Juneau County
Bicycle & Pedestrian Plan
2019

Also covering the municipalities within Juneau County

Prepared by: North Central Wisconsin Regional Planning Commission

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- City of New Lisbon
- Village of Camp Douglas
- Village of Lyndon Station
- Village of Necedah
- Village of Union Center
- Village of Wonewoc
- Town of Germantown
- Town of Lyndon Area

Chapter 1: Introduction

Biking and walking are both important modes of transportation, whether used separately or in concert with other modes of transportation. In towns and rural communities, active transportation can be even more common than it is in urban areas.[1]

The focus of this plan is to enhance the viability of bicycling and walking as a form of transportation throughout communities in Juneau County (Map 1). This plan focuses on guidelines for planning bicycle facilities, with general design and funding information included. This plan also examines existing conditions for biking and walking countywide and suggests routes and segments on which to prioritize bicycling and walking improvements.

Since 1991, the federal government has recognized the role of walking and biking and their importance as part of a balanced transportation system, specifically as mentioned in the Intermodal Surface Transportation Efficiency Act (ISTEA).

The United States Department of Transportation (US DOT) and the U.S. National Safety Council also aim to end traffic fatalities within 30 years, and the Wisconsin Department of Transportation (WisDOT) has launched the Zero in Wisconsin campaign to prevent traffic deaths.

Project Purpose

Juneau County received a Transportation Alternatives Programs (TAP) grant from WisDOT to develop a plan to improve bicycle and pedestrian facilities throughout the County. The North Central Wisconsin Regional Planning Commission (NCWRPC) wrote and facilitated that plan throughout 2018 with oversight provided by the Juneau County Land, Forestry, Parks, & Zoning Committee, and an advisory group comprised of Juneau County officials, residents, and stakeholders who bicycle and/or walk in the County.

The Juneau County Bicycle and Pedestrian Plan is one of the first implementations of the North Central Wisconsin Regional Bicycle & Pedestrian Plan of 2018, written and adopted by NCWRPC. This plan, unlike the Regional Plan, analyzes bicycle and pedestrian transportation in Juneau County at a granular level, and recommends policies, programs, and facility treatments to improve the safety, convenience, and attractiveness of bicycling and walking for Juneau County residents and visitors alike.

[1] Federal Highway Administration. 2016 *Small Town and Rural Multimodal Networks.*

Bicycling & Walking as Transportation

Bicycling and walking are two of the most efficient ways to get around. Walking is ubiquitous; nearly everyone depends on walking for at least part of every trip, if only from the parking lot to the nearest building. Although some lament that "people just can't seem to walk anywhere anymore," the reality is that, given the opportunity, many people choose to walk from one place to another, particularly if they can do so safely and conveniently. During the past fifty years, however, there is no question that Americans have become increasingly auto-dependent. This is partially by choice and partly as the result of a development pattern where individual land uses (e.g. retail, fast food, and schools) exist on the periphery of communities. Not only are edge of town land uses a long walk from where people live, but they may be a half-mile or more from the nearest sidewalk. Conditions such as these not only discourage able-bodied pedestrians, they literally prevent access for pedestrians with special needs, a group that includes elderly, children and people with disabilities.

In many parts of the world, walking and bicycling are major modes of travel and relied on for utilitarian purposes. Even in many western countries walking and bicycling constitute a major portion of all transportation trips and connections between these modes and transit are well developed. In the U.S. and Wisconsin, however, the opposite is true because cities have evolved around the automobile, making destinations and land uses so spread out that only driving can overcome such distances for many trip purposes.

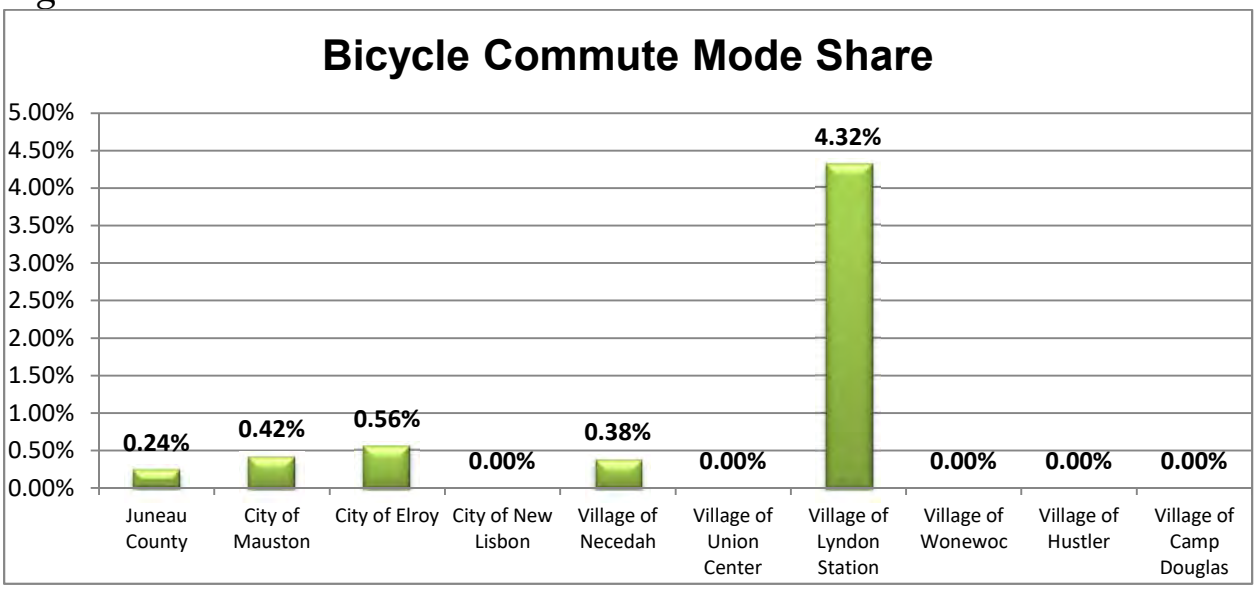
In Wisconsin, a relatively small percentage of people walk or bike to work or for work-related purposes. This is primarily because so few people live within walking or bicycling distance of where they work. When other trip purposes are considered, walking and bicycling face the same challenges. Often trips to the store, school, or even a person's favorite restaurant are just too far for there to be much potential for bicycling or walking. Or if they are close-by, they are not served well with bikeways and/or sidewalks.

Bicycling & Walking in Juneau County

Bicycling to work is not popular among residents in Juneau County, as the County had an average of 0.24 percent of residents bicycling to work according to the U.S. Census Bureau's American Community Survey, for the five year average from 2011 to 2015. The Village of Lyndon Station was the only urban municipality in Juneau County where an average of more than 1 percent of residents biked to work during this time frame. Five urban municipalities had averages of 0.0 percent during this time frame, as shown in Figure 1.

> ***About 9 percent of City of Mauston residents walked to work in 1990, and slightly less than 1 percent of Mauston residents bicycled to work in 1990.***
>
> ***–WisDOT, Bicycle Transportation Policy Plan 2020***

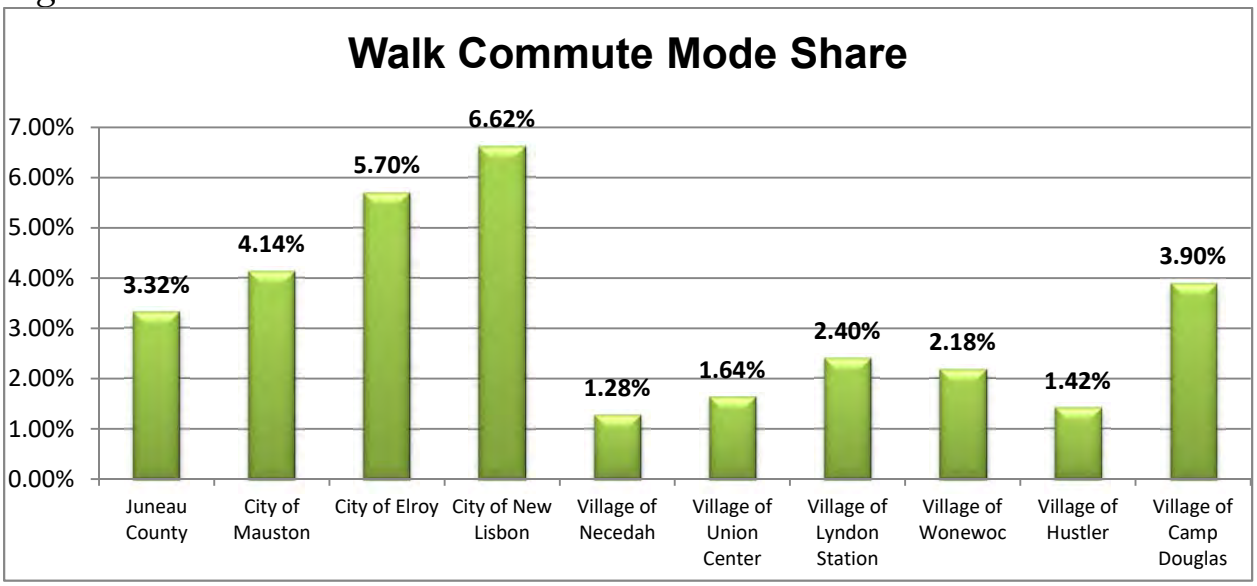
Figure 1



Source: American Community Survey 2011-2015

With 3.32 percent of Juneau County residents walking to work between 2011 and 2015, the percentage of those who walk to work is considerably higher than that of those who bicycle to work. Among cities and villages in Juneau County, the City of New Lisbon led the county with 6.62 percent of residents walking to work, while the Village of Necedah had the lowest percentage of people walk to work with 1.28 percent. Commute to work data for each urban municipality within the county can be found in Figure 2. The amount of residents who commute to work via walking in Juneau County is very similar to that of the state as a whole, as an average of 3.30 percent of Wisconsin residents commuted to work by walking during this time frame.

Figure 2



Source: American Community Survey 2011-2015

Defining Who Rides Bicycles

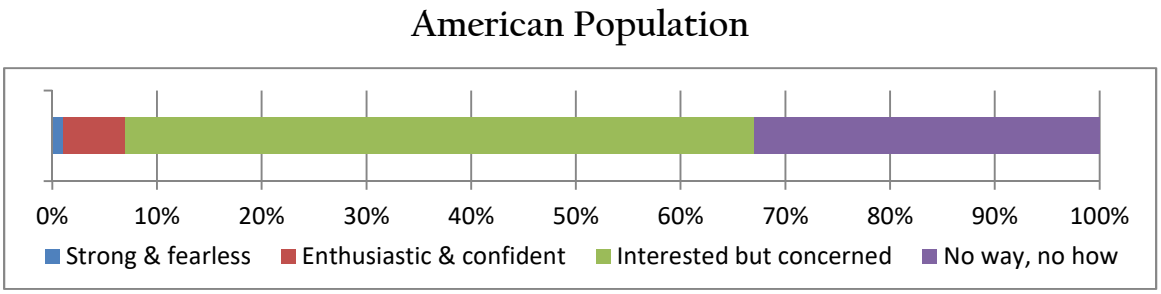
Not everyone who walks or bikes has the same ability or confidence riding. Age, experience, and bicycling ability dictate where and when individuals (or parents, in the case of children) feel comfortable to safely bicycle on roads.

