Grant County
Trail and Bikeway Master Plan

March 2020

GRANT COUNTY
Minnesota

Acknowledgements

The following individuals participated in stakeholder meetings that contributed to the development of the *Grant County Trail and Bikeway Master Plan*:

Meeting in the City of Hoffman

- Dianne Johnson, City of Hoffman Economic Development Authority
- Pat Lawson, City of Hoffman
- Jessica Peterson, Horizon Public Health
- Janee Strun, City of Hoffman

Meeting in the City of Elbow Lake

- Jill Amundsun, West Central Initiative
- Dan Denardo, Grant County resident
- Deb Hengel, City of Elbow Lake
- Jeff Holsen, City of Elbow Lake
- Bill LaValley, Grant County Commissioner
- Roger Toso, Elbow Lake City Council

**Two additional stakeholder meetings were held in the cities of Herman and Ashby, and the names of the meeting attendees were not collected.*

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Plan Contents

Chapter 1
Introduction & Overview

Introduction

Trails and bikeways enhance the quality of life for Grant County residents by providing recreational, fitness, and transportation opportunities for many different types of users, including people bicycling, walking, jogging, in-line skating, or using wheelchairs or other mobility devices. In late 2018, Grant County initiated a process to develop a Trail and Bikeway Master Plan to serve as a guiding document for future development of trails and on-street bikeways[1] throughout the county.

Figure 1.1: A trail along County Road 5 outside the City of Hoffman.

Plan Purpose and Organization

The purpose of the *Grant County Trail and Bikeway Master Plan* (Plan) is to guide the development of a network of off-street trails and on-street bikeways throughout the county. The Plan will be used for infrastructure planning and budgeting, including grant funding applications and programming capital projects. The Plan provides information on:

- Community background, existing plans, and existing conditions (Chapter 2)
- Community engagement efforts (Chapter 3)
- Trail and bikeway types and facility selection guidance (Chapter 4)
- Planned trail and bikeway network (Chapter 4)
- Resources for implementation and funding (Chapter 5)
- Best practices for maintaining trails and bikeways throughout the year (Chapter 5)

[1] *On-street bikeways are bicycle facilities that can take a variety of forms, including paved shoulders, bike lanes, buffered bike lanes, and separated bike lanes. Paved shoulders may also be used by pedestrians.*

Chapter 2
Existing Conditions & Plans

Community Background

Grant County is a rural county in west-central Minnesota with a total population of slightly less than 6,000 people. There are seven towns within the county but only one—the county seat of Elbow Lake—has a population greater than 1,100 (the locations of all towns are noted in ***Figure 2.1*** with dashed lines). County and local roads predominate between and within these cities although Interstate 94 passes through the northeastern portion of the county, and US Highway 59 bisects it from north to south. State highways in the county include Highways 9, 27, 54, 55, 56, and 79.

Existing Plans

Ashby to Battle Lake Regional Trail Master Plan

The proposed *Ashby to Battle Lake Regional Trail* is located primarily in Ottertail County but has 1.1 miles of planned trail segment in Grant County. The trail would connect to the Central Lakes Regional Trail in Ashby, then travel north following the County Road 10 corridor north of Ashby into Ottertail County. In order for a trail to be considered a 'Regional Trail' and become part of the Greater Minnesota Regional Park and Trail System, the trail must receive Regional Trail designation from the Greater Minnesota Regional Parks and Trails Commission and have its very own master plan before applying for Regional Trail designation.

MnDOT District 4 Bicycle Plan

In March 2019, MnDOT completed the MnDOT District 4 Bicycle Plan which identified bicycle investment routes throughout MnDOT District 4. Bicycle investment routes are planning tools that will guide MnDOT's future investments in bicycle facilities across the district. MnDOT staff coordinated with local partners to develop these routes to better understand where it is most appropriate to make investments in bicycle infrastructure throughout District 4. Some bicycle investment routes are located on MnDOT State Highways, and others are identified on county or local roadways. The District 4 bicycle investment routes located in Grant County are shown in ***Figure 4.2***, and can also be viewed on MnDOT's online interactive map.

Existing Trail and Bicycle Infrastructure

There are two categories of bicycle infrastructure referenced in this plan: trails and on-street bikeways. More information on bicycle facility types is provided in Chapter 4.

Trails/Shared-Use Paths

There are three existing trails/shared use paths in Grant County:

1. The *Central Lakes State Trail* cuts through the far-northeast corner of the county near the City of Ashby.
2. A shorttrail segment along both sides of Highway 82 through the City of Ashby, which also connects to the *Central Lakes State Trail*.
3. A trail in the City of Hoffman follows County Road 5 and connects to Elk Lake.

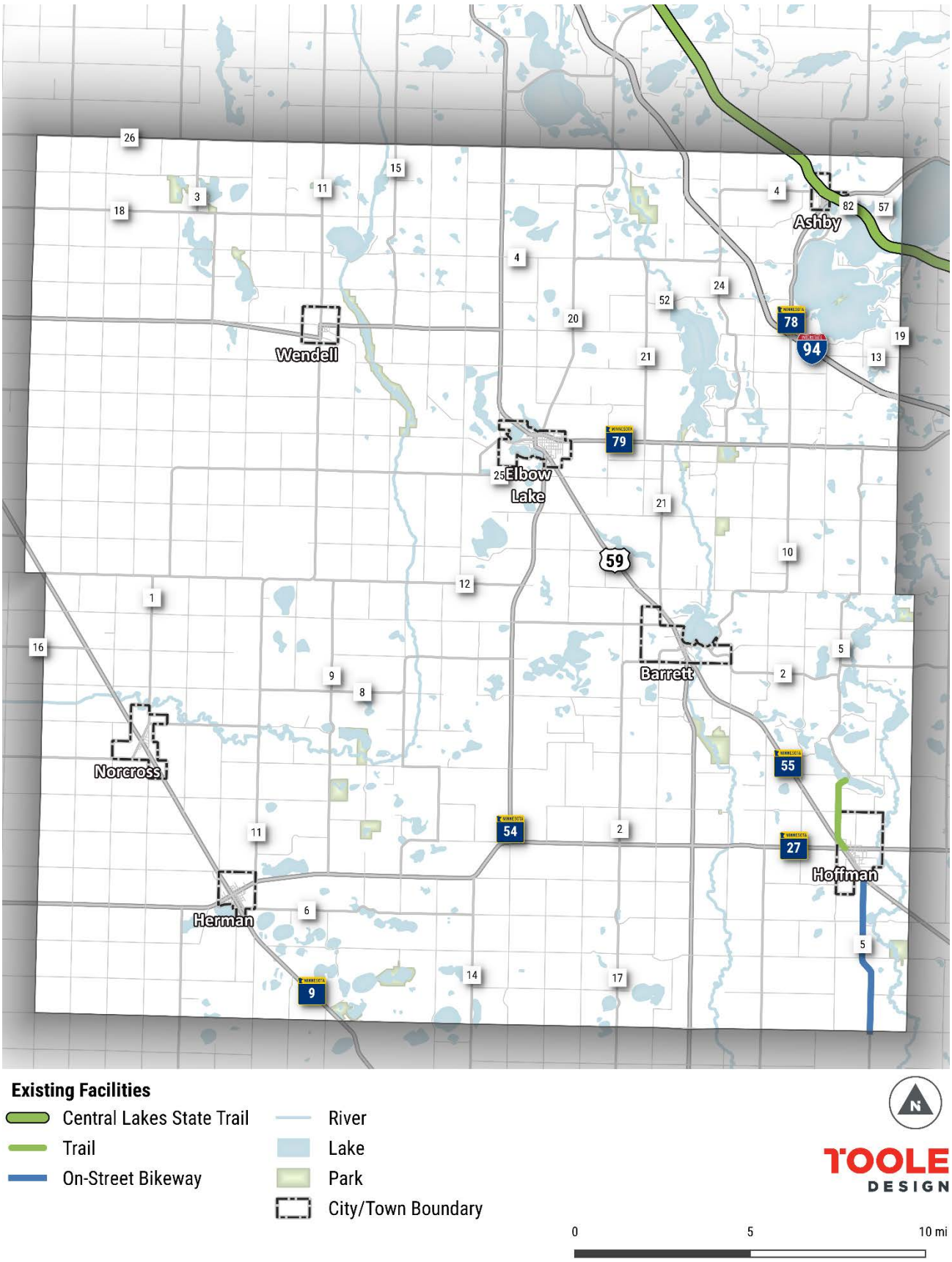
On-Street Bikeways

The only existing on-street bikeway in the County is a paved shoulder located on County Road 5 between Hoffman and the southern border of Grant County. However, many local or county roads are comfortable for bicycling because of low traffic volumes or speeds and/or wide paved shoulders.

