natural resources can result due to the lack of sufficient law enforcement. A solution promoting law enforcement coverage with trail development must be found.

Recommendation 1: Provide an adequate level of enforcement via a multifaceted approach to help maintain a safe and secure trail environment, to encourage trail users to understand and obey trail rules and respect other trail users and adjoining properties. To accomplish this, additional enforcement officers are required to address the enforcement needs of the expanding trail system in Minnesota.

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 & Waterways and Parks & Recreation staff during peak use times for an enforcement effect.

Recommendation 4: The Divisions of Trails & Waterways and Parks & Recreation 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.

Impact of the Trail

It is essential that the trail be located, developed, and maintained in a way that does not detract from the landscape. Both site and landscape level impacts of the trail will be assessed when a specific alignment is determined. It is a goal to minimally impact existing natural and cultural resources. Preliminary groundwork, pertaining to inventory of natural and cultural resources, has been completed to assess any potential impacts the trail may have. These impacts, both positive and negative, need to be evaluated on both a site and landscape level so that we can minimize the negative and accentuate the positive impacts. The trail will most likely be located in existing, disturbed corridors.

We know that the trail will attract additional people to experience the area as well as provide a recreational need for the residents of the area. Trail users will come to the trail to enjoy the landscape and the natural and cultural resources it has to offer. By providing people with access and opportunities for recreation, as well as education about the landscape they will be experiencing, they will develop an appreciation for the resources, which will translate into stewardship and appreciation for the landscape. Trail users will mainly be using facilities that already exist. For example, campgrounds, other recreational areas, hotels, and restaurants already exist along some sections of the proposed corridor.

Ecological Classification System

The Ecological Classification System (ECS) is part of a nationwide mapping initiative developed to improve our ability to manage all natural resources on a sustainable basis. This is done by integrating climatic, geologic, hydrologic and topographic, soil and vegetation data.

Three of North America's ecological regions, or biomes, representing the major climate zones converge in Minnesota: prairie parkland, deciduous forest and coniferous forest. The presence of three biomes in one non-mountainous state is unusual, and accounts for the diversity of ecological communities in Minnesota.

The Cuyuna Lakes State Trail passes through four ECS subsections. See map on page 43. The four subsections are: Pine Moraines & Outwash Plains, Mille Lacs Uplands, St. Louis Moraines, and Tamarack Lowlands. These four subsections occur in the Laurentian Mixed Forest Province, which is best described as the largest of the state's three biomes. It covers two-fifths of the state, including the north central and northeastern regions. Once mountainous, this rugged area claims both the highest and lowest points in the state.

Glaciers sculpted this landscape, leaving relatively thin deposits of till blanketing the bedrock in the northeast and deeper deposits in the southern and western portions. Boulders, outcrops, hills, numerous lakes, bogs, and vast tracts of forestland comprise Minnesota's scenic and much beloved "up north." The state's iron ranges also occur here, along with many other Precambrian rocks and well-exposed lava flows. Dense forests occupy the uplands, with bedrock lakes in the northeast, ice block lakes in the south and west, and large, open peatlands in lower areas.

Pine Moraines & Outwash Plains

This subsection is a real mix of end moraines, outwash plains, till plains, and drumlin fields. White and red pine dominated the majority of forest communities on end moraines and till plains. Jack pine barrens and jack pine woods were found on well-drained sites on outwash plains. Black spruce, tamarack, white cedar, and black ash were prominent tree species in poorly to very poorly drained soils. Lakes are very common on the end moraines and some of the outwash plains. Current land uses include tourism, forestry, and some agriculture.

Mille Lacs Uplands

Gently rolling till plains and drumlin fields are the dominant landforms in this ecoregion. The jewel of this region is Mille Lacs Lake, well known for walleye fishing. Brown and red till forms the parent material. In the southern portion, upland hardwoods consisting of red oak, sugar maple, basswood and aspen-birch were common before settlement. Presently, forestry, recreation and some agriculture are the most common land uses.

St. Louis Moraines

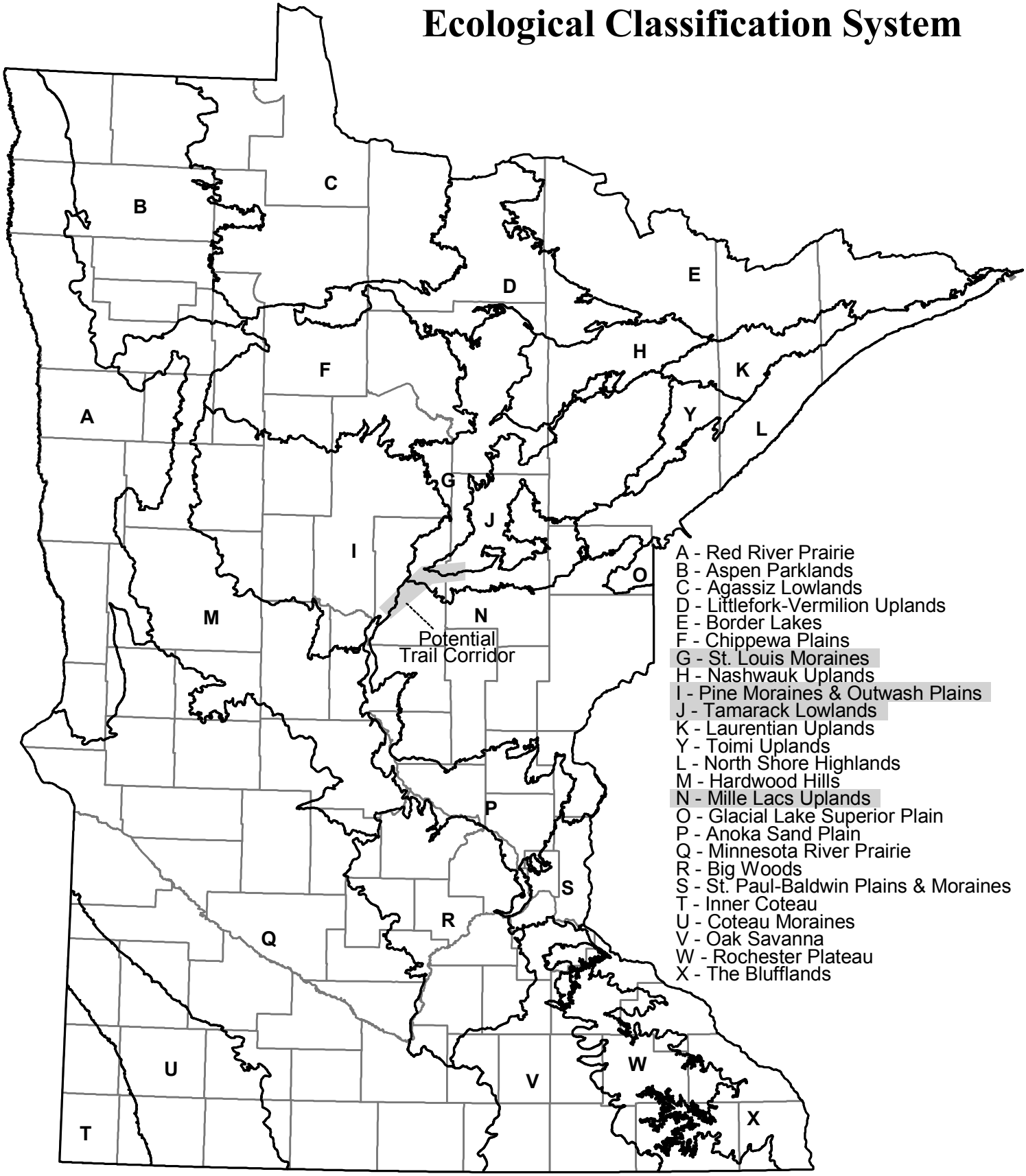
Rolling to steep slopes characterize much of this subsection. End moraines are the dominant landform. The underlying topography was formed by the Rainy Lobe. It was later overridden by the St. Louis sublobe of the last glaciation period. Northern hardwoods were common in the southern portion of the region, south of Grand Rapids. North of Grand Rapids, white pine, sugar

maple, basswood, and balsam fir were common tree species. Presently, forestry and tourism are the major land uses.

Tamarack Lowlands

Level to gently rolling topography is characteristic of this region. The largest landform is a lake plain. Around the edges of the old glacial lake is a till plain (Aurora Till Plain) formed in Superior lobe sediments. There is also a small piece of end moraine north of Sandy Lake that is related to the St. Louis moraines. Lowland hardwoods and conifers were the most common forest communities. Northern hardwoods and aspen-birch were common on the other portions of this region. Presently, much of the land is in public ownership. Forestry and tourism, along with some agriculture are the most common land uses.

Ecological Classification System



A - Red River Prairie
B - Aspen Parklands
C - Agassiz Lowlands
D - Littlefork-Vermilion Uplands
E - Border Lakes
F - Chippewa Plains
G - St. Louis Moraines
H - Nashwauk Uplands
I - Pine Moraines & Outwash Plains
J - Tamarack Lowlands
K - Laurentian Uplands
Y - Toimi Uplands
L - North Shore Highlands
M - Hardwood Hills
N - Mille Lacs Uplands
O - Glacial Lake Superior Plain
P - Anoka Sand Plain
Q - Minnesota River Prairie
R - Big Woods
S - St. Paul-Baldwin Plains & Moraines
T - Inner Coteau
U - Coteau Moraines
V - Oak Savanna
W - Rochester Plateau
X - The Blufflands

Climate

The climate in the region of the Cuyuna Lakes State Trail provides warm summer days with cool nights and cold, snowy winters. It is perfect for both summer and winter recreational pursuits, and the multiple alignment trails are required to support all these activities without conflict. Annual average normal precipitation in the area is 26.5 inches yearly, with about 6-8 inches falling in the months March-May, 10-12 inches in June-August, 5-6 inches in September-November, and 2-3 inches in December-February.