Types of Cyclists

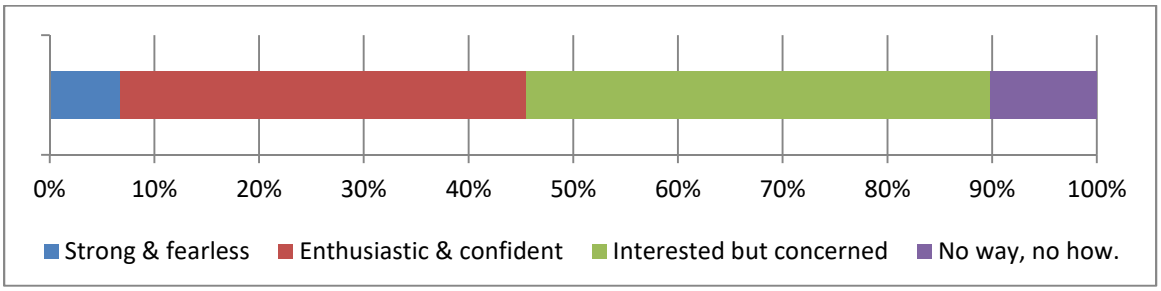
The American population can be divided into four classes of bicyclists (see Figure 3):

- 1 percent describe themselves as *"strong and fearless."*
  - These riders are confident in their abilities and will ride regardless of roadway condition, amount of traffic, or inclement weather.
- 6 percent call themselves *"enthusiastic and confident."*
  - Riders are comfortable sharing the road with motor vehicles, but they prefer to ride on separate facilities like bike lanes. May or may not ride in inclement weather.
- 60 percent are *"interested but concerned"* about their vulnerability.
  - Very few of these people regularly ride a bicycle, but they like riding. They are concerned that their route is not safe to ride, so they don't ride very often, and definitely do not ride when the weather is bad.
- 33 percent say *"no way, no-how"* to biking.
  - They are not interested in bicycling at all, not even for recreation.

Figure 3: Types of Cyclists



Source: Portland Office of Transportation



Source: 2018 Juneau County Bike & Pedestrian Survey

Age Differences

In general, young bicyclists are found in places where a park is within a mile from their home, and where development is clustered, like in a city's downtown. Some kids learn the basics of balance and control with their first bicycle by the age of four. By the time they turn 10 years old many children are allowed to ride to school if the route is safe, or to the store, or to visit friends. By the time kids reach their junior high years (7-9th grades), they often have good traffic safety skills. Bicycles are their primary means of independent mobility beyond walking.

Many high school students stop riding their bikes as infatuation with the car takes hold. But after high school, some people come back to bicycling, especially if they attend college. Beyond school, many people limit their bicycling to family outings, recreational trail riding, and within a few miles of their homes for low-impact exercise.

Some adults bicycle to work. The latest trend is that young adults are choosing where to live based upon how walkable or bikeable their commute is. Other adults may use bicycles for touring long distances. Bicycle clubs which tend to cater to people in the 25 to 50 age group often sponsor rides through rural areas.

By retirement age, many people who have not ridden for years take up bicycling again as a way to keep fit. For some older adults, the bicycle or adult tricycle may be their only means of independent travel. In many cases, these bicyclists will ride close to home or on local trails.

The challenge to increasing bicycling among the general population is making biking appeal to the big "interested but concerned" contingent.

By building a bicycle network that addresses the needs for the "interested but concerned" group, the more confident bike riders will also be served.

Types of Pedestrians

Everyone is a pedestrian at some point in their trip, whether it is from home to car, or walking to the bus stop. *There are essentially two groups of pedestrians: 1) general pedestrians who walk, and 2) pedestrians with limitation that make walking difficult or impossible.* The general pedestrian is anyone who can walk along and across streets without being limited by physical, sensory, or cognitive impairments. Other pedestrians, such as the elderly, children, people with physical or mental disabilities, and the blind may have limitations that make walking more challenging.

Since there are people with different abilities, then understanding how they need to interact with pedestrian facilities is the first step for policy makers in creating accessible facilities. The needs of disabled people and other pedestrians should determine what kinds of accessible design everyone can use. WisDOT's Pedestrian Policy Plan 2020 was used in this section to identify the types of pedestrians and their limitations for navigating the built environment.

Children

Facilities designed to separate and protect children will be welcomed by everyone else. General limitations of children include:

- One-third less peripheral vision than adults, making it difficult to see turning vehicles or those down the road;
- Less cognitive ability and experience to judge speed and distance, making safe crossings more difficult;
- Lower auditory development makes it difficult to localize the direction of vehicle sounds;
- Overconfidence in their judgements may result in poor decisions on crossing timing;
- Inability to read or comprehend warning signs, traffic signals, and directional aids;
- Inexperience dealing with complex traffic situations results in poor decisions; and
- No sense of fear.

> ***Nearly one-fourth of Wisconsinites are younger than 15 years of age. Children do not develop adequate sign, thinking, and hearing abilities necessary to cross streets safely until age 10 or later.***
> ***–WisDOT, Ped. Policy Plan***

Mobility Impairments

People with mobility impairments include those who use wheelchairs, crutches, canes, walkers, orthotics, and prosthetic limbs.

Characteristics common to mobility impaired individuals include:

- Space requirements to accommodate their assistive device (for example, manual wheelchairs have an average turning radius of 5 feet and require a minimum sidewalk width of 3 feet); and
- Difficulty negotiating soft surfaces (e.g. grass, sand, or loose gravel).

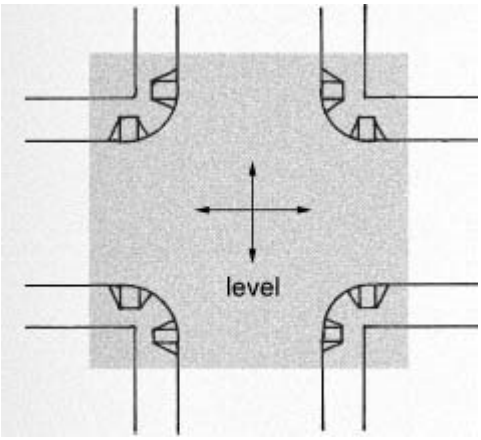
Sensory Impairments

> ***For visually impaired users, intersections are easiest to negotiate when the line of travel from the edge of the sidewalk to the opposite curb is straight and unimpeded by obstacles. –WisDOT, Ped. Policy Plan***

Sensory impairments include problems with depth perception, deafness, tunnel vision, blindness, or color blindness. Assistive technologies may include hearing aids, corrective lenses, white canes, or guide dogs. For visually impaired users, intersections are easiest to navigate when the line of travel from the edge of the sidewalk to the opposite curb is straight and unimpeded by obstacles rather than skewed as at some irregularly shaped intersections. Designing curb ramps to face the line of travel across a road, as shown in Figure 4, will greatly assist visually impaired users. Driveways pose a challenge because the hearing impaired pedestrian is unable to hear the vehicle especially when shrubs or fences block sound and view.

Figure 4: Curb ramp placement at intersection

The preferred design is to have a separate curb ramp aligned with each crossing direction to allow all pedestrians to cross at the same location. At most intersections, a pair of perpendicular curb ramps placed at 90 degree angles to one another is the optimal design for meeting these criteria.



The shaded area represents the portion of the intersection that should be level for pedestrian travel.

Source: FHWA, Designing Sidewalks and Trails for Access.

Cognitive Impairments

People with cognitive impairments have difficulty perceiving, recognizing, understanding, interpreting, and responding to information. Cognitive disabilities can hinder a person's ability to think, learn, and reason. Facility designers might consider that such a reduced capacity for sensory processing and problem solving may cause such people to experience more difficulties negotiation unfamiliar environments.

> ***Overall, level sidewalks and well-designed ramps and crossings complement people with disabilities. –WisDOT, Ped. Policy Plan***

The Benefits of Walking and Bicycling

The potential benefits of biking are significant and help to justify expenditures required to develop a comprehensive, safe, and attractive bicycle network throughout Juneau County. The public recognizes the benefits of biking beyond its recreational values on a national, State, regional, and local level. These benefits include the following factors:

- ***Transportation:*** *General transportation benefits of bicycling include a wider range of transportation choices, reduced congestion, decreased need for parking, and the implementation of safety improvements that benefit all roadway users. Biking is among the most efficient modes of transportation in regards to operation, development of facilities, and maintenance.*

- ***Health and Fitness:*** *Bicycling is among the best forms of exercise and can therefore effectively enhance the health of individuals and the communities.*

- ***Recreation:*** *Paths developed for bicycling provide recreation opportunities.*

- ***Economic:*** *Bicycling translates into tourism. WisDOT has targeted bike touring and trail riding as high potential tourism activities since the 1980s, and has recently added mountain biking to that list. The State annually distributes over 50,000 Wisconsin bike maps. Several studies of State trail-related expenditures have been conducted showing expenditures ranging from $33 to $49 per person per day.*

- ***Social:*** *Bicycling stimulates the social interaction of families and community. Trails can help provide a sense of place and a source of community pride.*

- ***Quality of Life:*** *The extent of bicycling in a community has been described as a gauge of how well it is advancing its citizens' quality of life. Streets that are busy with bicyclists are considered environments that work at a more human scale and foster a heightened sense of place. These benefits are difficult to quantify, but when asked to identify sites that they are most proud of, residents often name spots where bicycling is common, such as a popular bikeway or riverfront project.*

- ***Environmental:*** *Biking consumes no fossil fuels and does not contribute to noise or air pollution. Further, careful development of off-road facilities can protect and enhance natural resources.*

Significant overlap exists between these benefits. One benefit can often build upon another. For example, quality of life is an increasingly important factor in attracting and retaining businesses in a community, and trails are important contributors to quality of life. By enhancing the County's quality of life through the development of multimodal corridors, economic benefits may also be achieved. Another example of potential economic gain for a community would result from the health and fitness benefits of trails. The health improvement due to increased outdoor exercise can help control medical costs over the long term.

Planning Process and Community Input

5-E Approach

Education, Encouragement, Engineering, Enforcement, and Evaluation are the "E's" that combine to provide a well-rounded and complete bicycle and pedestrian support network. As the Plan was developed this approach was used to work through Advisory Group meetings. Each of the E's are briefly described below.

- **Education** – includes teaching pedestrians, bicyclists, and drivers about traffic safety and creating awareness of each other's use of the roadway; the signing of bike routes shows motorists that bicyclists may be present, and also provides wayfinding for bicyclists – just like highway signs for motorists.

- **Encouragement** – strategies and programming that are about getting people walking and bicycling; such activities will help build support for creating more walkable places, decrease traffic congestion, and improve physical health.

- **Engineering** – any physical change that improves conditions for walking or biking; some improvements include: building paths, creating safer crossings, and slowing down traffic. At the same time, engineering practices recognize the importance of a balanced roadway environment that can accommodate the needs of all modes of transportation, be it foot, bicycle, or motor vehicle.

- **Enforcement** – strategies by law enforcement, engineers, and other partners are used to deter unsafe behaviors of drivers, pedestrians, & bicyclists, and to encourage all road users to obey traffic laws and share the road safely.

- **Evaluation** – Includes monitoring the outcomes and documenting the results of the implementation of the other E's. Data collection before and after infrastructure improvements are implemented, such as user surveys and bicycle and pedestrian counts, are critical to measuring the overall effectiveness of the network.