Table 2.1: Existing trail and bikeway system mileage.

Existing Facility Type	Mileage
State Trail (Central Lakes)	4.09
Trail	2.37
On-Street Bikeway (Paved Shoulder)	4.29
Total	**10.75**

Figure 2.1: Existing trails and bikeways in Grant County.



Chapter 3
Community Engagement

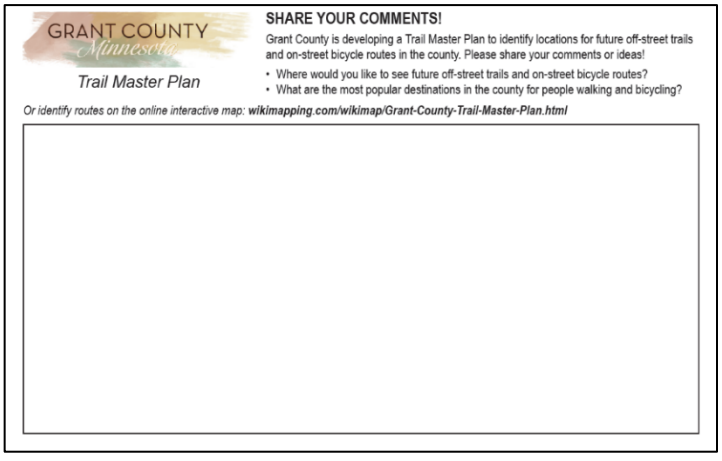
Development of the Plan included a multi-faceted approach to community engagement, using a variety of in-person and online engagement strategies designed to reach a broad cross section of the population in Grant County. The community engagement effort focused on gathering public input on the planned trail and bikeway network, asking community members where their top destinations are located, and where they would like to see future trails and bikeways developed. Community engagement opportunities included small group meetings, comment forms in Elbow Lake's utility bill mailings, an online interactive map, and laminated posters of the draft trail map that were posted in public locations.

Small Group Meetings

A series of small group meetings were organized and facilitated with community members and staff from local municipalities across Grant County. The meetings were designed to help the project team gather input on existing conditions as well as learn where people are most interested in seeing future trails and bikeways across the county. Meetings were held in towns across the county, including Hoffman, Herman, Ashby, and Elbow Lake.

Comment Form Mailers

Recognizing that not all community members would provide input on an online interactive map, the project team also developed comment forms that could be added to utility bill mailers. The City of Elbow Lake sent the mailers to residents and businesses. A total of twenty-one people wrote down comments on the forms and returned them to the City office in Elbow Lake. A transcription of those comments is in **Appendix B**.


GRANT COUNTY
Minnesota
Trail Master Plan

SHARE YOUR COMMENTS!

Grant County is developing a Trail Master Plan to identify locations for future off-street trails and on-street bicycle routes in the county. Please share your comments or ideas!

- Where would you like to see future off-street trails and on-street bicycle routes?
- What are the most popular destinations in the county for people walking and bicycling?

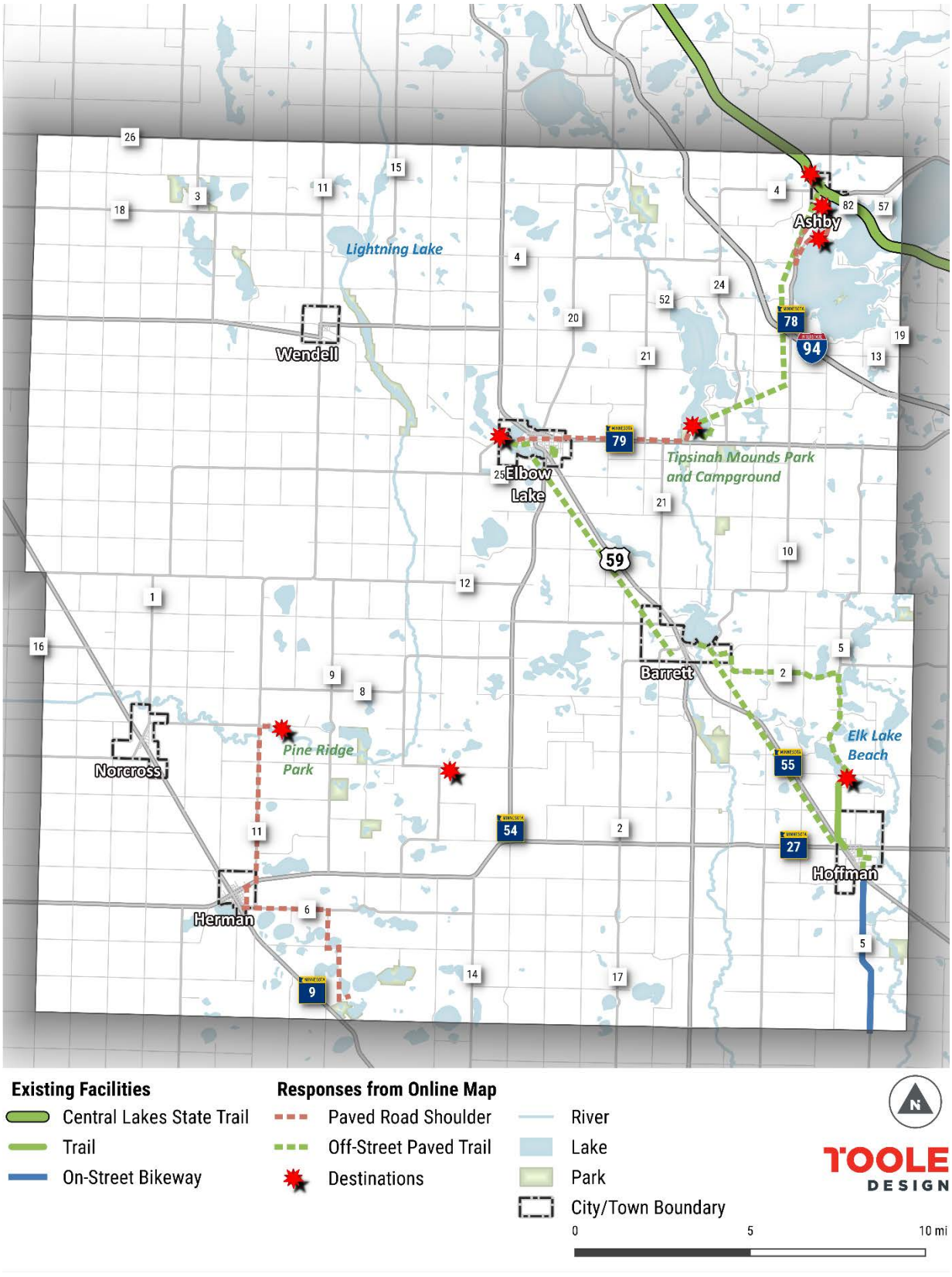
Or identify routes on the online interactive map: **wikimapping.com/wikimap/Grant-County-Trail-Master-Plan.html**

Figure 3.1: Public comment forms that were mailed to community members in Elbow Lake to solicit feedback on the Plan.

Online Interactive Mapping Tool

The project team developed an online interactive map as a tool to supplement in-person community meetings and gather additional community member feedback. Respondents were asked to identify popular destinations for bicycling and walking, as well as desired routes where they would like to see future trails or bikeways developed. The online survey allowed the project team to gather input from a wider variety of community members, including those that did not attend the small group meetings. The online interactive map had twelve individual respondents that provided thirty-two responses while the map was open for comment between December 12, 2018 and February 11, 2019. ***Figure 3.2*** shows the results from the online mapping tool.