Summer use of the trail will extend from April through October, with the greatest activity during June through August. July is typically the warmest month, with average high temperatures around 87 degrees and average low temperatures around 61 degrees. On average, about 10 days per year may see temperatures in excess of 90 degrees. Along the trail, peak fall colors will occur in September and run through late October. Fall color - the golden aspen, birch, or tamarack against an evergreen backdrop, or the reds and browns of oaks and maples, or the russets of prairie grasses like big bluestem - will be very attractive for trail users.

Winter use of the trail will begin in November and continue through March. January is typically the coldest month, with average high temperatures around 15 degrees and average low temperatures around 0 degrees. Cold weather precipitation yields average yearly snowfall totals of about 44 inches, based on 30-year averages. The first inch of snow cover accumulates in early to mid-November, and snow depth of six inches or more has an average duration of 85 days. These may not be consecutive days of six-inch snow cover, since there are likely to be early fall or late spring snowstorms followed by snowmelt. Six inches of snow cover is the minimum for grooming snowmobile trails. Snow depth at any particular site along the trail will vary considerably with many factors like wind scour, drifting, degree of sun or shade, structures, topography, vegetation or compaction by vehicles. The mean ice-out date for lakes near the trail is around April 20-25.

Geology/ Soils

North central Minnesota is known for beautiful lakes and the rolling topography of the terminal glacial moraines that mark the furthest advance of glaciers in the area. The Patrician ice sheet affected most of the natural landforms along the proposed Cuyuna Lakes State Trail system.

Soils vary across the region to be served by the Cuyuna Lakes State Trail system. A sandy outwash plain dominates the landscape in the western portion of the regional trail near Brainerd and Baxter. East of the outwash, the red glacial till identifies the St. Croix moraine system found in the Cuyuna-Crosby-Ironton area, where the Mississippi River has eroded a distinct gorge through the glacial moraine. Further east, near Aitkin, the St. Croix moraine system is overlain by the Bemis-Altamont-Gary moraine system of the more recent Keewatin ice lobe. Here, the trail system will cross areas of level to gently rolling outwash that is imperfectly drained by the Mississippi River, which meanders through Glacial Lake Aitkin, creating broad wetlands and pastureland in the area.

In the area of the CCSRA and the mines, deep red clay is found in undisturbed areas, and the deep red color extends to the stockpiled overburden and stone. The color provides an inescapable connection to the mining history of the area and provides a distinguishing visual trademark to the trail corridor. Iron formations were suspected in the 1880's, but the first iron-bearing rocks were not discovered until 1903 because of the heavy overburden of glacial till.

Characteristics of the iron producing soils and rock in the Cuyuna Range area vary over relatively short distances. The formations have been folded by geologic processes, and stand nearly vertical in some areas, which accounts for the long, narrow and deep pits that are found in the CCSRA. These deep and narrow deposits were originally accessed by underground mining techniques because open pit techniques were too costly until larger equipment made open pit mining feasible.

Within the CCSRA are twenty-one lakes—including six natural lakes and fifteen former mines—ranging in depth from 100 to 525 feet. The lakes are filled with crystal clear water and offer the best conditions for scuba diving in the Midwest.

Other waters along or near the Cuyuna Lakes State Trail corridor include the Mississippi River, Rice Lake, Horseshoe Lake, Serpent Lake, Rabbit Lake and Cedar Lake. Connecting trails to Deerwood and Bay Lake areas will pass near at least seven additional lakes. Crow Wing County alone boasts 417 lakes.

The Cuyuna Lakes State Trail lies within the Upper Mississippi River Basin. The Upper Mississippi River Basin encompasses many smaller units called major watersheds. The trail lies within the Mississippi River-Brainerd major watershed, which drains over one million acres.

Trout Stocking

Though brook, brown and rainbow trout evolved to breed and live in streams, they grow bigger when they are put into lakes. So, the DNR stocks stream trout in about 160 lakes to give anglers a chance to catch trophy trout-brookies up to six pounds, rainbows up to 10 and browns as large as 16.

In selecting lakes for stream trout, the DNR looks for lakes that are cold, well-oxygenated and free of pollutants. Ideally, the basins have no inlets or outlets that would allow stocked trout to leave or other fish to enter the lake and eat the trout or compete with them for food. Because of the potential for competition between species, native fish are removed before trout are stocked. Consequently, only lakes with undesirable fish populations are chosen for "rehabilitation." Stocking continues regularly because rainbow and brown trout require current-washed gravel to spawn and can't reproduce in lakes. Brook trout are better adapted to lakes and can spawn where an upwelling of spring water in the lakebed washes the eggs, however, significant natural reproduction is rare.

Some large lakes are managed for both stream trout and native lake trout. Other lakes are "two-story" fisheries-the shallows occupied by warm water game fish (such as walleye, bass and sunfish), and the depths used by stream trout.

The DNR has been stocking trout in several of the mine pits within the CCSRA and in waters along the proposed trail corridor. (See the Special Waters Table below.) Stocking of trout in these waters provides a unique recreational opportunity along the trail corridor.

Trail routing needs to consider the value of passing adjacent to public access points. Routing must also consider minimizing the cost of bridges, particularly in the segment between Brainerd and Riverton. Trail routing also needs to consider construction effects on “Special Waters” and “Impaired Waters” designated by the Minnesota Pollution Control Agency. Construction near these designated waters must use best management practices and enhanced runoff controls, as well as meeting the new permit requirements under the “General Stormwater Permit for Construction Activity.” The program is intended to reduce the amount of runoff and erosion

entering surface and ground water during construction. The following table lists the lakes and rivers, and their special designation, in the vicinity of the trail corridor.

Special Waters Table

County	Waterbody	Designation
Crow Wing	Mallen Mine Pit	Trout Lake
Crow Wing	Manuel Mine Pit	Trout Lake
Crow Wing	Huntington Feigh Mine Pit	Trout Lake
Crow Wing	Pennington Mine Pit	Trout Lake
Crow Wing	Portsmouth Mine Pit	Trout Lake
Crow Wing	Sagamore Mine Pit	Trout Lake
Crow Wing	Snoshoe Mine Pit	Trout Lake
Crow Wing	Yawkey Mine Pit	Trout Lake
Crow Wing	Blackhoof Creek	Trout Stream and Tributaries
Crow Wing	Sand Creek	Trout Stream and Tributaries
Crow Wing	Whitley's Creek	Trout Stream and Tributaries
Crow Wing	Rice Lake	Impaired Lake
Crow Wing	Black Hoof Lake	Impaired Lake
Crow Wing and Aitkin	Mississippi River	Restricted Discharges
Aitkin	Blue Lake	Lake Trout Lake

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. Construction of the trail will meet the permit requirements for the new "General Stormwater Permit for Construction Activity."

Recommendation 2: Strive to limit water crossings.

Vegetation

Presettlement

Presettlement vegetation in the vicinity of the trail, based on Marschner's *Original Vegetation of Minnesota* map, consisted of the following types: Wet prairie, brush prairie, aspen-birch (trending to conifers), big woods-hardwoods, mixed white pine and red pine, jack pine barrens and openings, conifer bogs and swamps, and river bottom forest. See map on page 50.

The conifer forest in this area was largely harvested in the early 20th century or removed as part of the mining excavation. The natural forest in this area varied from Jackpine forest in the west (where the outwash is well drained), to mixed hardwood and conifer in the Crosby-Ironton area, to northern hardwood forests with occasional pine near Aitkin.

Present Day

Vegetation along the trail corridor is largely deciduous forest, with interspersed areas of pines. The understory produces a wide variety of species including spring ephemerals. An inventory and evaluation of rare or endangered vegetation that may be found in the vicinity of proposed trail alignments will be made during planning for design of specific segments. The Natural Heritage Information database was used to obtain species that are rare or endangered and are reported to be within the vicinity of the proposed trail corridor. Appendix 1 contains the data.

Recommendation 1: 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.