Public Participation

The Juneau County Land, Forestry, & Parks Committee was the oversight committee assigned to provide guidance to NCWRPC throughout the planning process in 2018. The Juneau County Highway & Public Works Committee & Department, and the Juneau County Health Department also provided feedback and public participation logistics throughout the planning process. NCWRPC solicited public comments and input regarding the plan through an online survey, online mapping exercise, and two open house meetings. This plan was also guided by the input of an Advisory Group of Juneau County officials, active bicycling citizens, community leaders, and residents interested in biking and walking; and were instrumental in the ultimate assembly of the goals & objectives, and the proposed routes for this plan.

Land, Forestry, & Parks Committee Meeting (January 8, 2018: Mauston, WI)

NCWRPC provided an overview of the whole planning process and solicited input on developing the plan. Committee members noted that the process should include gathering town input. The Committee also suggested Advisory Group members to come from the Highway Department and Health Department.

Survey Results

From March 25th through August 13th of 2018 an online survey was conducted to gauge attitudes and experiences toward walking and biking among Juneau County residents. After survey completion, respondents had the option to provide more specific mapping input via the wikimap exercise. The survey link was provided on three 8.5x11 colored paper posters that were mailed twice (once in March, and once in June) to each city, village, and town government. The survey link was also available on the Juneau County Land, Forestry, & Parks Department website, and the plan website hosted by NCWRPC. **Appendix 1** of this plan has the full survey results.

There were 153 responses to the survey. Respondents were allowed to skip questions, so several questions had smaller response groups.

About 82% of respondents live in Juneau County or have a summer home in the County; and 18 people marked what zip code they live at, which were mostly close zip codes to Juneau County.

A majority of the respondents were female (59% female, 24% male, 17% did not answer). Respondents came from all age groups, with a strong showing of at least 20% in the 35 to 44 age group, the 45 to 54 age group, and the 55 to 64 age group.

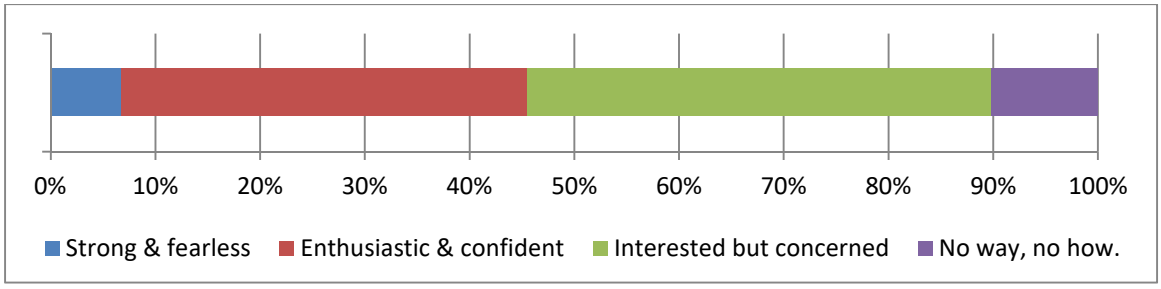
Survey Limitations

Of the 27 communities in Juneau County, there were only 4 or fewer responses from people in 23 of the communities. Several attempts were made to get higher response rates. Posters were installed on trailhead bulletin boards from the start; communities were mailed a second set of 3 posters on a different colored paper; and a couple communities were specifically contacted, since they showed interest, and a more extensive campaign of posters and contacting residents occurred, but in each of those communities less than 4 people responded – meaning even their whole board didn't take the survey.

Key findings of the survey:

- Most people drove alone to work, with a very slight dip in summer (May-October) that corresponds to the very slight increase in bicyclists and walkers.
- About 24% of respondents did not have a commute any day of the week.
- More people would bicycle if "something changed" (e.g. road improvements, or personal/equipment improvements).
- Bicyclists would travel longer distances if "something changed" (e.g. road improvement or personal/equipment improvement).
- About 28% of respondents commute to work less than 1 mile, but fewer than 8% either walk or bike to work.

Types of Cyclists among survey respondents (See Figure 3 for descriptions)



- About 60% of respondents do not wear a helmet, generally because they never have or it feels uncomfortable.

Top 3 things that prevent respondents from bicycling more in summer:

1. Some part of my trip is not safe to bike for traffic reasons (77 responses)
2. Not enough time to travel by bike (51 responses)
3. Road or path surfaces are poor for biking (45 responses)

Top 3 infrastructure improvements that would improve biking in Juneau County:

1. Off-street trails (81 responses)
2. Paved shoulders on rural roads (77 responses)
3. Bike lanes on busy streets (63 responses)

Top 3 programs or information that would help respondents bike more often:

1. Signed bicycle routes (70 responses)
2. Motorists sharing the road better (61 responses)
3. Bike maps (48 responses)

- Most people who walk use a sidewalk, shared use trail, or a rural road without a shoulder.
- The average walking distance for work or school is up to 1.5 miles.
- The average walking distance for shopping or errands is up to 1 mile.
- The average walking distance for recreation or exercise is beyond 2 miles.
- The average walking distance for social or entertainment is up to 2 miles.

Top 3 things that prevent respondents from walking more in summer:

1. Not enough time to walk (54 responses)
2. Some part of my trip is not safe to walk (41 responses)
3. Some part of my trip is not safe (22 responses)

Top 4 things that make walking in Juneau County difficult:

1. Busy rural roads/highways without paved shoulders (56 responses)
2. Sidewalks don't exist, or gaps in sidewalk. (42 responses)
3. Few off-street trails in my part of Juneau County (41 responses)
4. Motorists don't yield to pedestrians in crosswalks (37 responses)

Top 3 infrastructure improvements that would improve walking in Juneau County:

1. Off-street path/sidewalk on busy rural roads/highways (67 responses)
2. Paved shoulders on busy rural roads/highways (45 responses)
3. More or improved lighting (35 responses)

Top 3 programs or information that would help respondents walk more often:

1. Walking route maps (47 responses)
2. Motorists sharing the road better (38 responses)
3. Nothing more regarding programming or information (27 responses)
4. Some way of constant encouragement (26 responses)

Appendix 1 of this plan has more detailed survey results.

Public Input WikiMap Results

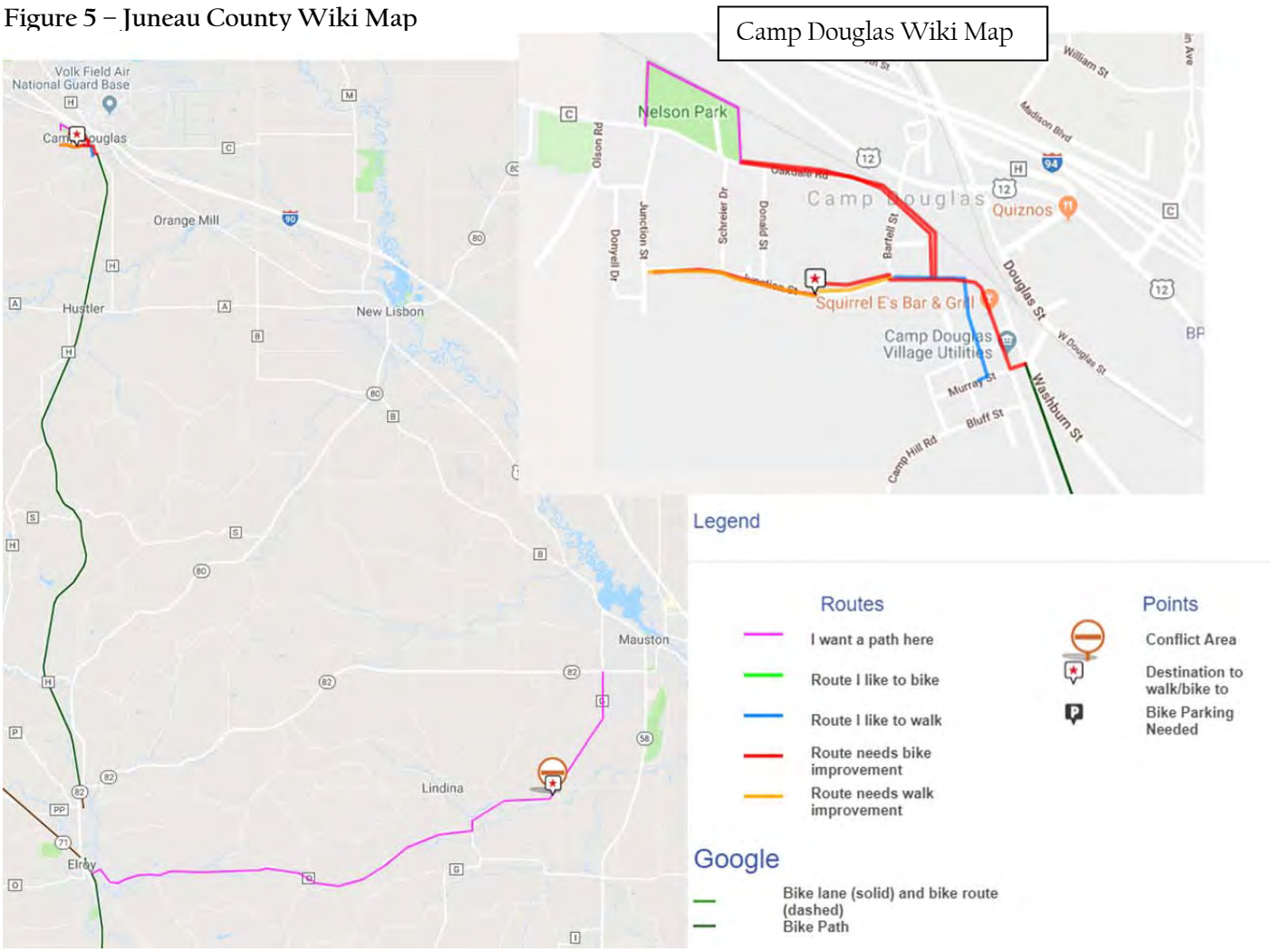
At the end of the online survey there was a thank you screen page identifying a second part for them to complete at any given time (they could save the link for later). This second part invited them to plot bicycle and pedestrian routes, or potential issues onto the open source tool called: *Wikimapping*. Results are shown in **Figure 5**.

Participants had two possible ways to contribute to the interactive exercise:

1. **Add a Route:** Participants had the option to draw five different kinds of routes relating to routes users enjoy, routes users think need improvement, or routes users want to see developed in the future. These routes are illustrated in Map 1
2. **Add a Point:** Participants were encouraged to plot points on the map indicating conflict areas, places where bicycle parking is needed, and destinations to which users can walk or take their bicycles.

The Camp Douglas area had many types of lines identified, and there is a "I want a path here" from Mauston to Elroy. Not many other responses were received. Results are shown in **Figure 5**.

Figure 5 – Juneau County Wiki Map



Advisory Group Workshops & Public Meetings

Advisory Group workshops were held in Mauston to engage with Juneau County officials, stakeholders and interested residents and discuss issues and opportunities for bicycling and walking. Advisory Group members are listed on the back of this plan's cover. Additional input came from several Juneau County Land, Forestry, & Parks Committee meetings, a Juneau County Towns Meeting, a public open house event, as well as several meetings held by local governments regarding bike and pedestrian improvements within their community.

A summary of each workshop and public meeting is provided below:

May 31, 2018 Open House was advertised in these ways: 1) posters were mailed to every town, village, and city clerk for posting; 2) Juneau County Land, Forestry, & Parks Department posted the notice on their homepage; 3) NCWRPC posted notice on the Plan's homepage; 4) an email was sent to the Advisory Group to share with everyone; and 5) the City of Mauston posted a picture/text notice on their Facebook page (see image below).