Figure 3.2: Results from the online interactive mapping tool that displays destinations and desired trail routes that were identified by community members.



Destinations

Eight respondents identified popular destinations for biking and walking. These destinations are scattered throughout the county – three are located in or near the City of Ashby, one is at Elk Lake Beach near the City of Hoffman, and one is located in the City of Elbow Lake. The other three destinations identified are scattered in more rural sections of the county, including Tipinsah Mounds Campground, an ATV park, and the Pine Ridge Park Beach. Specific destinations in the Ashby area include Melby Park, Pelican Lake Beach, and Frog Lake Pier. One respondent noted that many people use County Road 10 to access these destinations, and that the crossing of Highway 78 at this location is particularly dangerous. The destinations identified the most were Melby Park and the Pelican Lake Beach.

Desired Routes

The online map allowed respondents to identify desired routes for bicycling within the county and the type of route they would like to see developed (either an off-street paved trail or a paved shoulder). Responses were split half and half between the two types of recommended routes. Paved road shoulders were recommended by community members in the following locations:

- City of Herman to Niemackl Lake Park Campground via State Highway 33, Township Road 69, and County Road 6;
- City of Herman to Pine Ridge Park and Beach via State Highway 27, County Road 11, and County Road 34;
- Eastern shore of Elbow Lake to Tipsinah Mounds Park via County Road 1 and State Highway 79;
- City of Ashby to Frog Lake Pier and the Central Lakes State Trail via County Highway 82;
- The southern section of the City of Ashby to the western shore of Pelican Lake via either State Highway 78 or County Highway 10.

Among the paved road shoulder routes, the recommended segment between the southern shore of Elbow Lake and Tipsinah Mounds Park received the most positive support from other respondents (four positive responses).

Off-street paved trails were recommended by community members in the following locations:

- City of Hoffman and the southern section of the City of Barrett using either the right-of-way (ROW) along State Highway 55, or County Highway 5 and 2;
- City of Barrett between the southern section of Elbow Lake west of US 59;
- Tipsinah Mounds Park and the City of Ashby (possibly by using the County Highway 10 and State Highway 78 ROWs);
- Pride of the Prairie Airport to Elbow Lake Park via the Airport Road ROW (upgrade to an existing path);
- Paths within Elbow Lake Athletic Park (upgrades to existing paths);
- Paths within the eastern section of the City of Hoffman (along the exterior of the Messiah Lutheran Church and circling the baseball field) as an alternative to walking on city streets.

Among the off-street paved trail routes, the recommended segment between Tipsinah Mound Park and the City of Ashby received the most positive feedback.

Draft Network Map Posters

The project team developed a poster with the draft planned trail network map and posted it in several public areas around the county. The poster solicited feedback on the planned trail network and directed people to email comments to the County's project manager. The posters were laminated so that they were waterproof and posted at campsites as well as other public locations around the county, such as libraries and other public buildings.

Key Findings from Community Engagement

The following are key findings that emerged multiple times throughout the community engagement process:

- The most desired route for a future bicycle facility is between Elbow Lake and the Tipsinah Mounds Park, which could eventually connect up to Ashby and the *Central Lakes State Trail.*
- Many popular destinations in the county are recreation sites, such as parks and beaches. Residents would like to see the future trail and bikeway network connecting to those sites.
- Grant County residents living outside of Ashby would like easier and more comfortable bicycling connections to the *Central Lakes State Trail* in Ashby.
- Children need better infrastructure to be able to walk or bike to school safely.
- Unused railroad beds could be utilized to develop new trails.

Chapter 4
Trail and Bikeway Network Development

Approach to Developing the Planned Trail and Bikeway Network

The recommended trail and bikeway network was established after several stages of development and iteration. The planning team developed an initial draft planned network after analyzing existing conditions (Chapters 2) and considering community member feedback (Chapter 3). That information was used to connect communities and destinations in Grant County and neighboring counties with planned trails and bikeways. The draft planned network was then posted publicly for additional community member feedback, and the project team made further revisions to the network.

Figure 4.1: A trail along County Road 5 in the City of Hoffman.

Planned Trail and Bikeway Network

The Grant County planned trail and bikeway network (***Figure 4.2***) includes existing and planned off-street trails, on-street bikeways, designated regional trails, state trails, and MnDOT Bicycle Investment Routes. ***Table 4.1*** illustrates the potential build-out of the trail and bikeway network, including existing and planned mileage for each facility type. The development of the planned trail and bikeway network in Grant County is a result of engagement with community members, existing conditions analysis, past planning efforts, and recommendations from project team members based on local knowledge and past experience.

Planned On-Street Bikeways

The largest category of planned facilities for the future trail and bikeway network is on-street facilities, with over 56 miles of planned routes. Planned on-street bikeways are typically longer routes that connect multiple towns in the county. The type of on-street bikeway for each planned route is not specifically identified in the plan, but the various types of on-street bikeways are described later in this chapter. The specific on-street facility type for each planned on-street bikeway should be determined through the project development process. Several factors should be considered such as motor vehicle traffic volumes, motor vehicle speeds, implementation cost, anticipated users and community member preferences. The Bicycle Facility Selection Guidance section of the Plan provides additional information.

Planned Regional Trails

There is one trail in the county that is designated as a 'Regional Trail' by the Greater Minnesota Regional Parks and Trails Commission - the *Ashby to Battle Lake Regional Trail*. The trail would connect to the Central Lakes Regional Trail in Ashby, then travel north following the County Road 10 corridor north of Ashby into Ottertail County. The majority of the planned trail would be located in Ottertail County; 1.1 miles would be located in Grant County.