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

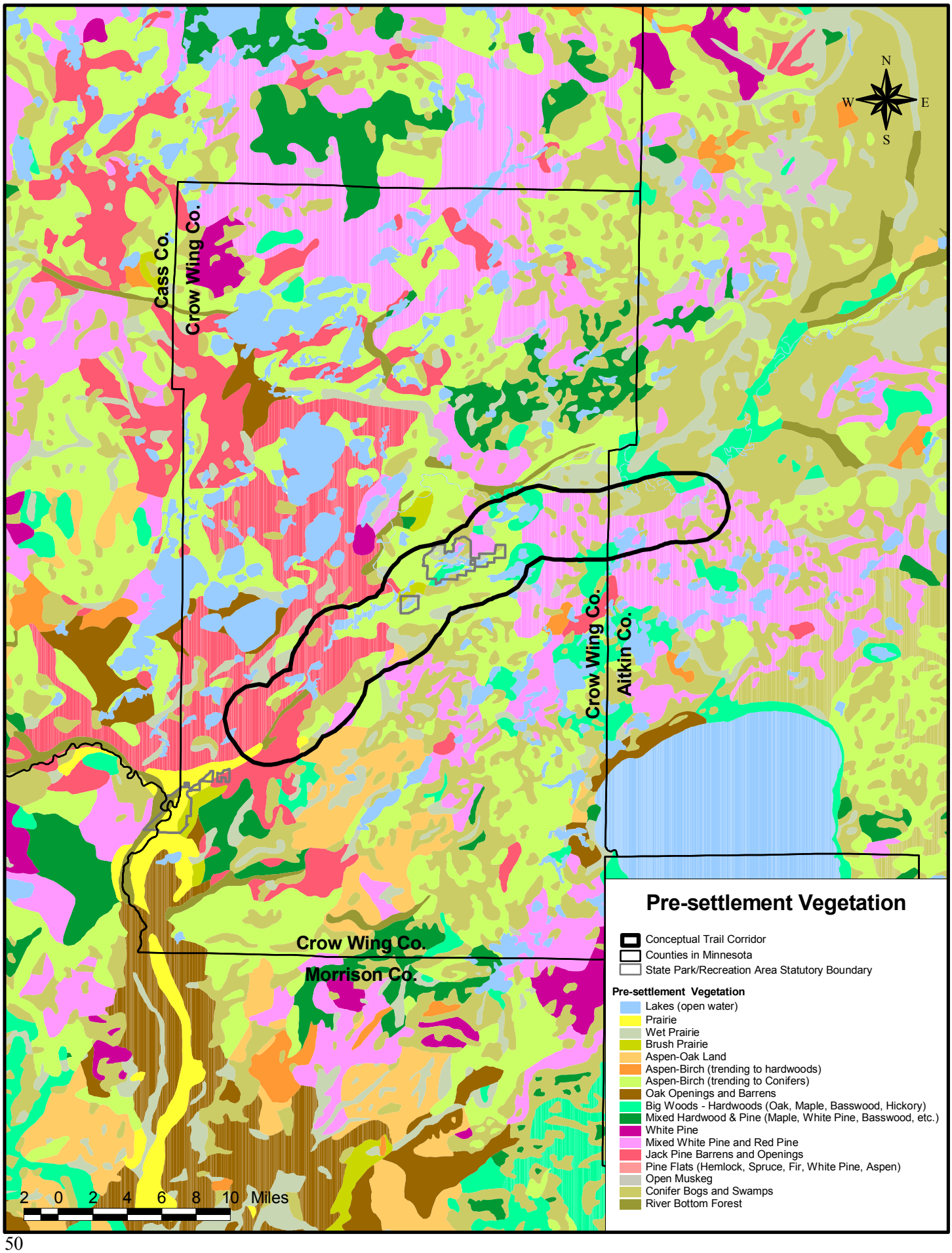
Recommendation 2: The Trails and Waterways Natural Communities Coordinator will be responsible for conducting an inventory of existing vegetation. A vegetation management plan containing goals, objectives, and actions should be developed and implemented.

Recommendation 3: Native plant species, from locally collected seed source, consistent with the native plant communities of the area should be used to revegetate areas disturbed by erosion, overuse and construction. Native plants should also be used in windbreak plantings and in the landscaping of parking areas and waysides. Give the plantings ample time to respond, grow and achieve the desired outcome.

Recommendation 4: Plant native species to screen unsightly areas, deter encroachment by adjoining landowners, deter trespassing by trail users as well as improve the quality of the trail corridor.

Recommendation 5: Restore, or if necessary, establish native woodlands 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 enhanced user experience.

Recommendation 6: Efforts will be made to avoid impacting wetlands, however, a wetland mitigation plan will be prepared to address and identify impacted wetlands.


N
W
E
S
Cass Co.
Crow Wing Co.
Crow Wing Co.
Aitkin Co.
Crow Wing Co.
Morrison Co.
2 0 2 4 6 8 10 Miles
Pre-settlement Vegetation
Conceptual Trail Corridor
Counties in Minnesota
State Park/Recreation Area Statutory Boundary
Pre-settlement Vegetation
Lakes (open water)
Prairie
Wet Prairie
Brush Prairie
Aspen-Oak Land
Aspen-Birch (trending to hardwoods)
Aspen-Birch (trending to Conifers)
Oak Openings and Barrens
Big Woods - Hardwoods (Oak, Maple, Basswood, Hickory)
Mixed Hardwood & Pine (Maple, White Pine, Basswood, etc.)
White Pine
Mixed White Pine and Red Pine
Jack Pine Barrens and Openings
Pine Flats (Hemlock, Spruce, Fir, White Pine, Aspen)
Open Muskeg
Conifer Bogs and Swamps
River Bottom Forest

Wildlife

The trail corridor is home to an abundance of wildlife. Visitors may have the opportunity to see white-tailed deer, cottontail rabbit, snowshoe hare, raccoon, red fox, gray fox, coyote, mink, muskrat, squirrels, otters and beaver. Occasionally, black bears may be observed.

American bald eagles and osprey frequent the area, and some species of waterfowl also take advantage of the abundant aquatic habitat found in the marshes and lakes of the trail corridor. The common loon, the Minnesota state bird, is a nesting species in the area and has been observed in the clear waters of the CCSRA.

The DNR manages the CCSRA and has stocked the pit lakes with several species of trout. These fish, together with the northern pike, offer excellent sport fishing for visitors. (See trout stocking information on page 46.)

An inventory and evaluation of rare or endangered species that may be found in the vicinity of proposed trail alignments will be made during planning for design of specific segments. The Natural Heritage Information database was used to obtain species that are rare or endangered and are reported to be within the vicinity of the proposed trail corridor. Appendix 2 contains the data.

Recommendation 1: Implementing the recommendations outlined in the vegetation management section will have a positive impact on wildlife, as habitat will be restored and/or created.

Recommendation 2: Work with citizens and sporting groups for habitat improvement within the trail right-of-way and encourage adjacent cooperative efforts that support broader habitat enhancement.

Recommendation 3: Trail construction at water crossings should be timed so that it does not interfere with spawning or migration of fish species. Silt plumes that may result can negatively affect fish habitat or native mussel species.

Recommendation 4: Trails & Waterways should work with the Division of Fisheries Shoreland Habitat Program to incorporate shoreland restoration efforts along the trail. The trail provides a great opportunity for public education and awareness of the use of native plants to restore and protect shorelines.

Scenic Resources

In *State Trail Use* (DNR, 2000), the primary reasons for any particular trail to be found appealing by users included a natural setting that facilitated outdoor enjoyment, and safety related to off-road alignments and separating of motorized uses. The Cuyuna Lakes State Trail is located in such an area. The topography of the region is gently rolling to flat, with waters and wetlands generously interspersed with the woodlands that cover the landscape. Trail users will discover the vibrant color of the iron ore tailings and stockpiled rock, as the extracted overburden dramatically changes the landscape with strong vertical elements. Cyclists will enjoy what has been characterized as a "mini-boundary waters" experience. Further east, the land becomes flatter, with gently rolling fields of hay and generously scattered wetlands.

Lying north of TH 210 and bordered on the north by the Crow Wing State Forest, the Cuyuna Country State Recreation Area extends from Riverton on the west to County Road 31 on the east. It includes the northern portions of the cities of Ironton and Crosby. The area is about 10 miles northeast of Brainerd's Lum Park and city trail system, and about 12 miles west of Aitkin. The naturally rolling to flat glacial geology of the Cuyuna Range has been tremendously altered since mining began in 1903. The deep extraction and subsequent piling of waste rock and ore left the mine areas with extreme topography changes. In some areas overburden was stockpiled over 200 feet high, and pits were as much as 525 feet deep. Time and nature have reclaimed the mined areas, filling the pits with water and allowing forests to cover the overburden piles, leaving spectacular vistas and the feeling of being in a natural, unaltered environment.

Recreation Resources

Cuyuna Country State Recreation Area (CCSRA)

The CCSRA, situated in east central Crow Wing County, will center the Cuyuna Lakes State Trail. The CCSRA can be used as a backdrop for environmental and historical education programs. For example, the principles of mineland reclamation, reforestation and limnology can be taught along the trails and within the lakes of the CCSRA.

Nearly 60 miles of paths, trails, roads and railroad grades exist within the CCSRA and these are planned to support mountain biking, hiking, horseback riding, other compatible summer uses, cross-country skiing and snowmobiling.

Within the CCSRA are twenty-one lakes, including fifteen former mines and six natural lakes, ranging in depth from 100 to 525 feet. The lakes are filled with crystal clear water and industrial archaeological remnants and offer the best conditions for scuba diving in the Midwest.

County and State Forests

The future connecting local trail system between Deerwood and Bay Lake will pass through or near, the Lansin R. Hamilton Memorial Forest, a Crow Wing County forest. East of Bay Lake is the Wealthwood State Forest. The future connecting local trail between Cuyuna and Trommald will pass adjacent to the south edge of the Crow Wing State Forest.

Lodging, Resorts and Campgrounds

Along the route of the Cuyuna Lakes State Trail system, existing public campgrounds can be found in the CCSRA and at parks in Brainerd, Crosby and Aitkin. Private campgrounds provide additional capacity. Large numbers of hotel rooms are available in the Brainerd/Baxter area. Hotel and resort accommodations also exist in Crosby, Deerwood and Aitkin. Additional lodging resources are available at the many resorts throughout the area.

Hallett Community Center

The Hallett Community Center, near the Croft Mine Historical Park in Crosby, offers restroom facilities, a snack bar, swimming and seasonal ice-skating. It is also the host to many community activities and events.