Advisory Group Workshop #1 & Public Open House (May 31, 2018; Mauston, WI)

The Juneau County Health Department set up the first Advisory Group workshop at Hatch Public Library in Mauston from 2-4 p.m. There were 11 people who attended the workshop.

The Advisory Group identified having two sets of goals and objectives – one for residents and one for visitors to Juneau County. Trip generators were identified along with establishing walking zones (e.g. urban areas, suburban town areas, and areas around camping sites). They agreed to collaborate through an online mapping program to identify routes, and their homework was to identify transportation routes in addition to recreational routes.

A public open house event was held from 5-7 p.m. in the same room at Hatch Public Library. Only 4 people from Juneau County gave their comments:

- Could use a bike route by "The Lakes."
- Is the power company road on the levee open to public walking and biking?
- We have beautiful views and roads, getting more routes would be helpful to promote it to others.
- More facilities in Elroy to promote biking and the trail. Bike shop, repairs, convenience items. The state trails are way underutilized.
- Developing a trail around Castle Rock Lake would be awesome, maybe utilizing the power company's shoreline to have a formal walking/biking path.
- The one thing I miss in the area is a Bike To Work event. Coming from Madison that is what I miss most.

Mauston's picture/text Facebook post to advertise open house event.

Town Mapping Exercise
(April – June 2018, at each town)

In spring of 2018 all Juneau County town boards were asked to participate in a mapping exercise. A map of their town and a map legend was mailed for their local expertise in identifying existing areas of walking or bicycling traffic, along with where heave truck traffic occurred, and where bike or walking pinch points existed.

Appendix 2 shows what pedestrian and bicycling input was gathered from many town perspectives.

Advisory Group Workshop #2 (June 26, 2018; Mauston, WI)

The Juneau County Health Department hosted the second Advisory Group workshop at the new Health Department building in Mauston from 2-4 p.m.

The Advisory Group reviewed and revised the first draft of transportation and recreational bike routes, and they created criteria for transportation based bike routes, including conceptual biking corridors. They got into identifying areas to improve for mountain biking trail development too. Map 6 (Existing Land Uses) was presented to assist with potential bike route development.

Juneau County Towns Unit Meeting (August 1, 2018: Mauston, WI)

NCWRPC mailed each town a letter at the end of July reminding them that the online survey was closing soon, and that NCWRPC would be at their quarterly towns meeting.

All of the towns within Juneau County hold joint quarterly meetings. At this meeting, NCWRPC overviewed the planning process, and presented draft maps showing potential bike routes and potential road improvements and solicited their input. Several towns were in attendance and each one took a poster showing draft bike rotes and potential road improvements.

Advisory Group Workshop #3 (August 14, 2018; Mauston, WI)

The Juneau County Health Department hosted the third Advisory Group workshop at the new Health Department building in Mauston from 2-4 p.m.

The Advisory Group reviewed and revised the draft transportation and recreational bike routes, in addition to reviewing the draft recommendations. Advisory Group member homework included following up with all the independent businesses that listed bike repair as something they did to verify their current level of service to the community, and seek out existing bicycle educational events that are occurring countywide.

Advisory Group Workshop #4 (September 18, 2018; Mauston, WI)

The Juneau County Health Department hosted the fourth Advisory Group workshop at the new Health Department building in Mauston from 2-4 p.m. NCWRPC teleconferenced into the meeting, but mailed poster sized maps of the draft bike routes and road improvements for their input.

The Advisory Group continued their review and revision of the bike routes and potential road improvements maps, and they reviewed and revised the recommendations too.

Highway & Public Works Committee Meeting (October 10, 2018: Mauston, WI)

NCWRPC mailed a draft poster map of proposed bike routes and proposed road improvements, and draft recommendations for their input. The Committee approved all that was presented.

Land, Forestry, & Parks Committee Meeting (October 15, 2018: Mauston, WI)

NCWRPC provided an update on how the plan was progressing. The proposed bike routes and road improvements were presented for their input, along with overall county level recommendations. The Committee provided input to keep the process moving forward, and suggested a joint meeting with the Highway & Public Works Committee when the initial draft plan is ready for presentation.

Advisory Group Workshop #5 (November 1, 2018; Mauston, WI)

The Juneau County Health Department hosted the fifth Advisory Group workshop at the new Health Department building in Mauston from 2-4 p.m. NCWRPC teleconferenced into the meeting.

The Advisory Group was advised that a draft plan would be available in January/February. Discussion continued about how the Advisory Group could be structured in 2019 to assist with implementing the plan upon completion.

Various Municipal Review Meetings (October 2018-February 2019);
(Mauston, Elroy, New Lisbon, Necedah, Camp Douglas, Lyndon Station, Union Center, & Germantown.)

NCWRPC provided various communities with a map of proposed bicycle & pedestrian facility improvements for that specific community and asked for their feedback. Each of the following communities reviewed their map at the staff level and at a meeting that was open to the public: the Cities of Mauston, Elroy, and New Lisbon; the Villages of Necedah, Camp Douglas, Lyndon Station, and Union Center; and the Town of Germantown.

Joint Land, Forestry, & Parks Committee; and Highway & Public Works Committee Meeting
(March 26, 2019: Mauston, WI)

At this special joint committee meeting, NCWRPC overviewed the planning process, and presented a summary of the multiple draft maps showing potential bike routes and potential road improvements and solicited their input. Discussion noted that the County may decide to sign some of the bike routes this summer. It was decided that NCWRPC would make another map identifying route numbers.

March 26, 2019 Open House was advertised in these ways: 1) posters were mailed to every town clerk and town chairperson, every village clerk, and city clerk; 2) Juneau County Land, Forestry, & Parks Department posted the notice on their homepage; 3) NCWRPC posted notice on the Plan's homepage; 4) two emails were sent to the Advisory Group, and to a group of citizens that signed-up for notifications about the plan; and 5) the City of Mauston and the Juneau County Economic Development Corp agreed to use the provided Facebook post.

Advisory Group Workshop #6 & Public Open House (March 26, 2019; Mauston, WI)

Many of the Advisory Group members attended and discussed next steps. About 15 people attended the open house meeting, including a town chairperson and a village trustee who both suggested changes.

Public comment received at the meeting:

- Within county parks should be short 1-2 mile walking paths for the elderly and handicapped off of a parking lot.
- Also advertise some of the county park walking paths as cross country ski trails.
- Develop hiking trail at state parks in Juneau County.
- Mark current bike routes with signs as listed in "*Juneau County Bicycle Loops, 2019 Edition*" for better identification & to warn cars there may be bikes.

Chapter 2: Background and Inventory

Knowing what currently exists provides a baseline for monitoring changes in facility use. An inventory of demographic data, roadway conditions, bicycling and walking facilities, and crash locations will build this baseline.

Demographic Analysis

Juneau County is located in Central Wisconsin. The county is bordered to the north by Wood County, to the east by Adams County, to the south by Sauk County, and to the west by Vernon County, Monroe County, and Jackson County. Juneau County is located approximately 80 miles northwest of Madison, roughly 100 miles south of Wausau, and roughly 140 miles southwest of Green Bay. The county is approximately 804 square miles in size, with an estimated population of 26,399 residents in 2016.

Juneau County contains three cities (Mauston, New Lisbon, and Elroy), and six villages (Necedah, Wonewoc, Lyndon Station, Camp Douglas, Hustler, and Union Center). A portion of the City of Wisconsin Dells is also located within Juneau County. The City of Mauston is the largest municipality in Juneau County with an estimated population of 4,398 residents in 2016. According to projections from the Wisconsin Department of Administration (WDOA), Juneau County is expected to increase by 3,126 residents between 2010 and 2030, as shown in Table 1, which displays population trends for Juneau County. The City of Elroy and the Village of Union Center are projected to decrease in population between 2010 and 2030, while the other urban areas within the county are all projected to increase in population.

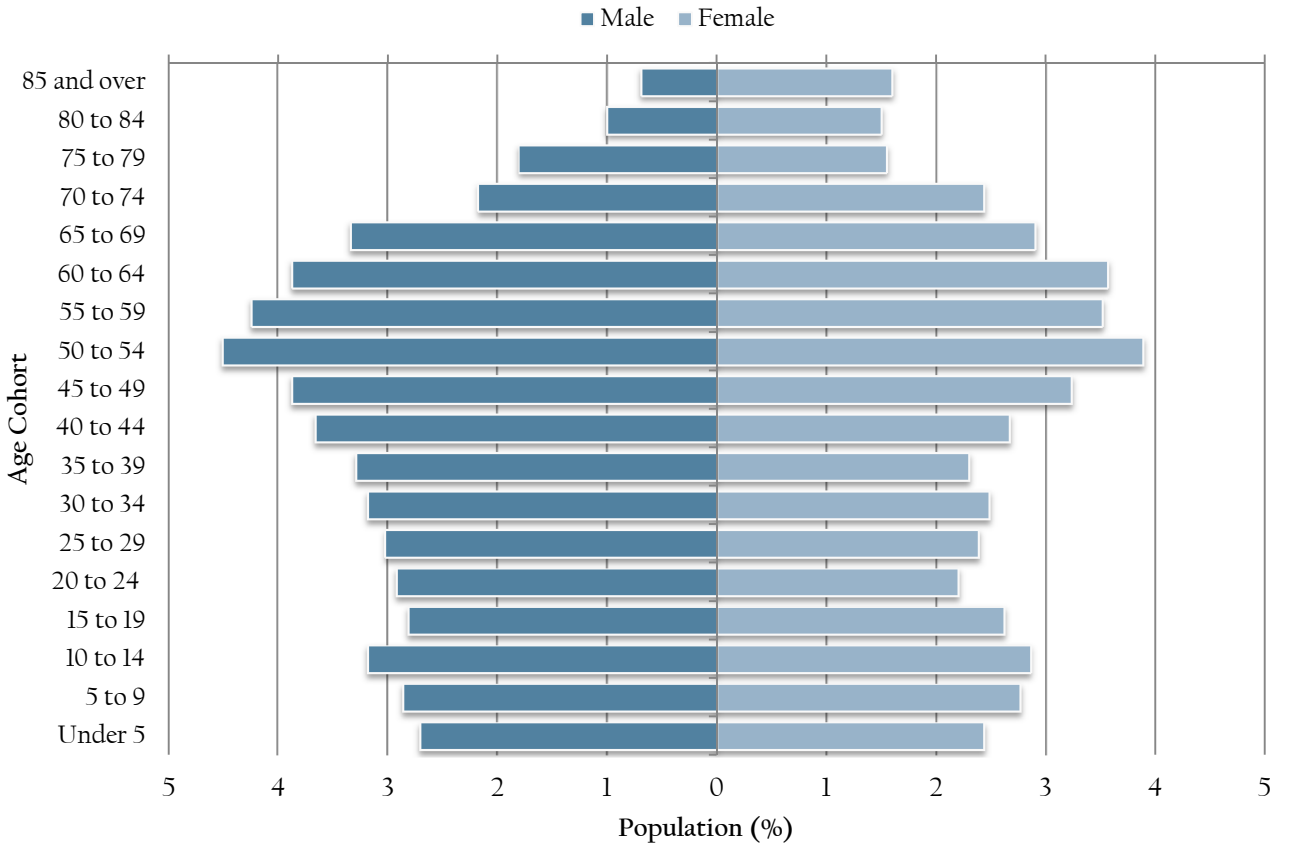
Table 1: Juneau County Population Trends, 2000-2030