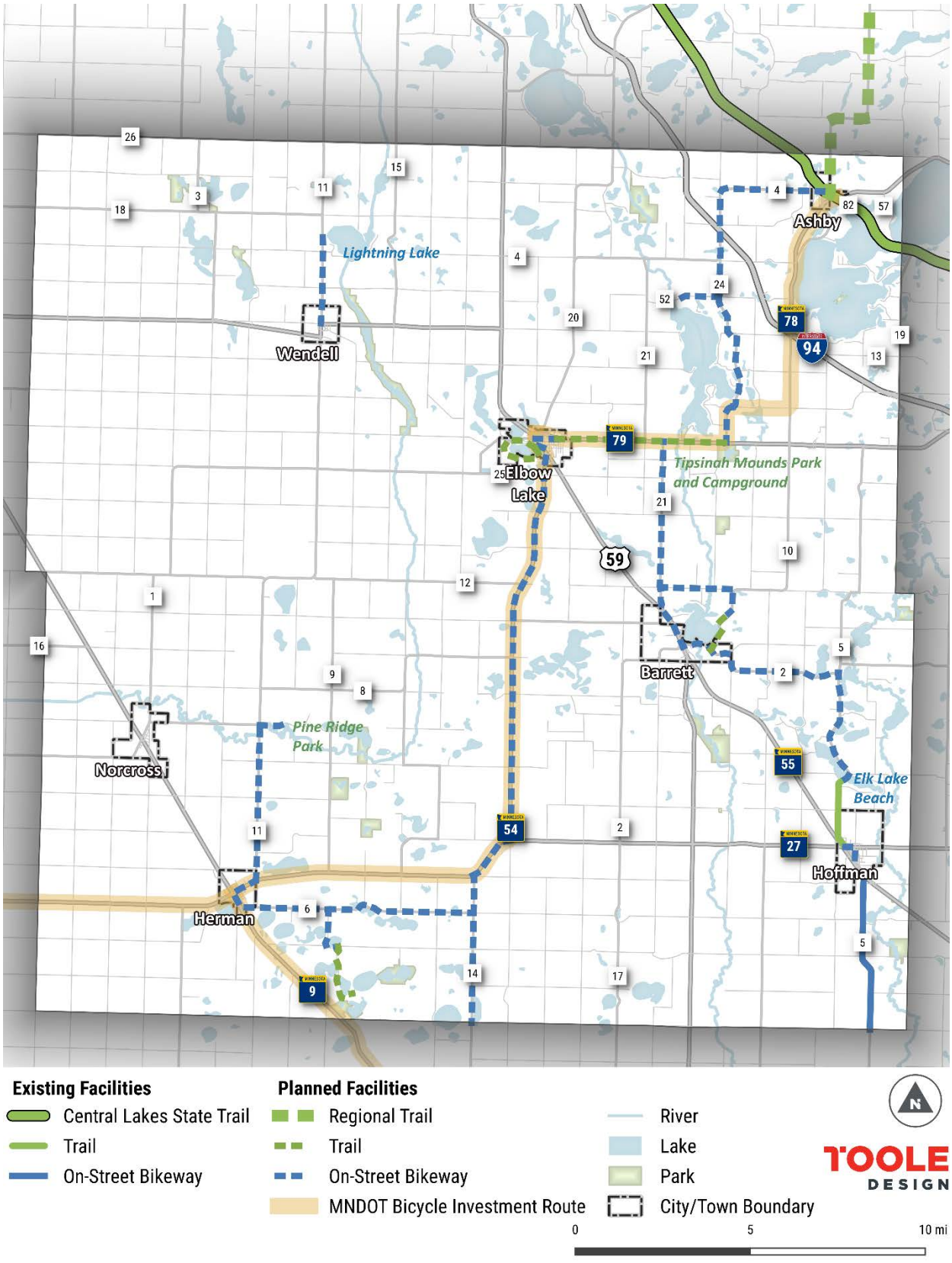
MnDOT Bicycle Investment Routes

In March 2019, MnDOT completed the MnDOT District 4 Bicycle Plan which identified bicycle investment routes throughout MnDOT District 4. Bicycle investment routes are planning tools that will guide MnDOT's future investments in bicycle facilities across the district. MnDOT staff coordinated with local partners to develop these routes to better understand where it is most appropriate to make investments in bicycle infrastructure throughout District 4. Some bicycle investment routes are located on MnDOT State Highways, and others are identified on county or local roadways. The District 4 bicycle investment routes located in Grant County are shown in ***Figure 4.2***, and can also be viewed on MnDOT's online interactive map.

Table 4.1: Potential trail and bikeway system mileage if all of the planned facilities are constructed.

Facility Type	Existing (mi.)	Planned (mi.)	Total (mi.)
State Trail (Central Lakes)	4.09	0	**4.09**
Designated Regional Trail	0	1.10	**1.10**
Trail	2.37	10.06	**12.43**
On-Street Bikeway	4.29	56.57	**60.86**
Total (mi.)	**10.75**	**67.73**	**78.48**

Figure 4.2: The planned trail and bikeway network in Grant County, which includes existing and planned on-street bikeways, trails, regional trails, state trails, and MnDOT Bicycle Investment Routes.



Bicycle Facility Types

There are several types of trails and on-street bikeways that could be implemented in Grant County. Complementing shared use trails with on-street bikeways enhances the overall trail system by making it more connected, complete, and convenient. Descriptions of various types of trails and on-street bikeways are provided below.

Trails

Trails (also called shared use paths or multi-use paths) are designed to be multi-use and used by people walking, jogging, bicycling, roller skating and more. Trails may be located within a greenway, park, or open space, or within road rights-of-way or utility easements. Some trails may run parallel to a roadway, also known as a sidepath.

Figure 4.3: Central Lakes State Trail. Credit: www.boomsbeat.com

County/Municipal Trails

These trails are usually developed and maintained by municipal or county agencies. They typically serve more localized trips, connecting popular destinations within a city or town and serving local residents.

Designated Regional Trail

Regional trails are typically longer trails that connect multiple communities in a region. In order to be designated as a regional trail, they must first be identified through a master planning process and then be designated by the Greater Minnesota Regional Parks and Trails Commission .

State Trail

Minnesota State Trails are typically longer trail segments that may traverse multiple counties in Minnesota. State trails may be paved or unpaved, and they are designated by the Minnesota Department of Natural Resources (MnDNR).

On-Street Bikeways

On-street bikeways (i.e., bike lanes, buffered bike lanes) are paved portions of roadways that serve as a means to safely separate bicyclists from motor vehicle traffic. On-street bikeways range from paved shoulders, to bike lanes, and separated bike lanes. On-street bikeways differ from trails in that they are located outside of the roadway and dedicated solely to bicyclists, whereas trails are multi-use facilities and accommodate many different users. On-street bikeways generally allow people bicycling to travel faster than on trails by providing a more direct, continuous route to destinations. The only existing on-street bicycle facilities in Grant County are paved shoulders, which can also be used by pedestrians.

Paved Shoulder

Paved shoulders are the portion of the roadway outside of the drive lane on the edge of the road. Shoulders can be used by bicyclists as well as pedestrians, and also benefit people driving by providing space to pull over if needed. Paved shoulders typically only serve more experienced bicyclists that are comfortable riding next traffic without any physical separation. Recommended paved shoulder width depends mostly on the anticipated average daily traffic (ADT) and traffic speeds.

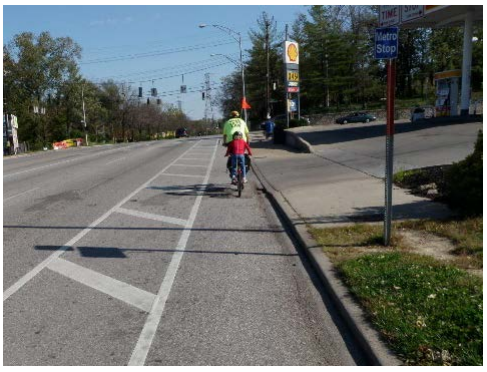
Bicycle Boulevard

Bicycle boulevards are streets with low motor vehicle traffic volumes and speeds, which are designated to give bicyclists travel priority. They are most commonly designated on low-traffic side residential streets and often use traffic calming measures to reduce speeds. Major bicycle boulevard intersection crossings may have signals, warning beacons, or refuge islands.

Bike Lane

A bike lane is a designated portion of a street for the exclusive use of bicycles. Bike lanes are typically designated with striping, bicycle pavement markings and bike lane signs. Pavement markings are typically dashed where vehicles are allowed to cross the bike lane, such as for right turns or at bus stops. Bike lanes are best suited for arterial and collector streets where there is enough width to accommodate a bike lane in both directions. Bike lanes are usually 5-6 feet wide.

Buffered Bike Lane



Buffered bike lanes are similar to bike lanes but feature a painted buffer space to increase lateral separation between bicyclists and motor vehicles. Buffers are commonly placed between moving car traffic and bicyclists, providing additional separation from moving traffic, but they can also be placed between bicyclists and parked cars, reducing the hazard of opening car doors. Buffers can be placed on both sides of the bike lane if space allows.

Separated Bicycle Lane

A separated bike lane, also known as a protected bike lane, is a bike lane that is physically separated from motor vehicle traffic by vertical elements such as flexposts, curbs or raised medians. Separated bicycle lanes are safer and more comfortable for users due to the vertical and horizontal separation between bicycle riders and passing traffic. Separated bike lanes can be one-way facilities on each side of a road, or they can be two-way facilities on one side of the road.

Facility Selection Guidance

Many of the planned facilities are 'on-street bikeways', which may be any of the facility types described in the preceding section. The facility type most appropriate for any given location depends on a number of factors, including the available right-of-way, motor vehicle speeds, and traffic volumes. Roadway conditions and land uses may change along the length of a corridor, which may result in the need to transition between facility types.

Figure 4.4 and ***Figure 4.5*** can be used to determine what type of facility is recommended on roadways in varying contexts. The figures display how traffic speeds and volumes affect desired shoulder width and facility type for people walking or bicycling in rural, urban, and suburban areas. The areas on the charts shaded darker blue represent roadway conditions that are less comfortable for people due to high motor vehicle volumes and/or high motor vehicle travel speeds. Therefore, wider shoulder or bicycle facilities with more separation from motor vehicles is recommended on those roadways. The areas on the charts that are white or light blue are more comfortable for people due to lower motor vehicle volumes and/or lower motor vehicle travel speeds.