Central Minnesota Lakes Area Attractions

The central Minnesota lakes area entertains visitors throughout the year. In the summer, the area features boating, fishing, water sports, hunting and trail activities along the Paul Bunyan State Trail. Winter activities include snowshoeing, snowmobiling and skiing. The CCSRA and Cuyuna Lakes State Trail system will enhance this tourism draw and the comprehensive trail system should connect tourism assets.

Community Festivals and Events

Community events and festivals offer visitors many opportunities for fun and relaxation. Events include Aitkin's *Riverboat Heritage Days*, *Festival of Adventures*, *Fish House Parade,* and the Aitkin County Fair; Deerwood's *Summerfest;* Crosby's *Heritage Days;* the Crow Wing County

Fair in Brainerd and many more such activities along the north-south Paul Bunyan State Trail, soon to be connected to the Cuyuna Lakes State Trail.

Other Trail Connections

The Cuyuna Lakes State Trail will be a vital link in the recreation system of the central Minnesota lakes region. It will connect to the Paul Bunyan State Trail, which is a 100-mile long trail between Baxter/Brainerd and Bemidji. Future expansion of the Paul Bunyan State Trail is planned connecting to Crow Wing State Park. This connection will link Crow Wing State Park and the CCSRA, allowing travel between the two units. The Cuyuna Lakes State Trail is also planned to be a link to other state and regional trails, such as the Munger State Trail to the east, the Mesabi Regional Trail to the north, and the Glacial Lake Aitkin Trail system in Aitkin County. The Cuyuna Lakes State Trail will also be part of the national Mississippi River Trail – a 10-state cycling route that will allow cyclists to tour from the headwaters of the Mississippi to the Gulf of Mexico. Future plans include making connections with other local trails.

Historical Resources

Archeological evidence shows that human habitation in the area spans over 10,000 years, from the Paleo-Indians of about 8,000 B.C. to the modern American Indians of today. European settlement, fur trading, and exploration began in the seventeenth century. By the mid-1800's fur trading and exploration had given way to exploitation of the vast stands of pine in the area. With logging, came the railroads.

The Cuyuna area was a border area between the Dakota (Sioux) and the Ojibwe (Chippewa) Indians. The Cuyuna area also served as a long portage route from Mille Lacs Lake to the upper Mississippi River. There were many trading posts and missions in the general area. The 1870 General Land Office survey notes indicated the presence of an American Indian trail between Little Rabbit, Portage, June, and Little Mahnomen Lakes. The treaty of 1837 with the Mississippi Band of Ojibwe opened the area to European settlement. The treaty of 1855 established the Mille Lacs reservation on the southwest shore of Mille Lacs Lake.

In the early 1860's the Northern Pacific Railroad Company was chartered to build a railroad from Carlton, Minnesota to Puget Sound. A section house erected along the north shore of Reno Lake, a hundred miles west of Duluth, grew into a little community called Withington. The similarity of its name to that of Worthington in the southern part of the state later prompted it to change its name to Deerwood. It wasn't until 1871 that the Northern Pacific Railway came through town.

Several of Deerwood's earliest settlers, including a surveyor named Cuyler Adams, were struck by an unnatural deviation of the compass needle in certain areas and suspected the presence of iron ore, and the search was on for a viable body of ore. The first active iron mine on what was to become the Cuyuna Range, named after the combined names of ***Cuy***ler Adams and his dog ***Una***, was the Kennedy mine, located on the south shore of Rabbit Lake. In those days of difficult travel, a small village would naturally spring up near an active mine, and thus the village of Cuyuna was established as the second town in the area. Cuyuna was incorporated in July of 1910.

As more mines were opened, small towns sprang up to house and supply the needs of the miners. The largest of these, Crosby and Ironton, are the active hub of the area today. During the active mining period, this area had a multitude of railroad lines and many of these former grades will be used for the proposed trail system. Originally, the nearest rail link to the Cuyuna Range was about six miles away at Deerwood, where the Northern Pacific had a track. The Soo Line was built from Deerwood to the towns of Cuyuna, Crosby and Ironton in 1910. The Northern Pacific then built rail lines into the Cuyuna Range in 1912. Crosby was incorporated as a village in July of 1910, while Ironton was incorporated in June of 1911.

Small portions of Riverton and Trommald remain as bedroom communities, but the communities of Iron Hub, Manganese, Klondike, Oreland, and Wolford (which supported the Milford mine location), have disappeared. Trommald lies at the northern edge of the recreation area and the former mines. Today, it has a small residential population. It would be connected through the

recreation area, and eventually along a loop to Cuyuna that would connect to the former Milford Mine site, with a future memorial to the 41 miners who died on February 5, 1924.

Riverton lies at the western edge of the recreation area and the former mines. It began as a mining location and today has a small residential population. It was incorporated in January of 1912.

Total iron ore production from the Cuyuna Range eventually exceeded 100,000,000 tons. Today, the mines are closed but the pits between the mountainous tree-covered piles of overburden that was removed from them have filled with pristine clear water and are a Mecca for scuba divers, anglers and nature lovers who visit them annually. They remain as a living memory of the mining era. The industrial archaeology scattered throughout the Cuyuna Country State Recreation Area from Riverton to Cuyuna tells of the many cultures brought together to mine the land and offers an insight to the mining history of the area. Signage and other techniques will be used to build an image of the miners and their sacrifices in these communities.

Tourism, now the major income producing industry in the area, has always been important throughout the history of the Cuyuna Range. The beauty of the many lakes and forests in the area struck the entrepreneurs who sought to develop the rich resources opened by the railroad. Deerwood, with its first hotel, became a favorite stopover. Tales of the fabulous fishing and hunting to be found in the surrounding area soon began to lure men to take the train, usually from Duluth, and rent a room at the Shannon Inn. From there they could engage a team to take them to a favorite lake where they could rent a boat for the day's hunting or fishing. One of those locations was Bay Lake, and the lake became a destination for city dwellers that wanted to visit northern Minnesota and the lumber country. Access was only by train and wagon trail until about 1900, when more improved roads reached the area. Today, the community features resorts and seasonal residents, many of whom seek trail access to the nearby Crow Wing County Lansin R. Hamilton Memorial Forest and other points of interest.

At the west end of the Cuyuna Lakes State Trail system lie Brainerd and Baxter. Brainerd was founded in 1870, when the Northern Pacific Railroad's survey determined that the Mississippi River crossing should be located there. Today, Brainerd is the region's largest city and trade center. Trail resources in the community include several parks, many restaurants, a YMCA, many lodging units and service businesses. The community also has an arboretum adjacent to the proposed trail. A comprehensive trail system is planned, a portion of which will connect the Cuyuna Lakes State Trail System to the Paul Bunyan State Trail. The origins of Brainerd can be featured near the west end of the Cuyuna Lakes State Trail where the redeveloping rail yards exist and the Mississippi River has been dammed to support a paper mill.

Baxter borders Brainerd on the west, and is a trailhead for the Paul Bunyan State Trail. From Baxter, trail users will be able to go south to Crow Wing State Park once the expansion of the Paul Bunyan State Trail is finished, north to the lakes area and Bemidji, or east to the Cuyuna Country State Recreation Area.

At the eastern end of the trail is Aitkin, with a rich heritage of the Mississippi River lumber days as well as a stop on the railroad. Today, Aitkin is the county seat of Aitkin County and is a focal point for tourism along trunk highways 210 and 169. It was incorporated in August of 1889.

Croft Mine Historical Park

The Merrimac Mining Company first operated the Croft mine located in northeast Crosby. The initial shaft went down through 110 feet of glacial drift to reach the ore body and ultimately reached a total depth of 630 feet. Lateral shafts or drifts were then extended into the ore body from which the ore was blasted and hauled to the surface. Ore from the Croft mine was exceptionally rich, being 55% iron and of Bessemer quality. "Bessemer quality" refers to a high quality ore needed in the Bessemer process of making steel. The Youngstown Mining Company operated the mine from 1928 to 1931, and the Hanna Mining Company operated the mine from 1931 until the last ore from this property was shipped in 1934. The total production of the Croft mine was 1,770,000 tons.

The original smokestack and "dry house," where the miners cleaned up after a day underground, remain on the site. There is also a realistic simulation of the "cage," in which the miners rode down to work, and a life-like mock-up of a drift with mannequins performing the usual jobs. The guided tour includes Cuyler Adams' office and ends in the "dry" where many original artifacts are displayed.

Milford Mine Site

The Milford mine, originally named the Ida Mae, was located approximately 2 miles north of Crosby about 1000 feet from the northwest side of Foley Lake. The property was first leased and exploratory drilling started in August of 1912. It was not until December of 1917 however, that the main shaft was sunk and development started. By February 5, 1924 the shaft was down 200 feet, including 120 feet of wet, sandy overburden. Operating drifts extended out toward Foley Lake. At 3:25 p.m. on that fateful day mud and water broke into the lower level of the mine and within 20 minutes the mine was completely flooded. Seven miners managed to climb a ladder to safety. Forty-one perished in the disaster, worst in the history of the lake states mining industry.

Today, evidence exists of the structures and hardships associated with mining. Local trails are planned to connect to the Milford Mine site, where interpretive displays will memorialize the miners and the mine.