	2000	2005	2010	2015	2020	2025	2030	% Change
C Mauston	3,740	4,130	4,423	4,435	4,815	5,050	5,235	18.4%
C Elroy	1,578	1,489	1,442	1,414	1,375	1,355	1,320	-8.5%
C New Lisbon	1,436	2,421	2,554	2,316	2,650	2,705	2,735	7.1%
V Camp Douglas	592	571	601	580	640	665	685	14.0%
V Hustler	113	112	194	177	215	230	245	26.3%
V Necedah	888	855	916	958	970	1,005	1,035	13.0%
V Wonewoc	834	802	816	850	815	820	820	0.5%
V Lyndon Station	458	449	500	651	515	530	540	8.0%
V Union Center	214	218	200	172	195	195	195	-2.5%
Towns	14,463	15,356	15,018	14,941	15,940	16,525	16,980	13.1%
Juneau County	24,316	26,403	26,664	26,494	28,130	29,080	29,790	11.7%

Source: U.S. Census, American Community Survey, WDOA

Walking and biking are often the only means of transportation for individuals under 16 years of age. According to 2016 estimations from American Community Survey (ACS) (Figure 6), roughly 18 percent of residents within Juneau County are 15 years old or younger. A survey conducted by the U.S Census has found that individuals most likely to walk or bike to work are in the 16 to 24 and the 55 and over age groups, with rates of walking or biking to work decreasing between 25 and 54 years of age. Approximately 41 percent of Juneau County residents are likely to walk or use bicycles for their commuting needs due to their young age or being in age groups considered more likely to bicycle or walk to work.

Figure 6: Juneau County Population Pyramid



Source: U.S. Census, 2016

Juneau County had a median age of 43.6 in 2010, with median ages ranging from 36.3 (Camp Douglas) to 49.0 (Union Center) among the county's urban municipalities. **Table 2** displays age characteristics for Juneau County and its incorporated municipalities. Approximately 41 percent of residents within Juneau County are between 25 and 54 years of age, while approximately 24 percent of residents within the County fall in age groups (16-24 and 55-65) considered as more likely to bike or walk to work. The population pyramid in Figure 6 above shows the sex breakdown of each age group for Juneau County.

Table 2: Juneau County Age Characteristics, 2010

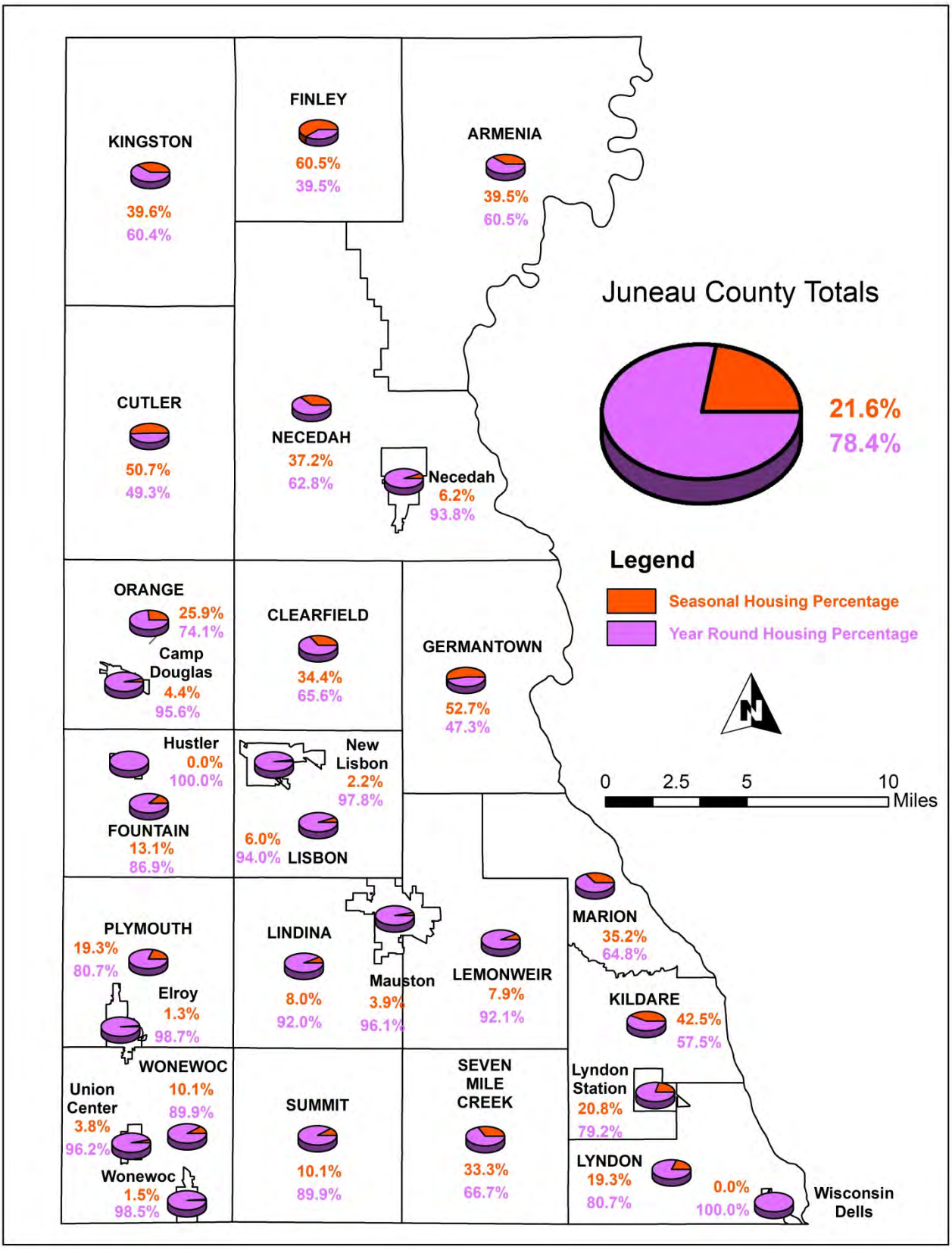
	Median Age	% Under 15*	% 25-54**	% 16-24, 55-64***
C Mauston	39.3	19%	41%	24%
C Elroy	41.6	19%	38%	24%
C New Lisbon	38.9	13%	56%	20%
V Camp Douglas	36.3	22%	42%	20%
V Hustler	46.2	19%	38%	19%
V Necedah	38.8	22%	40%	22%
V Wonewoc	40.8	21%	37%	23%
V Lyndon Station	43.8	16%	38%	27%
V Union Center	49.0	13%	40%	26%
Juneau County	43.6	17%	41%	24%

**: Percent of Individuals 15 years old or younger.*
***: Percent of individuals between 25 and 54 years of age.*
****: Percent of individuals in the 16-24 and 55-64 age groups.*
Source: U.S. Census 2010

Impact of Seasonal Housing

Bicycling as a recreational activity is common among seasonal residents, especially when scenic trails are available. Seasonal residents often travel to an area just to enjoy the outdoors and this can include bicycling from place to place or on bicycle trails. **Figure 7** shows the percentage of seasonal housing units to total housing units in each of the towns and municipalities in Juneau County. Seasonal housing rates vary from approximately 61 percent in the Town of Finley to none in the City of Wisconsin Dells and Village of Hustler. Seasonal housing rates are highest in the northern portion of the County and along the Wisconsin River in the east, while the southern portion of the County has relatively low seasonal home rates. The trend over the last 20 years has been for seasonal home owners to retire to their seasonal home, thus becoming permanent residents in their former "cottages". New permanent and seasonal homes are being built as well. These trends are both projected to increase.

Figure 7: Year Round and Seasonal Housing, 2014



Review of Existing Plans, Policies, and Regulations

This summary of existing plans, policies, and ordinances influencing bicycling and walking in Juneau County starts with regional plans and policies, and is then organized by municipality. Summaries include purpose, goals, recommendations, identification of bicycle and pedestrian facilities, and/or other key information provided in the plan.

The following plans and policies related to walking and bicycling in Juneau County were reviewed for this plan:

- North Central Wisconsin Regional Bicycle & Pedestrian Plan, 2018
- United States Bike Route System
- Ice Age Trail
- Wisconsin Bicycle Transportation Plan 2020
- State Trails Network Plan 2003
- Wisconsin State Statutes
- Juneau County Comprehensive Plan 2010-2030
- Juneau County Outdoor Recreation Plan 2017-2021
- Juneau County Community Health Improvement Plan, 2016-2019
- Elroy-Sparta State Trail Guidelines - 1973
- 400 State Trail Master Plan - 1990
- Hillsboro State Trail Memorandum of Understanding - 1994
- City of Mauston Code of Ordinances
- City of Mauston Comprehensive Plan 2016
- City of Mauston Outdoor Recreation Plan, 2017-2021
- City of Mauston Downtown Revitalization Plan 2010
- State Highway 82 Corridor Plan 2011
- City of Elroy Comprehensive Plan 2009
- City of Elroy Downtown Revitalization Plan 2013
- City of New Lisbon Code of Ordinances
- City of New Lisbon Comprehensive Plan 2009
- Village of Camp Douglas Code of Ordinances
- Village of Camp Douglas Comprehensive Plan 2009
- Village of Hustler Comprehensive Plan 2009
- Village of Lyndon Station Code of Ordinances
- Village of Lyndon Station Economic Development Plan 2015
- Village of Necedah Comprehensive Plan 2015
- Necedah Area Bicycle Facilities Network Plan - 2004
- Village of Wonewoc Comprehensive Plan - 2004

North Central Wisconsin Regional Bicycle & Pedestrian Plan, 2018

The North Central Wisconsin Regional Bicycle and Pedestrian Plan (NCWRBP) analyzes bicycle and pedestrian transportation throughout the North Central Region. The purpose of this plan is to "recommend policies, programs, and facilities to improve the safety, viability, convenience, and attractiveness of bicycling and walking for transportation." This plan also serves to "bridge the gap" between local community planning and State plans, as well as fill in gaps where improvements for bicycling and/or walking end in local community plans, to create a regional network of safe walking and bicycling.

The Federal Highway Administration defines the purpose of walking and bicycling networks in the following quote. "A complete network creates safe, comfortable, and accessible multimodal routes for people walking and bicycling. The network may be comprised of varying facilities that appeal to a range of ages and abilities, such as shared use paths, sidewalks, and bike lanes. These facilities also provide equitable transportation for people of all income levels."

The Regional Bicycle and Pedestrian Plan contains the following four region-wide goals:

- **Mobility** – *The Trail System must enhance bicyclists' ability to get around the Region including access to key destinations such as schools, parks, retail areas, and other public facilities.*
- **Functionality** – *New off-road routes, improved existing street routes, signage and marking, and route promotion must be combined to function as a system that is easy and desirable to use.*
- **Safety** – *Every bicyclist and pedestrian in the North Central Region deserves a system that is safe for travel. Improving bicyclist and pedestrian safety was a top priority of the 2004 North Central Wisconsin Regional Bicycle Facilities Plan.*
- **Connectivity** – *The Trail System must provide a seamless transportation system on multiple levels including; internally to all areas of a community; externally to outlying neighbors around the Region; and becoming a part of the bigger picture of a statewide trails network.*

Regional Corridors

Regional corridors are used to link communities with other communities. Bicycle corridors form a conceptual network representing where people want to go on an inter-community or regional basis. Implementing such connections is not always accomplished in the most direct ways, however. Traffic volumes and other safety factors, physical barriers, and the location of previously existing facilities all play a role in the ultimate determination of routes. This recommended network was identified from existing local plans, local input, suitability mapping, and incorporates inventoried existing facilities.* Regional corridors within Juneau County are described below.