Figure 4.4: The relationship between traffic volumes and traffic speeds on recommended low-stress facility types on rural roadways.

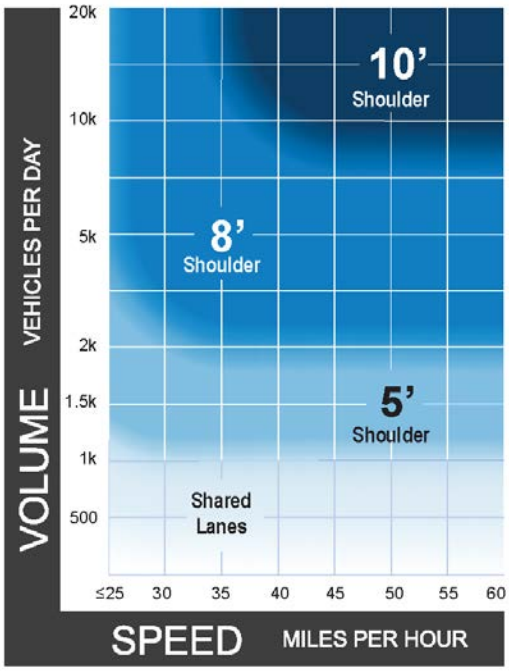
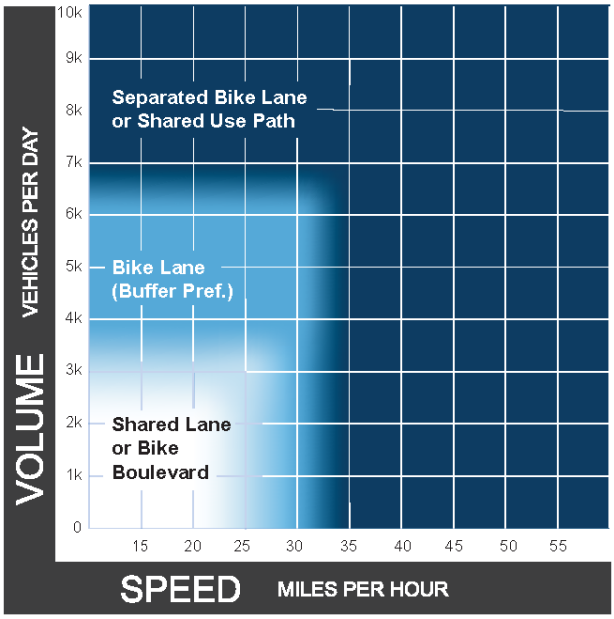


Figure 4.5: The relationship between traffic volumes and traffic speeds on recommended low-stress facility types on city and suburban roadways.



Trail and Bikeway Amenities

Trail related amenities include bicycle parking, motor vehicle parking, benches, lighting, water fountains and picnic tables, informational signage, wayfinding, benches, trash receptacles and more. Amenities enhance the experience of using trails and may help attract trail users.

Bicycle Parking

Consistent, organized bicycle parking encourages people to bicycle for transportation, provides site-specific benefits, and encourages good parking behavior. Inadequate bicycle parking facilities and fear of theft are major deterrents to bicycle transportation; as such, users are more likely to use a bicycle for transportation purposes if they are confident that they will find adequate bicycle parking at their destination.

Figure 4.6: Bike parking provided at trail heads allows users a convenient place to lock their bikes.

The design of bicycle parking sites should consider a full occupied rack element and adequate space needed for users to access a parking space from both sides. The location of bicycle racks should follow these guidelines:

- Easily accessible from the street and protected from motor vehicle traffic
- Visible to passers-by to promote use and enhance security
- Does not impede or interfere with pedestrian traffic or maintenance activities;
- Does not block access to buildings or freight loading
- Provides clearance for opening passenger-side doors of parked vehicles

Bicycle racks are manufactured in various shapes and sizes, however not all manufactured bicycle racks meet recommended standards. Features of an acceptable bicycle rack include:

- Bicycle rack should be secured to a permanent foundation
- Use tamper-resistant hardware to fasten to location
- Support a bicycle upright in two (2) or more places
- Ability to support a variety of bicycle sizes and frame shapes
- Space to safely secure the frame with one or both wheels to the rack

Motor Vehicle Parking

Most trail entrances do not provide off-street parking for motor vehicles, particularly where parking is located nearby, or where many users live within near the trail and are likely to either walk or bike to the entrance. For major trails that attract people travelling longer distances, off-street parking can be beneficial. The number of parking spaces should ideally be based on demand and include appropriate accessible spaces. However, vehicular parking is often constrained by the amount of property available. One method of determining parking demand is described in the Institute of Transportation Engineers publication, “Parking Generation”; other methods may also be appropriate.

Benches

Trail entrances often act as meeting places and benches allow visitors to rest while waiting for other trail users. Trail users may also wish to rest after a walk or bicycle ride. Benches should be accessible and should generally be placed to maximize the view of people passing by, or a significant natural feature. It is generally not preferable to place a bench so that one's back is to the trail.

Figure 4.7: People resting on a bench along a trail through a park.

Lighting

Lighting may be needed to improve safety and security at trail entrance that are open during evening hours.

Water Fountains

Water fountains are a welcome amenity for some users, and can also be designed to provide water for pets. Water fountains are often placed at key locations along a trail system, such as at trailheads, restrooms, or shelter areas that have access to a potable water supply.

Picnic Tables

Picnic tables are another welcome amenity for trail users. Picnic tables should be accessible and placed away from the flow of trail traffic.

Informational Signage

Informational signage can include helpful information such as the name of the trail, operating hours, "you are here" maps, contact information to report problems, emergency response information such as contact information, and trail rules and regulations. These should meet accessibility requirements for position, height and legibility of signs.

Bike Repair Stations

Bike repair stations (***Figure 4.8***) can be placed along trails or at trailheads to provide the public tools to perform basic bike repairs and maintenance, from adjusting brakes and derailleurs to inflating a flat tire. The tools are securely attached to a stand with stainless steel cables and tamper-proof fasteners to ensure they withstand weather and reduce theft. The stations typically include hanger arms which allows bikes to hang freely while making adjustments or repairs. Some bicycle repair stations come with a built-in air pump for inflating tires, or they may be sold separately.

Figure 4.8: Bicycle repair stations provide quick access to bicycle repair tools for trail users, such as wrenches, screw drivers, and air pumps.

Chapter 5
Implementation, Funding, and Maintenance

Implementation and Prioritization

The development of a comprehensive trail and bikeway network in Grant County will be an incremental process that will evolve and take a period of time to complete. The implementation of trails and bikeways will be prioritized and developed as opportunities present themselves and will be based on available resources and willing partners.

The most prudent and cost-effective method for implementation is to seek out opportunities related to projects already programmed in the County's highway improvement plan, capital improvement programs from local municipalities, or MnDOT's capital highway investment plan (CHIP) for MnDOT District 4. These projects may include pavement overlays, chip sealing, full road reconstruction, or traffic signal replacement projects. This strategy eliminates additional costs for trail and bikeway project implementation such as pavement marking eradication, pavement removals, and pedestrian ramp replacements since they are already included in the CIP project. As future street repair projects are added to these programs, trail and bicycle projects should be coordinated to seek out further efficiencies.

Figure 5.1: A trail along County Road 5 in the City of Hoffman.

Funding

The implementation of the trail and bikeway system in Grant County will require the use of a variety of funding sources. Funding sources are available from the federal, state, regional, county, and local levels. The following table describes various grant programs and other funding sources that can be utilized for developing trails and bikeways in Grant County.

Table 5.1: State and federal grants and other funding sources that could be used to implement trails and/or bikeways.