National Register Sites

The Ironton Sintering Plant Complex, located approximately one-half mile north of Ironton, is on the National Register of Historic Places. It is on the west bank of Portsmouth Mine lake. This site is significant due to the fact that it was the second major beneficiation plant built in the United States. Beneficiation is a term used to describe the collective processes of, but not limited to, sintering, crushing and washing of non-selectively mined iron ore. The mined iron ore from the Cuyuna Range was of lower grade quality and had to be processed and improved to meet user specifications. Sintering, the technique of concentrating the iron ore into a mass by heating without melting was unique to the Cuyuna Range. According to the National Register of Historic Places Nomination Form, the Ironton sintering plant reflects the capacity of the iron

mining industry for great technical innovation and was a major shift in the economics of the industry that occurred after 1900.

In April 2003, the Cuyuna Range (the proposed boundary still very preliminary at this point) was considered eligible for listing on the National Register of Historic Places as a Historic Mining Landscape District by the historical archaeologist at the Minnesota Department of Transportation. See the preliminary district boundary map on page 71, Appendix 5. The Minnesota State Historic Preservation Office agreed with the recommendation based on the important role this area played during World War I. The district encompasses the open-pit mines, the railroad lines and spurs that serviced the mines, the rail beds connecting the spurs to the mainline to the south and east of Ironton, and the mine tailings piles within the vicinity of the towns of Cuyuna, Trommald, Riverton, Ironton and Crosby. The boundary does not include the actual cities.

It is not expected that the trail will adversely affect the historic district because the area is currently used for recreational purposes and use of the existing railroad beds is acceptable. Minor grading will be necessary on certain segments of the railroad bed in order to meet current safety standards, fill openings left by the previous and unrelated removal of culverts, and to comply with the Americans with Disabilities Act. It is recommended that signage or other markers indicate, where necessary, the transition of the trail being on and off the historic railroad grade.

Recommendation 1: The Division of Trails and Waterways and Parks and Recreation will consult with the State Historic Preservation Office on trail and facility development to avoid adverse impacts to the proposed historic district.

Recommendation 2: The Division of Lands and Minerals requests representation in any discussions that could alter the potential for mining.

Socioeconomic Resources

Demographics

The central Minnesota lakes area, which will be served by the Cuyuna Lakes State Trail, is experiencing strong growth. Retiring metro-area residents are finding the lifestyle and recreational amenities of the area draw them to relocate here. Projections by the State Demographer indicate that such growth will continue into the future.

Population of Area

Location	1990	2000	Percent Change	Projected 2020
Crow Wing County	44,249	55,099	24.5	79,420
Aitkin County	12,425	15,301	23.1	22,160
Brainerd/Baxter	16,048	18,733	16.7	--
Cuyuna area communities, townships	6,466	8,104	25.3	--
Aitkin	1,698	1,984	16.8	--

Seasonal Residents

There is a large seasonal population that enjoys the central Minnesota lakes area. In 2000, approximately 53% of the housing units in Aitkin County were vacant while 33.5% of the housing units in Crow Wing County were vacant according to the Northwest Area Foundation Indicator website. Since the counties are experiencing population expansion, most of these are estimated to be seasonal housing units. A 1986 survey (Shoreland Update, Report Number 8, *Shoreland Residents—A Questionnaire Survey*, DNR, Division of Waters), found that visits to seasonal homes average about 30 per year. Assuming a median family size of 3.2 and trip length of two days, this translates to about 3.5 million person-days spent in the area by seasonal residents. Not all will use the trails, but if even 1% use the trail system, 35,000 uses will be generated. East of Brainerd, no comprehensive trail system is available to meet this demand, except for grant-in-aid snowmobile trails.

Regional Economic Activity

The region's economy depends on retail trade, tourism, and related services for continued growth. Mining no longer provides jobs in the Cuyuna communities. While tourism has always been important to the development of northern Minnesota, it is taking on a new form. Resorts with housekeeping cabins are giving way to privately owned cabins intended for seasonal recreation and retirement. The modern tourist may be a more-or-less permanent resident, perhaps taking a winter vacation, and often seeking part-time employment. The extended families of these persons use the recreational facilities of the area on their frequent visits.

Distribution of occupation and industries, as obtained from the 2000 US Census Bureau data, is shown in the following tables.

Aitkin County

	Total	%
Employed civilian population 16 years and over	**6,242**	**100.0**
OCCUPATION		
Management, professional, and related occupations	1,629	26.1
Service occupations	1,199	19.2
Sales and office occupations	1,451	23.2
Farming, fishing, and forestry occupations	104	1.7
Construction, extraction, and maintenance occupations	771	12.4
Production, transportation, and material moving occupations	1,088	17.4
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	326	5.2
Construction	616	9.9
Manufacturing	847	13.6
Wholesale trade	127	2.0
Retail trade	674	10.8
Transportation and warehousing, and utilities	300	4.8
Information	100	1.6
Finance, insurance, real estate, and rental and leasing	287	4.6
Professional, scientific, management, administrative, and waste management services	214	3.4
Educational, health and social services	1,244	19.9
Arts, entertainment, recreation, accommodation and food services	861	13.8
Other services (except public administration)	340	5.4
Public administration	306	4.9

Crow Wing County

	Total	%
Employed civilian population 16 years and over	**25,712**	**100.0**
OCCUPATION		
Management, professional, and related occupations	7,560	29.4
Service occupations	4,525	17.6
Sales and office occupations	6,753	26.3
Farming, fishing, and forestry occupations	111	0.4
Construction, extraction, and maintenance occupations	2,777	10.8
Production, transportation, and material moving occupations	3,986	15.5
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	290	1.1
Construction	2,133	8.3
Manufacturing	3,406	13.2
Wholesale trade	711	2.8
Retail trade	3,677	14.3
Transportation and warehousing, and utilities	941	3.7
Information	579	2.3
Finance, insurance, real estate, and rental and leasing	1,390	5.4
Professional, scientific, management, administrative, and waste management services	1,342	5.2
Educational, health and social services	5,819	22.6
Arts, entertainment, recreation, accommodation and food services	2,965	11.5
Other services (except public administration)	1,351	5.3
Public administration	1,108	4.3

Data indicated that in 1997 approximately 177,100 tourism-related jobs, and about 106,000 jobs created indirectly by tourism, existed in the State of Minnesota. This generated about $4 billion in salaries and $1.2 billion in tax receipts. This was up over 8% from 1996. For comparison, the

impact of tourism in Crow Wing County alone in 1990 (as estimated by the Minnesota Office of Tourism in *Estimates of Economic Impact on Domestic Travel in Minnesota in 1990*, and reported in the Paul Bunyan State Trail Master Plan) showed 3,800 tourism related jobs paying nearly 71 million in salaries on gross receipts of nearly $200 million.

Financial Impacts of Trail Development

In *Benefits of Trails* (July 1996, prepared by the DNR, Trails and Waterways Unit, as part of the DNR's Cooperative Trail Development Series) it is stated that communities that support trails and respond to the needs of trail users have seen stimulation in their local economies. In *State Trail Use* (July 2000, prepared by the DNR, Trails and Waterways Unit), the DNR reports on surveys taken of State Trails in 1996, 1997, and 1998. These publications present data and identify references that provide several facts about the economic impact of trails:

Trail users spend money

Tourists attracted to the trails use local facilities for eating, shopping, and lodging. This input to the local economy tends to increase jobs and local revenues. For example:

- The DNR estimates that over $5 million was spent by trail users on state trails in Minnesota between Memorial Day and Labor Day. The July 2000 DNR report notes that 83% of spending by trail users is by tourists that directly impacts local economies, and that the bulk of this (80-85%) is spent on food, lodging, and transportation. Surveys showed that the amount spent per person per day was $25 (Heartland State Trail) to $33 (Paul Bunyan State Trail).

- Completion of the Root River State Trail increased lodging opportunities in Lanesboro, increased food and drinking receipts by 84%, and lodging receipts by 800% between 1986 and 1992.

- A study by the DNR found that 69% of landowners living along the Heartland and Douglas State Trails in Minnesota feel the trails have benefited local economies.

Trails increase property values

- A Minnesota study of two trails found that 87% of the homeowners along the trail felt the trail either had no effect, or increased their property value.

- A National Park Service funded study of three trails found that 87% to 97% of those surveyed felt a trail either increased the value of their home, or had no effect on its value. The study found that 89% of real estate professionals concurred.

Trails provide other savings

- Public monetary savings from lower air pollution, congestion, and oil imports have been calculated to be between 5 cents and 22 cents for every bicycle mile traveled on trails.

- An undetermined amount of additional savings result from the environmental and health benefits of outdoor recreation.

The Cuyuna Lakes State Trail alone is expected to generate similar usage to the Heartland State Trail, which has approximately the same length. Before a direct connection to the Paul Bunyan State Trail is complete, it might be expected to generate about one-third the total usage, based on proportional length. However, the attraction of the CCSRA as a stand-alone destination favorable to trail users is expected to create a greater than proportional demand for the trail system. Data in the Paul Bunyan State Trail Master Plan suggests that 1,600 summer uses per mile would not be an unreasonable projection for the average trail. In the interim, when about 7 miles of the Cuyuna Lakes State Trail system are complete within the CCSRA, we project about 12,000 summer uses. At even $20 per use, this equates to $240,000 input to the local economy, which is believed to be a conservative estimate.

Appendix 1: Special Concern, Threatened or Endangered Plant Species

Latin Name	Common Name	MN Legal Status
Botrychium campestre	Prairie Moonwort	Special Concern
Botrychium pallidum	Pale Moonwort	Endangered
Najas gracillima	Slender Naiad	Special Concern
Ranunculus gmelini	Small Yellow Water Crowfoot	Non*

*Non = Animal or plant with no legal status, but which may be rare and about which the Natural Heritage & Nongame Research Program is gathering data for possible future listing.