**It is important to note that the Juneau County Bicycle and Pedestrian Plan takes precedent over the NCWRBP in case of conflict over recommended or suggested routes.*

Juneau County contains the following bicycle corridors,* all of which are considered to be in good condition for bicycling per WisDOT suitability:

- Camp Douglas – Hustler: 3 miles
- Camp Douglas – Necedah: 17-18 miles
- Elroy – Hustler: 10 miles
- Elroy – Union Center: 4 miles
- Hustler – New Lisbon: 5-7 miles
- Mauston – Elroy: 13 miles
- Mauston – Lyndon Station: 12 miles
- Mauston – New Lisbon: 8-10 miles
- Necedah – Necedah Wildlife Refuge: 2 miles
- Union Center – Wonewoc: 3 miles
- Wonewoc – Lyndon Station: 23-27 miles

Corridors* linking Juneau and Adams Counties include the following:

- Necedah – Adams/Friendship: 19 miles, poor condition
- Mauston – Adams/Friendship: 25 miles, poor condition
- Wisconsin Dells – Adams/Friendship: 25 miles, moderate condition
- Lyndon Station – Wisconsin Dells: 9 miles, good condition

Corridors* linking Juneau and Wood Counties include the following:

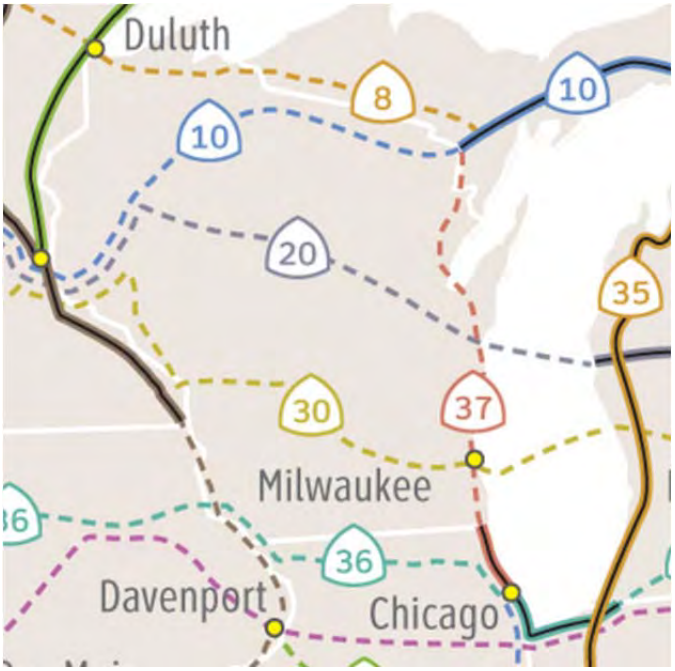
- Necedah Wildlife Refuge – Pittsville: 33 miles, moderate condition
- Necedah Wildlife Refuge – Wisconsin Rapids: 41-42 miles, moderate condition

**It is important to note that the Juneau County Bicycle and Pedestrian Plan takes precedent over the NCWRBP in case of conflict over recommended or suggested routes.*

United States Bike Route System

As of 2017, the State of Wisconsin is one of twenty-seven states without approved routes as part of the United States Bike Route System (USBR). The National Corridor Plan of October 2017, written by the Adventure Cycling Association and AASHTO (American Association of State Highway and Transportation Officials, designated one route to cross through Juneau County at some point in the future. USBR Route 30 is planned to extend east-to-west from Milwaukee to La Crosse, including 32 miles of the Elroy-Sparta State Trail. Unfortunately beyond knowing that the Elroy-Sparta State Trail will be used, no other roads have been designated. See **Figure 8** for the overall USBR Route 30 area.

Figure 8



Source: Adventure Cycling Association, 2017

Ice Age Trail

The Ice Age National Scenic Trail is one of eleven National Scenic Trails within the country, and is approximately 1,000 miles in length, spanning 30 different counties. The trail is mainly intended for pedestrian use, but does allow for bicycling in portions of the trail that share a segment with a state multi-use trail. Currently in Juneau County the Ice Age Trail is only an on-road route. The long term intention is to create a possible off-road trail on public and private lands through willing owner participation. The next step in Juneau County would be to create a local Ice Age Trail chapter, then initiate creation of a specific corridor plan. See **Figure 9** for general route.

See the Ice Age Trail Alliance website for an online map showing un-marked road routes.

Figure 9

Source: Ice Age Trail Alliance

Wisconsin Bicycle Transportation Plan 2020

The Wisconsin Bicycle Transportation Plan was adopted in December 1998. The intention of this plan is to serve as a blueprint for improving conditions for bicycling, clarify the role that the Wisconsin Department of Transportation (WisDOT) plays in bicycling transportation, and to establish policies to further integrate bicycling into the current transportation system.

The following two points serve as the primary goals of the state bicycle plan:

- *Increase levels of bicycling throughout Wisconsin, doubling the number of trips made by bicycles by the year 2010 (with additional increases achieved by 2020).*
- *Reduce crashes involving bicyclists and other motor vehicles by at least ten percent by the year 2010 (with additional increases achieved by 2020).*

Objectives of this plan include planning and designing new and improved transportation facilities to accommodate and encourage use by bicyclists, expanding and improving a statewide network of safe and convenient routes for bicycle transportation, expanding the range of bicycle education activities, improving enforcement of laws to prevent dangerous and illegal behavior by motorists and bicyclists, and encouraging more bicycle trips by promoting the acceptance and usefulness of bicycling.

Table 1 in this WisDOT plan notes that about 9 percent of City of Mauston residents walked to work in 1990 and slightly less than 1 percent of residents bicycled to work in 1990.

The state bicycle plan generalizes the benefits of bicycling into the following eight categories: health, transportation, safety, environmental, transportation choice, efficiency, economic, and quality of life. When weighing the health benefits of bicycling against the health risks (crash potential) of bicycling, the *National Bicycling and Walking Study* states that "*Once people are drawn to greater use of these modes, their numbers may reinforce their greater safety on the roadway as they become more fully accepted as legitimate users of the transportation system,*" meaning that increasing numbers of bicyclists could lower the likelihood of being involved in a bicycle crash, due to increased awareness and acceptance of bicyclists on the road.

The 1987 study *Safety Effects of Cross-Section Design for Two-Lane Roads* found that adding four-foot wide paved shoulders on rural two-lane highways reduces occurrences of bicycle-motor vehicle crashes by 29 percent, and the addition of 8-foot wide paved shoulders reduces these crashes by 49 percent.

State Trails Network Plan 2003

This 2003 document clarifies the Wisconsin Department of Natural Resources (WDNR) role and strategy in the provision of all types of trails. The plan identifies a series of potential trail corridors that would link existing trails, public lands, natural features, and communities. The preservation of transportation corridors, especially old rail lines, is discussed as a very important strategy for creating recreational corridors. The following segment of the statewide trail network involves Juneau County.

Segment 53 – Wyeville to Mauston to Adams County Highway Z

This potential trail corridor is a combination of rail line and highway right-of-way that links via Juneau County's Omaha Trail to the Elroy-Sparta and "400" State Trails in Elroy. Rail line would provide the linkage from Wyeville to Mauston, and various roadways from Mauston east to the Wisconsin River.

Wisconsin State Statutes

The Wisconsin State Statutes serve as laws applicable throughout the State of Wisconsin. An overview of the statutes that relate to bicycling and walking is provided below:

346.25: Crossing at Place other than Crosswalk

Under this statute, every pedestrian, bicyclist, or rider of any electric personal assistive mobility device crossing a roadway at any point other than within a marked or unmarked crosswalk shall yield the right-of-way to all vehicles upon the roadway.

346.28: Pedestrians to Walk on Left Side of Highway; drivers to yield on sidewalks

Under this statute, every pedestrian traveling along and upon a highway other than upon a sidewalk shall travel on and along the left side of the highway and upon meeting a vehicles shall, if practicable, move to the extreme outer limit of the traveled portion of the highway. Operators of vehicles shall yield the right-of-way to pedestrians, personal delivery devices, bicycles, and riders of electric personal assistive mobility devices on sidewalks as required by s. 346.47.

346.79: Special Rules Applicable to Bicycles

This statute refers to the special rules bicyclists must abide by whenever operating upon a highway, bicycle lane or bicycle

"A person operating a bicycle shall not ride other than upon or astride a permanent and regular seat attached thereto

- Except as provided, no bicycle may be used to carry or transport more persons at one time than the number for which it is designed.
- In addition to the operator, a bicycle otherwise designed to carry only the operator may be used to carry or transport a child seated in an auxiliary child's seat or trailer designed for attachment to a bicycle if the seat or trailer is securely attached to the bicycle according to the directions of the manufacturer of the seat or trailer."

"No person operating a bicycle shall carry any package, bundle, or article which prevents the operator from keeping at least one hand upon the handle bars"

"No person riding a bicycle shall attach himself or herself or his or her bicycle to any vehicle upon a roadway"

"No person may ride a moped or motor bicycle with the power unit in operation upon a bicycle way"

346.80: Riding Bicycle or electric personal assistive mobility device on Roadway

This statute refers to the rules that bicyclists must adhere to when riding upon a roadway.

"In this section, 'substandard width lane' means a lane that is too narrow for a bicycle or electric personal assistive mobility device and a motor vehicle to travel safely side-by-side within the lane"

"Any person operating a bicycle or electric personal assistive mobility device upon a roadway at less than the normal speed of traffic at the time and place under the conditions then existing shall ride as close as practicable to the right-hand edge or curb of the unobstructed traveled roadway, including operators who are riding two or more abreast where permitted, except when:"

- "When overtaking and passing another vehicle proceeding in the same direction"
- "When preparing for a left turn or U-turn at an intersection or a left turn into a private road or driveway"
- "When reasonably necessary to avoid unsafe conditions, including fixed or moving objects, parked or moving vehicles, pedestrians, animals, surface hazards, or substandard width lanes that make it unsafe to ride along the right-hand edge or curb"

"Any person operating a bicycle or electric personal assistive mobility device upon a one-way highway having two or more lanes available for traffic may ride as near the left-hand edge or curb of the roadway as practicable"

"Any person operating a bicycle or electric personal assistive mobility device upon a roadway shall exercise due care when passing a standing or parked vehicle or a vehicle proceeding in the same direction and, when passing a standing or parked vehicle that is a school bus that is not displaying flashing red warning lights or a motor bus, shall allow a minimum of three feet between the bicycle or electric personal assistive mobility device and the vehicle"

"Persons riding bicycles or electric personal assistive mobility devices upon a roadway may ride two abreast if such operation does not impede the normal and reasonable movement of traffic. Bicycle or electric personal assistive mobility devices operators riding two abreast on a two-lane or more roadway shall ride within a single lane"

"Persons riding bicycles upon a roadway may not ride more than two abreast except upon any path, trail, lane or other way set aside for the exclusive use of bicycles and personal assistive mobility devices"

"No person may operate a bicycle, electric personal assistive mobility device, or moped upon a roadway where a sign is erected indicating that bicycle, electric personal assistive mobility device, or moped riding is prohibited."