Trail and Bikeway Funding Source	Description
Grant County Highway Improvement Plan	Grant County can utilize funds already allocated in their highway improvement plan to fund bikeway and trail development. The highway improvement plan is a short-range plan which identifies capital projects and equipment purchases, provides a planning schedule and identifies options for financing the plan.
West Central Initiative Grant Programs	West Central Initiative administers the Surface Transportation Block Grant Program (STBG) in western Minnesota which is typically due in late fall each year. More information is provided below.
Minnesota Department of Health Statewide Health Improvement Program	The Minnesota Department of Health Statewide Health Improvement Program (SHIP) provides a variety of grants for active living initiatives. Allowable grant expenses related to bikeway and trail implementation include the cost of paint or tape for bike lane or cross walk striping, bike racks, bike shelters, and wayfinding signage (including the metal pole) for bike trails, parks, etc.
Minnesota Legacy Funds	In 2008 the Minnesota Clean Water, Land and Legacy Amendment was passed to support funding for a number of activities through a sales tax, including parks and trails funding. The Parks and Trails Fund receives 14.25 percent of the sales tax revenue resulting from the Clean Water, Land and Legacy amendment. Those funds may only be spent to support parks and trails of regional or statewide significance. Applicants must commit to the trail staying in place for at least 20 years and construction must be completed within 2 years.
Minnesota Department of Natural Resources Local Trail Connections Program	The Minnesota DNR's Local Trail Connections Program provides grants to local units of government to promote relatively short trail connections between where people live and desirable locations, not to develop significant new trails. Eligible projects include acquisition and development of trail facilities. The maximum grant award is $150,000.Grants are reimbursed up to 75 percent of the total eligible project costs, and recipients must provide a non-state cash match of at least 25 percent.
Minnesota Department of Natural Resources Regional Trail Grant Program	The Minnesota DNR Regional Trail Grant Program provides grants to local units of government to promote development of regionally significant trails outside the seven-county metropolitan area. The maximum grant award is $250,000. Grants are reimbursement based up to 75 percent of eligible project costs, and recipients must provide a non-state cash match of at least 25 percent.
Minnesota DNR Recreational Trails Program (RTP)	The Recreational Trails Program (RTP) provides federal funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Eligible projects include motorized and non-motorized trail projects; maintenance/restoration of existing recreational trails; development/

	rehabilitation of recreational trail linkages, including trail side and trail head facilities. Grant requests may be a minimum of $1,000 and a maximum of $150,000, with a match of 25% required.
Minnesota Safe Routes to School Infrastructure Grants	The Minnesota Department of Transportation offers an infrastructure funding program for Safe Routes to School (SRTS) projects that make it safer to walk or bicycle to school. Eligible projects for MnDOT's SRTS infrastructure grants include bikeways and shared use paths. A SRTS plan is recommended to apply, but not required.
FHWA Congestion Mitigation and Air Quality Improvement Program (CMAQ)	FHWA's CMAQ program provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards.
FHWA Surface Transportation Block Grant Program (STBG)	The STBG, formerly known as the Transportation Alternatives Program, authorizes funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities. West Central Initiative helps coordinate the Transportation Alternatives (TA) program in west central Minnesota.
Community Services Block Grant Program (CSBG)	The Community Services Block Grant provides funds to alleviate the causes and conditions of poverty in communities and includes transportation projects. Administered by the U.S. Department of Health and Human Services, funding is allocated to states who then make it available to local communities. Funded projects have included: commercial district streetscape improvements; sidewalk improvements; safe routes to school; and neighborhood-based bicycling and walking facilities that improve local transportation options or help revitalize neighborhoods.
FHWA Highway Safety Improvement Program (HSIP)	The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land. Eligibility criteria for HSIP funds can be found here.

Trail and Bikeway Maintenance

Maintenance is a crucial component of a well-functioning trail and bikeway network. In addition to the system-wide maintenance approaches discussed in this section, individual projects should include a maintenance plan that details costs, including personnel and equipment needed to maintain any new facilities. The County and it's partners timely response to any maintenance issues will encourage more people to user the facilities and boost confidence in the trail and bikeway network.

Several activities contribute to the maintenance of trails and bikeways, including those which are corrective, preventative, routine, and seasonal. Comprehensive maintenance covers the life of a trail from the conceptual stage to its eventual end. Trail and bikeway maintenance includes:

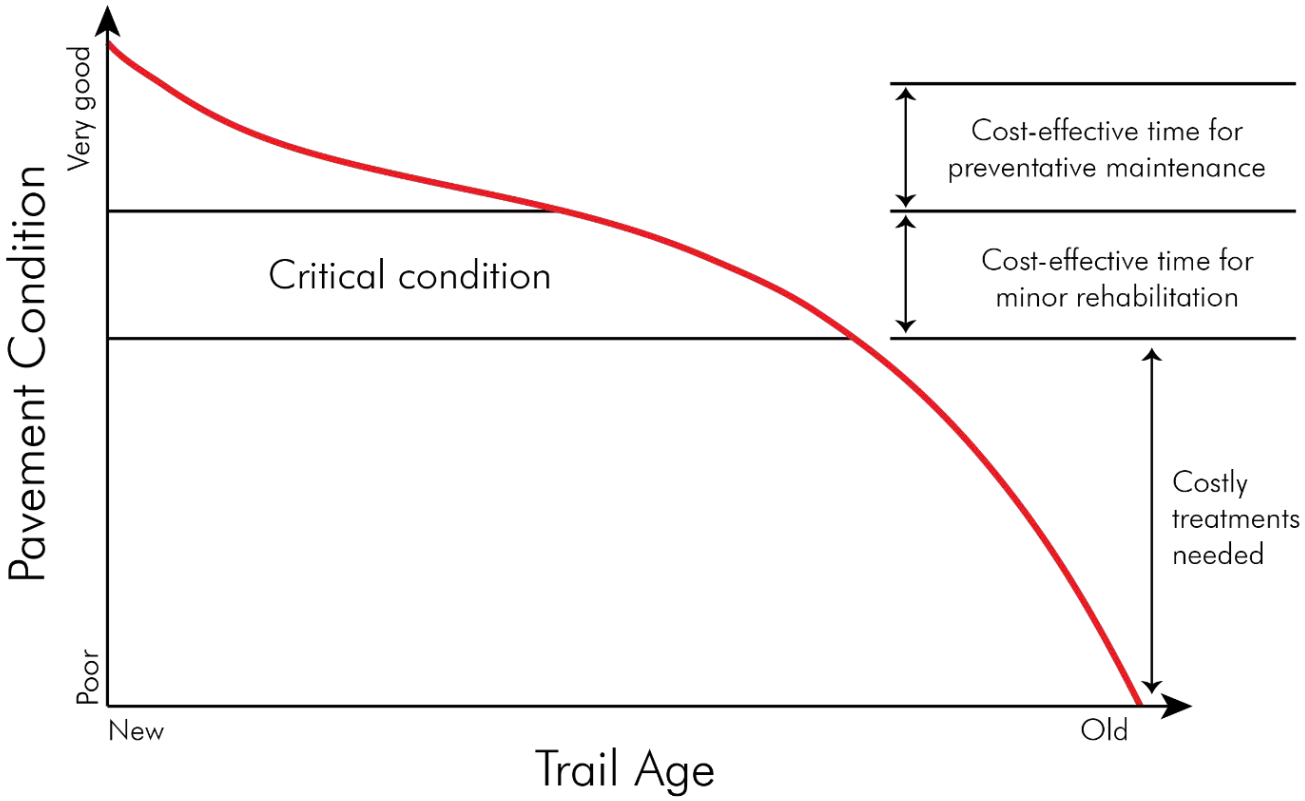
- Pavement preservation (e.g. surface treatments, crack treatments, pothole repair, resurfacing)
- Sweeping
- Pavement markings (e.g. epoxy, latex, polypreform, thermoplastic)
- Vegetation management
- Sign and signal maintenance
- Traffic control (i.e. detours)

- Snow and ice clearing

After constructing a trail or bikeway, ongoing pavement preservation is important to maintain a smooth surface for users and prolong the life of the pavement. When selecting an appropriate pavement preservation method, it is important to consider the surface type and desired ride quality. Types of pavement preservation include: surface treatments, crack treatments, pothole and depression repair, and resurfacing.