Appendix 2: Special Concern, Threatened or Endangered Animal Species

Latin Name	Common Name	MN Legal Status
Buteo lineatus	Red-Shouldered Hawk	Special Concern
Coturnicops noveboracensis	Yellow Rail	Special Concern
Emydoidea blandingii	Blanding's Turtle	Threatened
Etheostoma microperca	Least Darter	Special Concern
Haliaeetus leucocephalus	Bald Eagle	Special Concern
Ligumia recta	Black Sandshell Mussel	Special Concern
Marpissa grata	A species of Jumping Spider	Special Concern

Appendix 3

This appendix covers Minnesota laws and Trails and Waterways policies regarding issues of easements for public and private crossings, cattle passes, fencing, and trespass on public land.

Public Crossings
All public crossings (i.e., state, county, township, and so forth) which are in existence at the time the Department of Natural Resources (DNR) has acquired the abandoned railroad right-of-way should be investigated to determine under what authority such crossings exists.

If the public body is capable of producing a legal document (i.e., road order, easement, license, lease, crossing agreement, deed, or final certificate of condemnation) the State will honor all terms of such document. Documents of this nature, when they exist, are usually in the possession of the railroad. Therefore, prior to the real estate closing of the State's acquisition, a request to the railroad should be made for all documents pertaining to crossings.

Where the road authority is unable to supply the State with a legal document which evidences their authority to cross the right-of-way, it shall be presumed that either (1) such road had at one time been legally laid out, but the usual accompanying documentation is no longer in existence; or (2) such road finds its authority in statutory dedication, see Minnesota Statutes, Section 160.05, Subdivision 1. In either case, the State will recognize the crossing only to the extent of actual use, plus that portion reasonably necessary for maintenance and considerations of safety. In the event the road authority desires to upgrade the road through widening, any such widening shall be considered by the State as an enlargement of the original grant or dedication which will require a conveyance from the State pursuant to Minnesota Statutes, Section 84.63.

All state, county, or township road rights-of-way established after the DNR has acquired the railroad right-of-way must be supported by the State's conveyance of the appropriate easement pursuant to Minnesota Statutes, Section 84.63. Such conveyance shall be made at an appraised value.

All other roads that the state, county, or township declines to certify as a public road will be deemed a private road and subject to the rules governing a private road if it is being used by a private party, subject to the rights of the private party to prove otherwise.

Private Crossings
All private crossings of the railroad right-of-way, which exist at the time the DNR acquired the abandoned railroad right-of-way, will be recognized according to and to the extent of the terms found in the written agreements with the railroad. At such time as the written agreements with the railroad expire, a new agreement with the State, usually in the form of an easement, may be entered into. Further, if work is contemplated beyond the limits of the original written agreement, a new agreement with the State may be appropriate.

All private crossings of the railroad right-of-way which exist at the time the DNR acquired the abandoned railroad right-of-way, and for which no documentation exists, may be recognized to the extent of actual use where it can be demonstrated to the State that said roadway did, in fact,

exist previous to the State's acquisition. Such proof may take the form of affidavits, aerial or other photographs, written documentation, site inspection, and any other evidence which, in the sole opinion of the DNR, demonstrates the presence of a private crossing. The width of the right-of-way shall be determined by the State and subsequently documented in an easement, long-term lease (+10 years), or other agreement between the State and the private party. Such transactions require the party applying for the crossing to pay costs based on the market value of the crossing area.

All private crossings established after the State has acquired the railroad right-of-way must be supported by an easement, lease, or other written agreement from the State at an appraised value. The decision to convey such an easement, including its terms and conditions, will be at the sole discretion of the State. The requirements of Minnesota Statutes, Section 84.631, control this situation.

> **M.S. 84.631 ROAD EASEMENTS ACROSS STATE LANDS**
> Except as provided in Section 85.015, subdivision 1b, the commissioner, on behalf of the state, may convey a road easement across state land under the commissioner's jurisdiction other than school trust land, to a private person requesting an easement for access to property owned by the person only if the following requirements are met: (1) there are no reasonable alternatives to obtain access to the property; and (2) the exercise of the easement will not cause significant adverse environmental or natural resource management impacts. The commissioner shall:
> (1) require the applicant to pay the market value of the easement;
> (2) provide that the easement reverts to the state in the event of nonuse; and
> (3) impose other terms and conditions of use as necessary and appropriate under the circumstances.

Potential impact on the trail user is the paramount consideration in granting an easement for any new crossings. Trails and Waterways field personnel will work with adjacent landowners who request a new crossing, prior to submitting a request for an easement to the DNR Division of Lands and Minerals. There is a fee for easements that are granted.

Following are some of the general criteria, which will be considered in granting an easement or lease for a new crossing.

- If the private crossing goes from state property onto a public road, it is the private party's responsibility to get the entry permit to the public road.
- Crossings must be perpendicular to the trail.
- Traffic on private road crossings will be required to stop prior to crossing the trail.
- Crossings will not be granted where there is inadequate sight distance, due to hills or curves.
- New crossings should be kept to a minimum to the greatest extent possible. Using a frontage road parallel to the trail right-of-way to consolidate multiple new crossings is preferable.
- Crossings should be located and constructed with the least impact to the environment.

Parallel Roads
The policy of the State relative to roads running parallel to trails shall be same as the state's crossings policy as discussed above.

Existing Cattle Passes
Persons owning lands bisected by a state trail who have an existing cattle pass at the time of the purchase by the state from a railroad may continue to use the cattle pass as long as it is used in such a manner as not to obstruct or impair the use of the trail. The cattle pass shall be on a lease basis (unless a recorded agreement with the railroad existed) and shall be maintained and kept in repair by the adjacent owner. If a recorded agreement existed, the State will honor the terms of the agreement.

It is the responsibility of the private party to maintain the cattle pass, at their expense, in a manner that protects and preserves the public's ability to use the trail.

New Cattle Passes
Persons owning grazing lands bisected by a state trail may construct, at their own expense, cattle passes under, over, or across the trail in such a manner as not to obstruct or impair the use of the trail. The cattle pass shall be on a lease basis and shall be maintained and kept in repair by the landowner.

In the case where a major surfacing or rehabilitation project is taking place in the area of the proposed cattle pass and said cattle pass is determined to be of benefit to the state and shall not obstruct or impair the use of said trail, the state will construct the cattle pass in equal shares with the adjoining owner, but the cattle pass shall be maintained and kept in repair by the adjacent owner.

Utility Crossings
Utility crossings will be granted in compliance to Minnesota State Rules, Chapter 6135.

Fencing
To further discourage unauthorized use, the DNR may temporarily close trails or modify the use of segments that have persistent enforcement or use problems. Fences and natural barriers (rocks and vegetation) may also be installed to deter unauthorized use.

The DNR’s fencing policy is as follows:
The reasons for fencing include: first, the protection of adjacent landowners from trespassing and property damage by trail users; and, second, the enclosure of pastureland adjacent to the trail. The state and the landowner will equally share the costs for the construction and maintenance of a fence based upon a mutual agreement.

If an existing fence on a common property line is in such a poor state of repair that it requires replacing and if the property owner is unable to do so, the State will negotiate an agreement equitable to both parties for the construction and maintenance of a new fence.

Where an existing fence is improperly placed on state land, the State will relocate the fence on the appropriate boundary, the cost shared equally by the state and the property owner.

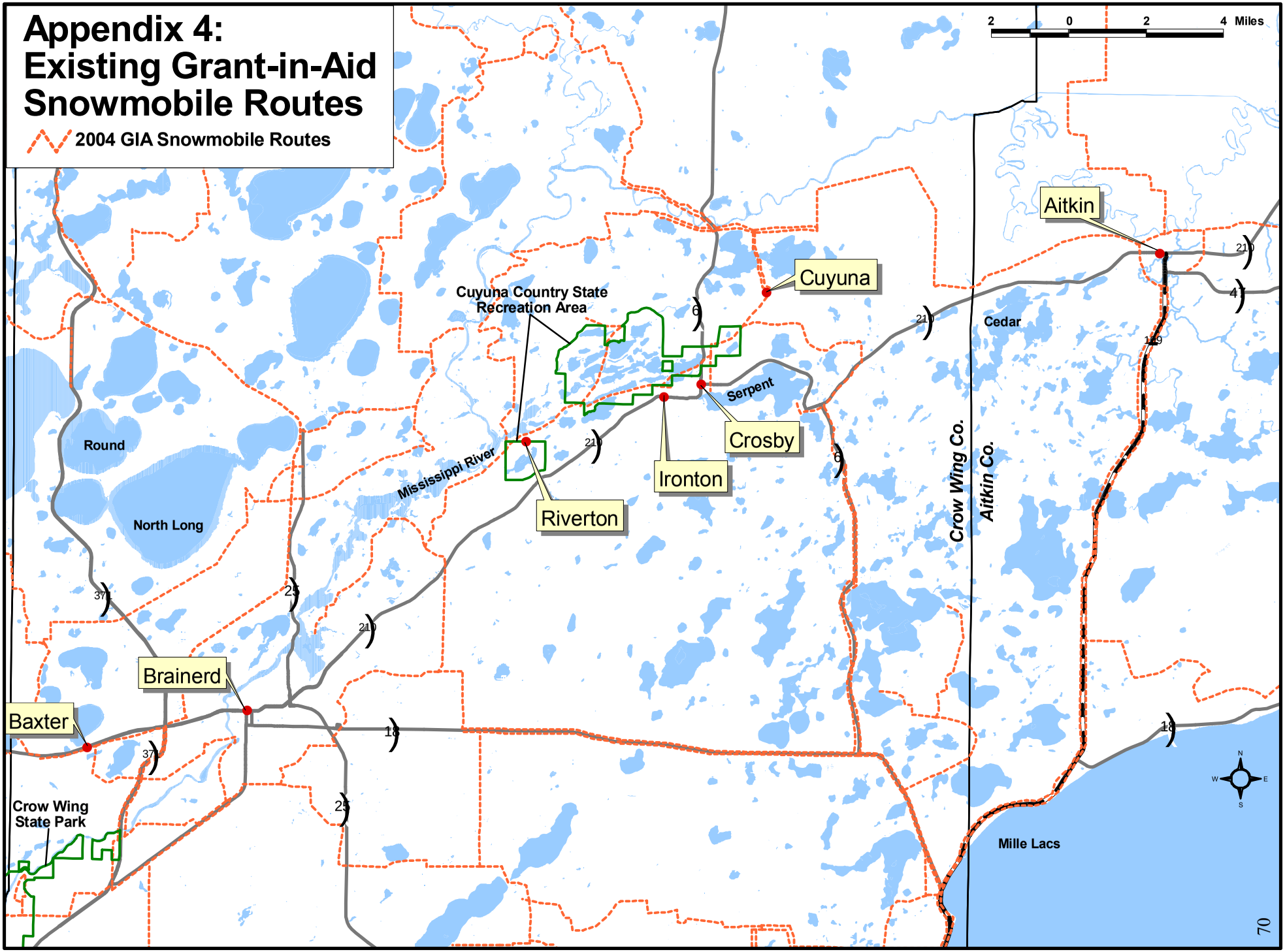
If fencing is not covered by a local ordinance, the minimum standards stated in Minnesota Statutes, 1990, Section 344.02, will apply.