"Every rider of a bicycle or electric personal assistive mobility device shall, upon entering a highway, yield, and every personal delivery device operator shall ensure that the personal delivery device, upon entering on a highway, yield the right-of-way to motor vehicles."

346.803: Riding Bicycle or electric personal assistive mobility device on Bicycle Way

This statute refers to the rules that bicyclists must adhere to when riding upon a bicycle way.

"Every person operating a bicycle or electric personal assistive mobility device upon a bicycle way shall:

- Exercise due care and give an audible signal when passing a bicycle or electric personal assistive mobility device rider or a pedestrian proceeding in the same direction.
- Obey each traffic signal or sign facing a roadway which runs parallel and adjacent to bicycle way."

"Every person operating a bicycle or electric personal assistive mobility device upon a bicycle way open to two-way traffic shall ride on the right side of the bicycle way"

"Every operator of a bicycle or electric personal assistive mobility device entering a bicycle way shall yield the right-of-way to all bicycles and pedestrians in the bicycle way"

346.804: Riding Bicycle on a Sidewalk

When riding upon a sidewalk permitted for bicycle use by local authorities, this statute requires every person operating a bicycle upon a sidewalk shall yield the right-of-way to any pedestrian and shall exercise due care and give an audible signal when passing a bicycle or electric personal assistive mobility device rider or a pedestrian proceeding in the same direction.

347.489: Lamps & other Equipment on Bicycles and other vehicles and devices

This statute refers to bicycle equipment requires across the State of Wisconsin.

No person may operate a bicycle, motor bicycle, personal delivery device, or electric personal assistive mobility device upon a highway, sidewalk, bicycle lane, or bicycle way during hours of darkness unless the bicycle, motor bicycle, personal delivery device, or electric personal assistive mobility device is equipped with or, with respect to a bicycle or motor bicycle, the operator is wearing, a lamp emitting a white light visible from a distance of at least 500 feet to the front of the bicycle, motor bicycle, personal delivery device, or electric personal assistive mobility device. A bicycle, motor bicycle, personal delivery device, or electric personal assistive mobility device shall also be equipped with a red reflector that has a diameter of at least 2 inches of surface area or, with respect to an electric personal assistive mobility device, that is a strip of reflective tape that has at least 2 square inches of surface area, on the rear so mounted and maintained as to be visible from all distances from 50 to 500 feet to the rear when directly in front of lawful upper beams of headlamps on a motor vehicle. A lamp emitting a steady or flashing red light visible from a distance of 500 feet to the rear may be used in lieu of the red reflector.

No person may operate a bicycle, motor bicycle, or electric personal assistive mobility device upon a highway, bicycle lane, or bicycle way unless it is equipped with a braking system in good working condition, and can adequately control the movement of and to stop the bicycle, motor bicycle, or electric personal assistive mobility device whenever necessary.

No bicycle, motor bicycle, or electric personal assistive mobility device may be equipped with nor may any person riding upon a bicycle, motor bicycle, or electric personal assistive mobility device use any sire or compression whistle.

346.80: Riding Bicycle on Roadway

This statute refers to the rules that bicyclists must adhere to when riding upon a roadway.

"In this section, 'substandard width lane' means a lane that is too narrow for a bicycle or electric personal assistive mobility device and a motor vehicle to travel safely side-by-side within the lane"

"Any person operating a bicycle upon a roadway at less than the normal speed of traffic at the time and place under the conditions then existing shall ride as close as practicable to the right-hand edge or curb of the unobstructed traveled roadway, including operators who are riding two or more abreast where permitted, except when:"

- "When overtaking and passing another vehicle proceeding in the same direction"
- "When preparing for a left turn or U-turn at an intersection or a left turn into a private road or driveway"
- "When reasonably necessary to avoid unsafe conditions, including fixed or moving objects, parked or moving vehicles, pedestrians, animals, surface hazards, or substandard width lanes that make it unsafe to ride along the right-hand edge or curb"

"Any person operating a bicycle upon a one-way highway having two or more lanes available for traffic may ride as near the left-hand edge or curb of the roadway as practicable"

"Any person operating a bicycle upon a roadway shall exercise due care when passing a standing or parked vehicle or a vehicle proceeding in the same direction and, when passing a standing or parked vehicle that is a school bus that is not displaying flashing red warning lights or a motor bus, shall allow a minimum of three feet between the bicycle and the other vehicle"

"Persons riding bicycles upon a roadway may ride two abreast if such operation does not impede the normal and reasonable

movement of traffic. Bicycle operators riding two abreast on a two-lane or more roadway shall ride within a single lane"

"Persons riding bicycles upon a roadway may not ride more than two abreast except upon any path, trail, lane or other way set aside for the exclusive use of bicycles"

"No person may operate a bicycle upon a roadway where a sign is erected indicating that bicycle riding is prohibited"

"Every rider of a bicycle shall, upon entering a highway, yield the right-of-way to motor vehicles."

346.803: Riding Bicycle on Bicycle Way

This statute refers to the rules that bicyclists must adhere to when riding upon a bicycle way.

"Every person operating a bicycle upon a bicycle way shall:

- Exercise due care and give an audible signal when passing a bicycle or a pedestrian proceeding in the same direction.
- Obey each traffic signal or sign facing a roadway which runs parallel and adjacent to bicycle way."

"Every person operating a bicycle upon a bicycle way open to two-way traffic shall ride on the right-hand side of the bicycle way"

"Every operator of a bicycle entering a bicycle way shall yield the right-of-way to all bicycles and pedestrians in the bicycle way"

346.803: Riding Bicycle on a Sidewalk

When riding upon a sidewalk permitted for bicycle use by local authorities, this statute requires bicyclists to yield the right-of-way to any pedestrian and to exercise due care and give an audible signal when passing a bicycle or pedestrian proceeding in the same direction.

347.489: Lamps & other Equipment on Bicycles

This statute refers to bicycle equipment requires across the State of Wisconsin.

When operating a bicycle at night, all bicycles must be equipped with a light that emits a white light visible from a distance of at least 500 feet to the front of the bicycle; and a red reflector with a diameter of at least two inches in the rear that is visible from distances between 50-500 feet.

No person may operate a bicycle unless the bicycle is equipped with a braking system in good working condition, and can adequately control and stop the bicycle.

Personal delivery service bicycles must be equipped with a plate or marker that is clearly visible and identifies the name and contact information of the delivery service.

In order to ride on a sidewalk, personal delivery services are required to be equipped with brakes capable of completely stopping the bicycle.

Sirens and compression whistles are prohibited on all bicycles.

Juneau County

Juneau County has several plans and policies in place directly relating to walking and bicycling. The County also has numerous facilities that provide opportunities for walking and bicycling. Below is an overview of the walking and bicycling policies the County has in place.

Juneau County Comprehensive Plan 2010-2030

Goals - Transportation

Transportation goals and objectives related to walking and bicycling in the Juneau County Comprehensive plan include creating a network of non-vehicular and multi-use trails, accounting for the needs of bicyclists and pedestrians for road issues such as surface type, safety, and design, and reviewing improvement projects based on their conditions for bicycle and pedestrian travel.

Transportation Element

Bicycling and walking are covered in the Bicycle and Pedestrian Facilities section of the Transportation Element. Juneau County has several highways considered as having the best conditions for bicycling including portions of State Highways 80, 58, and US Highway 12, as well as numerous County Highways. The County contains four major off-road bicycle trails; Elroy-Sparta State Trail, "400" State Trail, Hillsboro State Trail, and the Omaha Trail. All four of these off-road trails connect to the City of Elroy. This section notes that the Elroy-Sparta State Trail was the first rails-to-trails conversion, the conversion of abandoned railroad tracks into biking or hiking trails, in the United States.

Juneau County Outdoor Recreation Plan 2017-2021

The primary purpose of the County's Outdoor Recreation Plan is to "provide continued direction toward meeting the current and future recreation needs of the county. This is accomplished through an inventory and analysis of outdoor recreational facilities, and the establishment of recommendations to meet identified needs."

Recommendations and capital improvements related to walking and bicycling include:

- Creation of a bicycle trail that links Mauston to the Elroy-Sparta State Trail.
- Develop a permanent trail segment connecting Omaha Trail to 400 Trail.
- Resurface sections of the Omaha Trail.
- Extending Omaha Trail into Monroe County along the railroad corridor from Camp Douglas.
- In Mauston – Extending Gateway Avenue Multi-use Path along STH 82 to Woodside Ranch.
- In Elroy – Creating a connector trail from City of Elroy Park to the "400" State Trail.
- In Elroy – Provide pavement markings for Elroy-Sparta State Trail, "400" State Trail, and Omaha Trail.

- In Elroy – creating a walking trail around City Park connecting "400" State Trail to campsites, swimming pool, and Baraboo River.
- Creating a bicycle trail on 50 acres within the Village of Camp Douglas.

Juneau County Community Health Improvement Plan, 2016-2019

The 2016-2019 Community Health Improvement Plan provides the framework for improving the health of Juneau County. It also helps to create a shared vision between the Health Department and community partners so that together we can create positive, measureable change in our communities. To better meet the needs of the community, the Juneau County Community Health Improvement Plan was developed in collaboration with the Central Wisconsin Health Partnership (CWHP), which covers a six-county region. The CWHP worked together to complete the 2016 Community Health Assessment and as a result, identified key areas that needed improvement in all six counties. Addressing these health priority areas in a regional Community Health Improvement Plan allows for better sharing of ideas and resources to determine best practices for improving the health of the individual counties and the entire region.

Juneau County specific priority areas: Tobacco, Obesity, Nutrition & Physical Activity, and HiAP (Health in All Policies), will be addressed primarily at the county level through the Health Department and community partners and organizations. The following goals relate to this bike and pedestrian plan:

Goal 1: Increase physical activity and improve healthy nutrition in Juneau County residents.

Goal 2: Incorporate Health in All Policies (HiAP) within Juneau County.

Elroy-Sparta State Trail Guidelines (Updated 1973)

In 1965, approval of the first rails-to-trails conversion was given for an abandoned railroad corridor between the Cities of Elroy and Sparta. The Elroy-Sparta State Trail was designated as a National Recreation Trail in 1971. Guideline concepts in this plan sought to limit incompatible development, such as commercial developments, through zoning. Original guidelines allowed for bicycling, hiking, and snowmobiling only, usage of other motorized vehicles on the trail was prohibited. Trail protection strategies included refusal to grant access to any development from DNR land, acquiring 200-foot buffer strips on each side of the trail wherever possible and zoning these strips as agricultural land, and taking easements on each side of the trail.

400 State Trail Master Plan - 1990

In 1990, Juneau County, Sauk County, and the Wisconsin Department of Natural Resources prepared a master plan to develop the 400 State Trail. The trail spans a total of 22 miles, starting in Reedsburg (Sauk County) and runs northwest to Elroy. The overall goal of this trail is to "provide a 22-mile state recreation area trail that will accommodate a continuation of existing uses presently provided on the Elroy-Sparta State Trail (bicycling, hiking, cross country skiing, and snowmobiling)." Objectives

include providing trail opportunities for hikers and providing a trail with necessary improvements that will be able to accommodate 50,000 bicyclists annually.