Properly maintaining trails on an on-going basis is more cost-effective than neglecting preventative maintenance and allowing the pavement condition to decay to the point that reconstruction is needed ("pave it and leave it approach"). ***Figure 5.1*** illustrates how neglecting pavement preservation treatments can cause a rapid decline in trail pavement condition which leads to more costly treatments such as resurfacing or reconstruction.

Figure 5.2: Preventative pavement maintenance and minor rehabilitation can significantly extend the lifespan of trails and help avoid costly future treatments such as mill and overlay or trail reconstruction.
Source: Modified from Minnesota Local Road Research Board



Pavement Surface Treatments

Pavement surface treatments are intended to restore minor surface defects and to seal and refresh the pavement surface. These generally have relatively short lives when compared to pavement overlays and must be re-applied on a regular basis to obtain maximum benefits. Surface treatments include the following:

Fog Seal

Fog seals are a recommended application for sealing and enriching the asphalt surface, sealing minor cracks, helping prevent raveling (surface deterioration) on high volume open-graded friction courses and providing shoulder delineation.

Slurry Seal

Slurry seals are a mixture of fine aggregates (rock) ranging in size from approximately ¼ to ½ inch in diameter, asphalt emulsion (oil), water, and mineral filler, which is mostly Portland cement. Slurry seals, which are typically ¼ to ½" thick, may be used to seal existing oxidized and hardened asphalt pavements, slow surface raveling, seal small cracks, and improve skid resistance.

Chip Seal

Chip seals (also known as seal coats) are applications of asphalt followed immediately with a layer of small rocks. Applications with two layers are referred to as double chip seals. Seal coats are primarily used to protect the pavement from the deteriorating effects of sun (asphalt hardening and oxidation or "chalking") and water.

Microsurfacing

Microsurfacing is a mix of polymermodified asphalt emulsion (oil), well graded and crushed mineral aggregate, mineral filler (normally Portland cement), water, and chemical additives that control the "break" (separation of water from asphalt) and evaporation time. Microsurfacing is primarily used as a preventive maintenance technique or surface treatment for asphalt pavements still in good general condition. Microsurfacing can slow raveling of aging asphalt pavements.

Crack Treatments

Crack treatments are necessary to prevent moisture infiltration into bikeway pavements, which can accelerate pavement distress. Crack treatments should be applied within the first five years of pavement construction to achieve the maximum benefit, and then reapplied as needed thereafter. Common materials used primarily for asphalt crack treatments in Minnesota include crumb rubber, hot-poured elastic, and CRAFCO Mastic One.

Pothole and Depression Repair

Even with proper maintenance, potholes and depressions can appear in pavement. Methods to repair potholes and depressions include hot mix asphalt patching, cold mix asphalt patching, and infrared patching.

Resurfacing

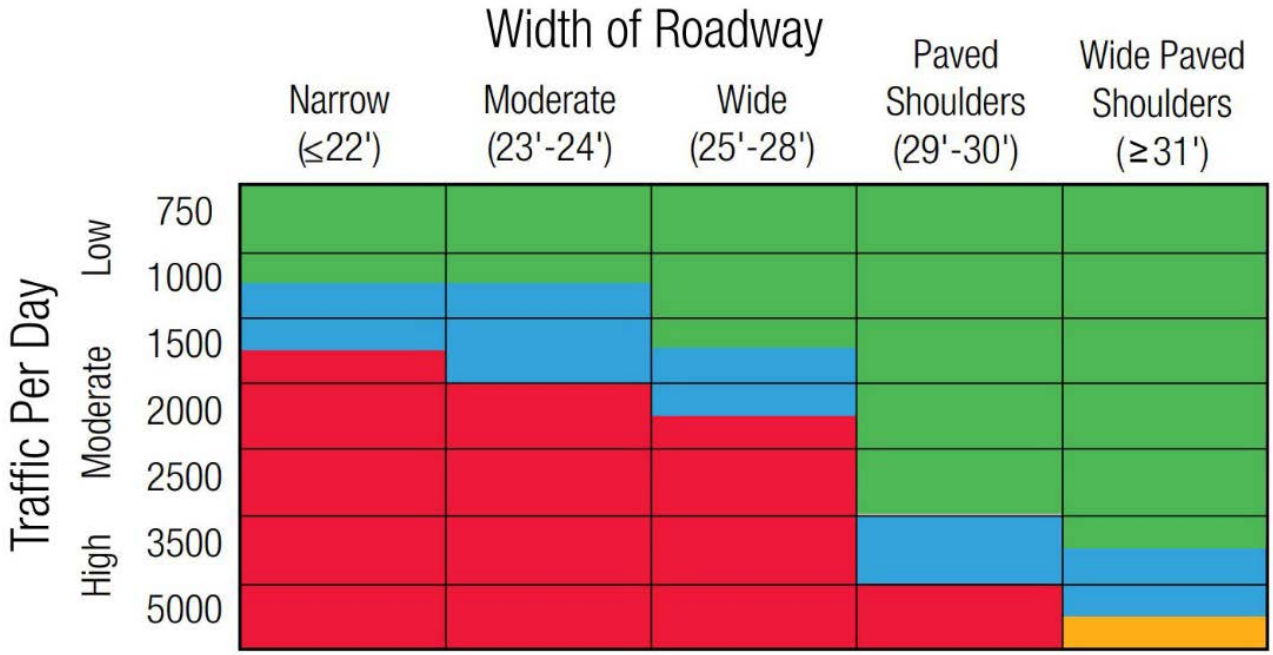
After a pavement has reached the end of its useful life, it will need to be reconstructed or resurfaced. Methods of resurfacing include asphalt overlay or mill and overlay – the removal of a surface layer of asphalt to remove surface defects prior to the application of a new layer of hot-mix asphalt surfacing, and ultrathin bonded wearing course.

Appendix A
Analyzing Existing Bicycling Conditions

Level of Traffic Stress Analysis

A Level of Traffic Stress (LTS) analysis was utilized as a tool to assess the safety and comfort of bicyclists on all existing roadways in Grant County. An LTS analysis uses inputs such as road type (for example, arterial or collector), vehicle volumes, posted speed limits, pavement type, roadway configuration and width—including shoulder widths and the status of parking—and existing bicycle infrastructure. All of these inputs were averaged out to arrive at a score for bicycling safety and comfort. The bicycling suitability methodology followed the standards of the *Wisconsin Rural Bicycle Planning Guide.*[2] ***Figure A-1*** illustrates how pavement width and traffic volumes affect bicycling conditions.

Figure A-1: Bicycling Suitability Based on Roadway Width and Traffic Volumes.
Source: Wisconsin Rural Bicycle Planning Guide.



Green – Best conditions **Blue** – Moderate conditions
Yellow – Higher volumes, use paved shoulders **Red** – Undesirable conditions

Level of Traffic Stress in Grant County

The numerical output of the LTS analysis in Grant County was translated into three scoring categories: Good, Fair, and Poor. Although bicyclists of different skill levels and comfort may perceive roads differently, these ratings apply to the average or typical user. Overall, most roads in the county are rated 'Good', which is largely the result of roads with relatively low motor

[2] Wisconsin Department of Transportation (2006), *Rural Bicycle Planning Guide*. Retrieved from: https://wisconsindot.gov/Documents/projects/multimodal/bike/rural-guide.pdf