Trespass/Encroachment onto the Trail Right-of-Way
Trespass (meaning illegally using public land, such as the trail right-of-way, for prohibited personal use or personal economic gain) is an issue at some sites along state trail rights-of-way. The trail right-of-way is not to be used by private individuals for agricultural purposes, commercial enterprises, storage, dumping or any other private use that detracts from trail use and enjoyment by the public. Structures such as deer stands are not permitted within the right-of-way. Minnesota Statute 92.70, which follows, outlines the civil and criminal penalties for such trespass on public land.

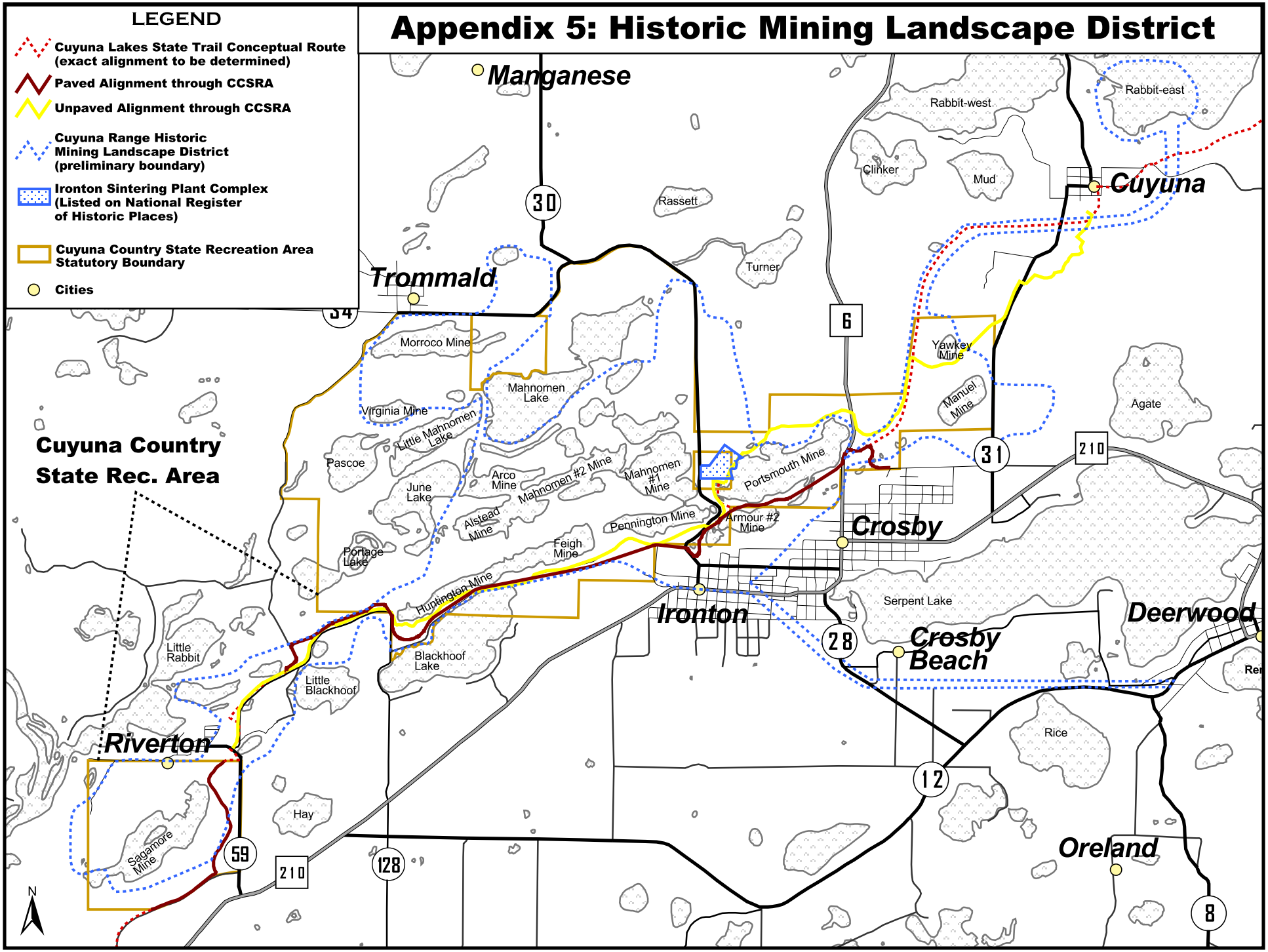
> **M.S. 92.70 LAND USE TRESPASS**
> Subdivision 1. **Public land definition.** "Public land" means publicly owned land or interests in land including land and interests in land that are owned by the state, counties, or road authorities, administered by the commissioner of natural resources, owned by the state as beds of navigable waters, acquired as conservation easements with benefits running to the state, a county, or the public under the conservation reserve program, water bank program, or other state or county programs.
>
> Subdivision 2. **Casual trespass.** (a) A person who uses public land for personal use or personal economic gain where the use is prohibited is guilty of trespass and a petty misdemeanor and shall be subject to a penalty not to exceed $50 per occurrence and is subject to a civil penalty for twice the amount of actual damages. (b) A person violating paragraph (a) may be issued a ticket by a sheriff, conservation officer, or personnel of the department designated by the commissioner. The ticket must identify the trespass, where the trespass occurred, and the official observing the trespass. A copy of the ticket must be sent to the public agency responsible for managing the land. (c) The civil penalty shall be paid to the public agency responsible for managing the public land. A civil penalty paid to the state is appropriated to the state agency responsible for managing the land to restore the damage and improve state land. (d) Within 60 days after a ticket is issued, the public agency responsible for managing the public land where the trespass occurred must make a determination of whether a civil penalty will be sought for the trespass and notify the person.
>
> Subdivision. 3. **Willful trespass.** (a) A person who willfully and knowingly uses public land for personal use or personal economic gain where the use is prohibited is guilty of trespass and a misdemeanor and is liable to the state or county for a civil penalty three times the amount of the damage. (b) A person violating paragraph (a) may be issued a ticket and summons for a court appearance. The prosecuting authority shall prosecute the misdemeanor and shall bring an action for the civil penalty or, on failure to do so, the attorney general at the request of the public agency responsible for managing the land may prosecute the misdemeanor and shall bring an action for the civil penalty. (c)

Damages must be determined as the greater of: (1) the cost to restore the public land to the condition it was in before the trespass occurred plus an amount to compensate the public for the loss of use; or (2) the economic gain realized by the person committing the trespass. (d) The civil penalty shall be paid to the court and the court administrator shall pay: (1) for a trespass on county land, the entire amount to the county to be used for restoration of the trespass and county land improvement purposes; (2) for a trespass on state land, the civil penalty to the state agency responsible for managing the public land which is appropriated for restoration of the trespass and state land improvement purposes.

Subdivision 4. **Separate actions.** The prosecution for criminal trespass and the civil penalty are separate criminal and civil actions. If a trespass occurs, an action may be commenced for the criminal penalty, the civil penalty, or the civil penalty and the criminal penalty.


Appendix 4:
Existing Grant-in-Aid
Snowmobile Routes
2004 GIA Snowmobile Routes
2 0 2 4 Miles
Aitkin
Cuyuna
Cuyuna Country State
Recreation Area
Cedar
Serpent
Crosby
Ironton
Riverton
Mississippi River
Round
North Long
Crow Wing Co.
Aitkin Co.
Brainerd
Baxter
Crow Wing
State Park
Mille Lacs
N
W
E
S
70

Appendix 5: Historic Mining Landscape District



Appendix 6: Historical Significance of a Rail Route

By Paul E. Nordell – DNR Trails & Waterways

The corridor between Aitkin and Brainerd served initially as a segment of a regional rail route transporting lumber and general supplies, then as a transcontinental route. The transcontinental route was later augmented to become a strategic transporter for a manganese-rich iron-mining district.

On the developing western end of the corridor, Brainerd became the railhead of the future transcontinental rail route from Duluth to the Pacific Ocean on March 11, 1871, when the first train reached this village. For many river towns such as Brainerd, a railroad line contacting or crossing the river either created or re-defined the town site. For example, in August 1870 a rail line began service between the Mississippi River in Saint Paul and the Great Lakes port of Duluth, putting that young seaport on the map. Duluth was incorporated earlier that same year, on March 5, 1870.

Even before railroad service began to Duluth, the Northern Pacific Railroad (NP) had begun construction of a transcontinental route to the Pacific Ocean. On February 15, 1870, the NP began building west from Northern Pacific Junction, a place just outside Duluth. This place was later known as Carlton, where the line linked to the nearly completed line between Duluth and Saint Paul. The *Brainerd Tribune*, beginning on February 10, 1872, had much to say about rail's impact on the Brainerd area. It reported that, although the first house was built in October 1870, the place's only real claim to significance was borne out in its original name, "The Crossing." This was where the NP had chosen to cross the Mississippi River. The newspaper reported that the population, by early 1872, had grown to 1,300 people. On March 2, the paper reported that the *Duluth Herald* claimed the work was "progressing finely" on the NP steamboat wharfs on Lake Superior, with a dock at least 1400' long to be completed in two weeks, ready for the first arrival of boats in the spring.

The *Brainerd Tribune* report of April 15, 1872 (published on April 20th) says it all:

> ...no town on the line of the Road presents more attractive features or impresses one more with a sense of its future greatness than yours. Be the first harbor of the lumber borne upon the sweeping current of the Mississippi, it must supply mainly the prairies of the West with this indispensibly necessary article. Already the energetic and worthy contractor, Lyman Bridges, is in process of construction of fifty Station Houses, of the latest style of architecture, made from materials obtained here.

The same report talks about the "imposing and substantial bridge being pushed to completion at [the western end of the NP construction] in Moorhead, where the new depot buildings are now already…" Moorhead was yet another town experiencing the economic boom of becoming a rivertown railhead.

Railroads and water ports generally work together to strengthen the local economy. Brainerd was one of those towns where, because of its water location, it was built into a transportation center. Brainerd suddenly became a destination for any products and services transported by

river. This rail development on the Mississippi would permanently change the face of northern Minnesota. It all began in the spring of 1872.

The importance of rail as a new way of life was underscored in the newspapers of the time, such as this quote from the *Brainerd Tribune* of February 24, 1872:

> This is beyond question an age of railroad excitement. Throughout the whole country, and the whole civilized world, railroads are the rage… Inside of five years you can go to mill, to church, to your neighbors, or if you desire, to the old scratch, on a railroad.

Timeline of Events Shaping Rail Development in the Aitkin to Brainerd Corridor

1850 – J.G. Norwood, assistant geologist with the D.D. Owen survey, took samples of iron ore from the Gunflint Iron Range on the Canadian border. This area was mined for a few months in 1888, but never developed further because of financial reasons, and because of the high titanium content of the ore. It was the first attempt to mine iron in Minnesota, and pre-dates the Cuyuna discovery by 45 years.

1864, July 2 – The Northern Pacific Railroad (NP) was incorporated, with the purpose of linking Lake Superior with the Puget Sound.

1865 – Iron was discovered on Lake Vermilion during the Vermilion Gold Rush. The mining of iron ore was not yet an issue of interest.

1869, May 10 – The nation's first transcontinental rail route coast-to-coast began, as the Union Pacific Railroad met the Central Pacific track. The NP was scrambling to participate in this lucrative transcontinental market with a northern transcontinental route, beginning at Duluth.

1870, February 15 – NP begins construction west from NP Junction (later called Carlton).

1870, September 13 – Village of Aitkin founded. It had a NP station.

1871, March 11 - NP completes its line from NP Junction (Carlton) to Brainerd, with the first train arriving.

1873 - The Panic of 1873 brought the collapse of Jay Cooke's NP financial empire, and Duluth was totally dependent upon the NP's lake terminus for its livelihood. Duluth went almost totally bankrupt in a few days. The population shrank from 5,000 to 1,300. Brainerd's population shrank to less than half, and the NP closed its shops in Brainerd.

1882 – New Orleans and California were linked by rail, providing a southern rail route between the Pacific and Atlantic Gulf Coast. The NP would join the transcontinental shipping bonanza by completing its own route to the ocean the following year.

1883, September 8 – The NP completed its connection to the Pacific, with a golden spike driven at Gold Creek, Montana. This put the Brainerd area strategically along a transcontinental route. The NP was now one of four such transcontinental routes, including the Atchison, Topeka and Santa Fe Railroad, built through Kansas that same year.

1884, July 30 – The Vermilion Iron Range began production with its first shipment from the Breitung pit (Mountain Iron) to Agate Bay (Two Harbors). The third iron range to open would be the Cuyuna Range, discovered just 11 years later.

1892, October 17 – First shipment of iron ore from the Mesabi Range, from Mountain Iron (St. Louis Co.) to Superior, Wisconsin. By 1895, when the Cuyuna Range was discovered, shipments from the Mesabi were up to 3 million tons per year.

1893 - The NP failed again during the Panic of 1893. This time J.J. Hill and associates reorganized the company. In July the Mesabi Range began shipments from Mountain Iron (St. Louis Co.) directly to Duluth.

1895 – Cuyler Adams and his prospecting dog Una discover a magnetic anomaly (iron) under the surface near the future site of Crosby.

1904 – Prospector drilling began on the Cuyuna Range.

1909 – The Minneapolis, Saint.Paul and Sault Ste. Marie Railway (MStP&SSM) built west from its mainline at Lawler Junction, to the Cuyuna iron mines of Ironton, Crosby and Deerwood, a distance of 27.89 miles.

1909, October 8 – Deerwood incorporated. It was a station for both the NP and the MSTP&SSM.

1910, July 6 – Crosby incorporated. It was both a NP and MStP&SSM station.

1910, July 7 - Cuyuna incorporated. It was a MStP&SSM station.

1911 - First shipments of iron ore left the Kennedy mine on the Cuyuna Iron Range.

1911, June 6 – Ironton incorporated. It was spurned by a bypass of the MStP&SSMA in 1911. It was connected by the NP in 1912.

1911, September 25 – The Cuyuna Northern Railway incorporates. It built two branch lines, one from Deerwood to Mille Lacs ore shaft and one to Oreland.

1912, January 5 – Riverton incorporated. It was a MStP&SSM station.

1912, January 20 – Oreland platted. It was a NP station.

1913, March 21 – Wolford platted. It was a MStP&SSM station.

1913, November 10 – Manganese incorporated. It was a MStP&SSM station.

1914, March 6 – Woodrow platted. It was a NP station.

1914 – The MStP&SSM built 6.3 miles of track to Iron Hub and Iron Mountain, connecting with various iron mines.

1914, June 18 – The NP acquires the Cuyuna Northern Railway along with another company. This gave NP access to various iron mines in the Cuyuna iron district.

1914, August 3 – As Europe breaks out into the Great War, the *Cristobal* becomes the first ocean-to-ocean ship to go through the new Panama Canal. The canal took only light traffic during the war, but in July 1919, after the war, the first dramatic use of the canal took place when a U.S. armada of 33 ships locked through, returning from the war zone. This signaled a major shift in the way America would transport transcontinental goods. The Duluth to Puget Sound route would never again be as vital to the America national interests. However, the manganese-bearing iron of Cuyuna created an intense need for rail transport because foreign supplies of manganese, a crucial steel hardener, were cut off during the war. During the following year 1.1 million tons of ore were shipped from Cuyuna.

1915 – United States Steel Corporation opens its mill in Duluth. That same year, the NP built a line from Iron Mountain Switch to Iron Mountain (Aitkin Co.).

1917, August 9 - Iron Mountain (Trommald) incorporated. It was a NP station.

1930 – The MStP&SSM abandoned all of its lines, except for a short spur west of its mainline at Lawler Junction, a total abandonment of 34.19 miles. This left only the NP operating lines into the Cuyuna Range iron mines. However, a court case determined that both the MStP&SSM and NP had a 50-50 shared ownership of the various rail lines in the Cuyuna iron district. Between 1904 and 1984, when the mines stopped shipping, over 106 million tons of 10% manganese ore were removed.

1987, February 28 – By this time, the NP had changed to the Burlington Northern Railroad (BN) and the MStP&SSM had changed to the Soo Line Railway (SOO). They abandoned the following portions of rail in the Cuyuna district: SOO abandoned Crosby to Crosby Junction (0.98 miles); BN/SOO abandoned Ironton to Cuyuna (4.77 miles); BN/SOO abandoned Huntington Junction to Riverton (2.31 miles); BN/SOO abandoned Deerwood to Trommald (9.83 miles).

1993 – A multi-agency effort resulted in the creation of the Cuyuna Country State Recreation Area, with enabling legislation being *Laws of Minnesota, 1993*, Chapter 172, Section 34. Subdivision 3 of the law concerns future mining in the area. The future mineral commodity of concern would be manganese-rich iron ore. Manganese is a hardening agent in steel production. It was of strategic importance during WWI and WWII when foreign sources were threatened or curtailed.

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