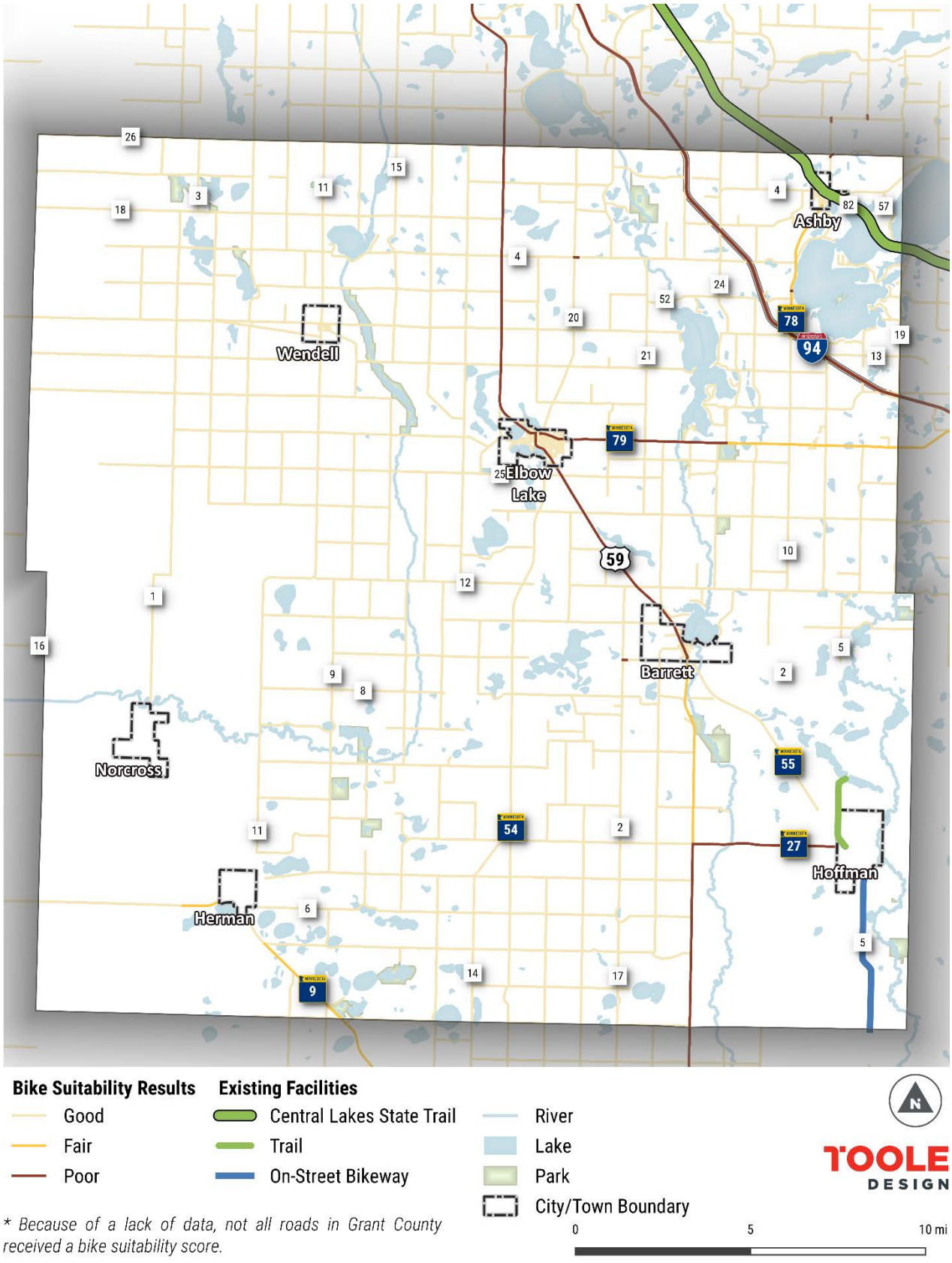
vehicle volumes throughout the county. ***Figure A-2*** displays the bicycling suitability results on roadways across in Grant County, which are also summarized in ***Table A-1***.

Traffic volumes and speeds play a large role in determining LTS ratings, with interstate highway or state highway corridors scoring Good or Fair. Most county roads, which form the majority of the county network, almost universally received Good ratings. Local streets within the county's cities also generally report Good ratings. If a planned route is on a roadway ranked 'Poor', then it is recommended to develop a facility with more separation. More information is provided in the Facility Selection Guidance section of the Plan.

Table A-1: Bicycling suitability summary of roadways in Grant County.

Bicycling Suitability Rating	Good	Fair	Poor
Location	• County roads • Local streets within cities	• Minnesota State Highway 78 between the City of Ashby and Interstate 94 • Minnesota State Highway 9 between County Road 39, south of the City of Herman, and the southern county border • Minnesota State Highway 79 between Pomme de Terre Lake and the eastern county border	• Interstate 94 Corridor countywide • US Highway 59 between the City of Barrett and the northern county boundary, and from State Highway 27 to the southern county boundary • Minnesota State Highway 79 between the City of Elbow Lake to Pomme de Terre Lake • Minnesota State Highway 27 between the City of Hoffman and US Highway 59

Figure A-2: Bicycling suitability analysis results on paved roads in Grant County. Gravel roads and roads that did not have data available were not rated in this analysis.



* *Because of a lack of data, not all roads in Grant County received a bike suitability score.*

Appendix B
Community Member Comments

Physical comments forms were mailed out with the February 2019 utility bills in Elbow Lake, providing residents another opportunity to provide feedback on the development of the plan. Twenty-one community members wrote down their comments and returned them to the City Offices. Verbatim comments are transcribed below.

1. There is an old railroad bed on the south edge of town. I don't know where it leads to or who owns it, but it could be considered for a bike/walk path if there was access to it and a place to exit.
2. It should be a trail with a very low grade. This would make it useable for more people.
3. Years ago, a bike path to Tipsinah Mounds was supposed to have been done. Haven't seen it. Now I'm too old to bike or walk that far.
4. I feel we need to be able to ride bike to Tipsinah Mounds. However, please do not make a pavement trail through Tipsinah. This would probably not be viable anyway because of the sacred Indian Mounds. As far as the river, you could have yield signs for bike riders: PLEASE YIELD FOR ONCOMING TRAFFIC. As far as extending the trail, it should eventually connect with the Central Lakes Trail. Thank you!
5. Where ever would be available.
6. I live in Elbow Lake and would like a safe bike route to Tipsinah Mounds Park. Is this park promoted for public use, or is it specifically for yearly (seasonal) campers? There needs to be a purpose for, or destination for trial routes such as rest/picnic/restrooms. Maybe trails to county lakes with designated bike lanes on highways. Let's not forget winter, I see Niemackl Lake Park encourages cross country skiing, snowshoeing and hiking. Are these activities available or encouraged at Tipsinah or other locations in the county? I've recently snowshoed in Douglas County-Rune Stone Park and Lake Brophy Park. Thank you for your consideration.
7. I would love for the trial to connect to the current trail in Ashby? Dalton? Evansville? A biking trail to the Secondary School (Barrett) from Wendell, Elbow Lake and one from Hoffman.
8. Tipsinah Campgrounds.
9. More off street and on street routes.
10. Bike path from East side of town to Tipsinah Mounds Parks.
11. I would love to see a bike trail extending from the Union Cemetery all the way to the Campground along Lake Pomme de Terre.
12. A bike/hike trail from Elbow to Pomme de Terre Campground (Tipsinah Mounds) and Fairhaven Beach would be awesome. And from Division going west out of town to ("1) left turn over tracks, to 250th Street (#25) left, to 54 left, into town = a nice five-mile loop.
13. Tipsinah Mounds, Fairhaven Beach. The back road to Wendell from Elbow Lake Bike Trail. Around Pomme de Terre Lake and Barrett Lake. Trail to Pelican Lake(Ashby) to Tipsinah Mounds to Barrett Pavilion to Elk Lake Park.
14. Along Highway 79 in town and out to Pomme De Terre Lake and Tipsinah Golf Course. Along Highway 55 to Barrett.

15. Love the idea!!! Trail out to the campground and golf course would be great.
16. I would like to see a trail placed from Tipsinah Mounds Campground to the Tipsinah Mounds Golf Course. A trail is this area would allow us to see the beauty of our local environment while connecting these two heavily used recreational sites.
17. Yes! West toward Fergus. East towards lake (Pomme De Terre)
18. Consider resurfacing the walking path at the athletic field (Elbow Lake)
19. We need the walking path by the softball fields repaired.
20. I think a designated trail out of town on Division Street - maybe around the cemetery and back into Elbow
21. There is an old railroad. And a trail out to Tipsinah Campground and out to the golf course would be ideal.