Hillsboro State Trail Memorandum of Understanding - 1994

In 1994, Juneau County, Vernon County, the City of Hillsboro, and the Wisconsin Department of Natural resources entered an agreement to acquire 4.25 miles of abandoned railroad to develop the Hillsboro State Trail. Approximately 2.75 miles of the trail is located in Juneau County.

City of Mauston

The City of Mauston has several plans and policies in place directly relating to walking and bicycling in the City. The City also has numerous facilities that provide opportunities for walking and bicycling. Below is an overview of the walking and bicycling policies the City has in place.

Code of Ordinances

The City of Mauston Code of Ordinances contains the following items that are relevant to walking and bicycling within Mauston.

Streets, Sidewalks, and Other Public Places

Sidewalks are covered by Chapter 32 – Streets, Sidewalks, and Other Public Places of the City of Mauston Code of Ordinances. Specifications are not listed for standard minimum requirements for sidewalks, but the current federal standard for minimum sidewalk width is 5 feet. Section 32.5 requires abutting landowners to remove any snow or ice within 24 hours of a snowfall, and failure to do so will result in a fine. Sidewalks are not required in the City of Mauston Subdivision Ordinance or Zoning Ordinance.

Traffic and Vehicles

Bicycles are covered in Chapter 36 of the Code of Ordinances. Under Section 36-143, bicyclists are subject to all of the provisions that apply to operators of other vehicles. Section 36-144 states that only persons under the age of 10 may ride their bicycle on public sidewalks, and prohibits stunt riding, racing, or endurance contests on city streets unless given prior permission by the police department.

City of Mauston Comprehensive Plan 2016

Transportation Element

The Transportation element of the Comprehensive Plan notes that the City of Mauston is considered as a "somewhat walkable" community, meaning that residents can complete errands via walking. It is also noted that the City does not contain much of a bicycle route/trail network, and that many respondents

to a survey requested the creation of more bicycle lanes/paths. The closest off-road bicycle trail network is in the City of Elroy, 12 miles west of Mauston.

Goals

Transportation goals relating to walking and bicycling mainly focus on increasing opportunities for non-motorized travel. This is accomplished by creating new bicycle and pedestrian routes within the city, requiring all new developments to include sidewalks, participating in the Safe Routes to School Program, and connecting Mauston to the numerous trails in the City of Elroy.

City of Mauston Outdoor Recreational Plan 2017-2021

The City of Mauston Outdoor Recreational Plan identifies parks and other facilities within the City that provide walking and bicycling opportunities. Existing bicycling and walking trails in the City include Gateway Avenue Multi-Use Path and the Riverwalk along the Lemonweir River.

The following goals and objectives of the Outdoor Recreation Plan relate to bicycling and walking.

- Goal 3: Become a more walkable and bicycle friendly community
    - Objective 1: Improve major road crossings where too many conflicts occur.
    - Objective 2: Consider adding off-street paths as a scenic way to access major destinations.
    - Objective 3: Review all main streets for their ability to accommodate bikes.
    - Objective 4: Consider requiring bike parking at all destinations; including at city parks.
    - Objective 5: Connect Mauston to Elroy by off-road path.

Recommendations in the City of Mauston Outdoor Recreation Plan related to walking and bicycling include installing bike racks in each park, expanding Riverside Park and Trail, and increasing sidewalk connections in Mauston by reviewing where sidewalks are currently missing in the City, and prioritizing the installation of sidewalks in these locations. Capital improvements relating to bicycling and walking include improving existing trails at Mile Bluff Park, developing a trail at Attewell Pond, and developing a Maughs Creek Trail.

City of Mauston Downtown Revitalization Plan 2010

The Downtown Revitalization Plan notes that the City's downtown lacks unified pedestrian amenities. Objective 2 of the plan notes that pedestrian comfort in the downtown district is inadequate. The Streetscape Plan Chapter of the plan notes that current infrastructure caters to automobiles at the expense of pedestrians, and that many sidewalks within the city are in poor condition. A goal of the plan is to increase bicycle and pedestrian traffic. Recommendations include adding walking paths at Courthouse Square, constructing a new sidewalk on Mansion Street, building crosswalks on State Street, and reconstructing the following roadways to allow for better sidewalk conditions; Mansion Street, Union Street, Beach Street, and State Street.

State Highway 82 Corridor Plan 2011

One of the objectives of this plan is to create a pedestrian and bicycle network in the City of Mauston that connects the downtown, surrounding neighborhoods, and the city's growing business park. This plan inventories existing sidewalks and bicycle facilities, and found that there currently are no bicycle facilities, and several segments of missing sidewalks within the STH 82 Corridor. Recommendations in the plan include increasing sidewalk width at Union Street, designating McEvoy Street and Jefferson Street as alternative bike routes, building a sidewalk along Lincoln Street from STH 82 to McEvoy Street, building a multi-use path from McEvoy Street to Powers Avenue, completing the sidewalk network along STH 82 from Kennedy Street to Powers Avenue, developing bicycle and pedestrian facilities in the Business Park east of Interstate 90 & 94, and building a pedestrian bridge along Lincoln Street across the Lemonweir River that connects STH 82 to downtown Mauston.

City of Elroy

The City of Elroy currently has two plans in place directly relating to walking and bicycling in the City. The City is also a trailhead for all three rails-to-trails in Juneau County – Elroy-Sparta, 400, and Omaha. Below is an overview of the walking and bicycling plans the City has in place:

City of Elroy Comprehensive Plan 2009

Transportation Element

The Transportation Element of the Comprehensive Plan notes that Elroy provides some of the best bicycle trail opportunities in the State of Wisconsin. The City is connected to four recreation trails that have undergone a rails-to-trails conversion including the Elroy-Sparta State Trail, 400 State Trail, Hillsboro State Trail, and Omaha County Trail. Map 4 of the Comprehensive Plan highlights these trails. The Elroy-Sparta State Trail is considered to be the first rails-to-trails conversion in the entire United States. All roads within the city are available for pedestrian travel; most main streets in the City have sidewalks, allowing for walkable access throughout the City. One transportation goal is to cooperate with surrounding towns to create a connection between the existing trail system in Elroy and nearby parks.

City of Elroy Downtown Revitalization Plan 2013

Physical infrastructure enhancements recommended in this plan seek to improve bike and pedestrian connections between the state trail system, campground, and the downtown area. Proposed improvements involving bicycling and walking include increasing signage near the library, improving travel between the library and museum, increasing and improving the Elroy-Sparta Trail crossing at Highway 80/82 and Main St. to make it feel more like a bicycle trail.

City of New Lisbon

Code of Ordinances

The City of New Lisbon Code of Ordinances includes the following items that are relevant to bicycling and walking within the City.

Bicycles and Play Vehicles

Bicycles are covered in Chapter 229 of the Code of Ordinances. Section 229-2 prohibits all persons from operating a bicycle if that bicycle does not meet Wisconsin State Statute 347.489 equipment standards.

Under Section 229-3, bicyclists are granted the same rights and responsibilities applicable to a motorized vehicle driver when driving on roadways. Section 229-5 covers general regulations for bicycle. Generally, these regulations fall under either requirements or actions that are prohibited. Below are overviews of required and prohibited actions.

Required Actions

- Bicyclists must ride as close to the right edge of the roadway as possible on two-way streets, and as close as possible to either edge of the roadway on one-way streets.
- Bicyclists must ride in a single-file line
- When provided with a bicycle path, bicyclists shall use the path instead of the roadway
- When riding in an on-road bicycle lane, bicyclists must ride in the same direction as vehicles in the nearest lane of roadway.
- Bicyclists are required to take care and give audible signals when passing other bicyclists travelling in the same direction
- When entering a bike lane/path, bicyclists are required to yield right-of-way to all bicycles in the bike lane, when exiting a bike lane/path, bicyclists are required to yield right-of-way to all motorized vehicles and pedestrians
- Residents of the City of New Lisbon and riders who frequently ride in the city are required to register their bicycles and attach a registration tag to their bicycle in order to ride on any street, alley or highway, or any public path set aside for bicycle use.

Prohibited Actions

- Bicyclists shall not carry more persons than their bicycle is designed to handle.
- While riding, carrying packages, bundles, or articles that prevents the safe operation of a bicycle is prohibited.
- Removing both hands or feet from the handlebars/pedals is prohibited.
- Parking in front of or adjacent to commercial establishments.

Streets and Sidewalks

Sidewalks are covered by Chapter 435 of the Code of Ordinances. Standards for the construction of sidewalks include a 5-foot minimum width in residential walks, and shall be at least 4 inches thick, with a 6-inch minimum depth at driveway approaches. The minimum quantity of cement per cubic yard

is six sacks of 94 pounds each. Adjacent landowners are responsible for 100% of the cost for existing sidewalks to be repaired or undergo reconstruction. Sidewalks must be cleared of any ice or snow within 24 hours of a snowfall, failure to do so will result in a fee charged to the adjacent landowner.

City of New Lisbon Comprehensive Plan 2009

Transportation Element

The Transportation Element notes that there is an extensive system of recreational trails within Juneau County, including an off-road trail that runs through New Lisbon between Mauston and Camp Douglas. All roads within the City are available for pedestrian travel, and walking within the city is generally safe. Transportation Goals that relate to bicycling and walking include the following.

- Goal 1: Encourage neighborhood designs that support a range of transportation choices
    - Objective 1: Improve and expand pedestrian walkways and non-motorized vehicle pathways linking parks, commercial, residential, natural areas within the city, and also network with the non-motorized trail system of the county at large.

Village of Camp Douglas

Code of Ordinances

Traffic – Bicycles

Bicycling is covered by Subchapter 4 of Chapter 14 of the Code of Ordinances. All bicyclists in the Village are subject to the same provisions of the Wisconsin State Statutes. Individuals under the age of 10 are allowed to bicycle on all public sidewalks within the village except sidewalks located in the General Business District. Bicyclists are prohibited from attaching coasters, roller skates, sleds, wagons, toboggans, or any other apparatus not specifically designed for attachment to a bicycle. Racing, attempting tricks, and endurance contests are prohibited as well, unless given prior permission from the Village.

Village of Camp Douglas Comprehensive Plan 2009

Transportation Element

All roads within the Village are available for bicycle travel except for I-90/94. The Village of Camp Douglas serves as the trailhead for the Omaha County Trail, a 13 mile trail that travels to the City of Elroy providing access to the 400 State Trail, Hillsboro State Trail, and the Elroy-Sparta State Trail. Like bicycling, all roads in the Village except I-90/94 are accessible for pedestrians. Only some roads within the Village currently have sidewalks, but sidewalks do exist in most residential areas of the Village. The Transportation Element has the following objective that relates to bicycling and walking:

"improve and expand pedestrian walkways and non-motorized vehicle pathways linking parks, commercial, residential, natural areas within the village and also link to the Omaha Trail and the trail system of the county at large."

Village of Hustler

Village of Hustler Comprehensive Plan 2009

Transportation Element

All roads within the Village are available for pedestrian and bicycle travel. Sidewalks exist in most residential areas of the Village. The Wisconsin Department of Transportation has deemed all county highways within the Village as roads that are best suited for bicycling. CTH A just east of the Village was deemed as having moderate conditions for bicycle suitability. The Omaha County Trail passes through the Village, traveling north to Camp Douglas and south to Elroy. This trail provides access to 400 State Trail, Hillsboro State Trail, and Elroy-Sparta State Trail in Elroy. The Transportation goal that relates to bicycling and walking include the following:

- Goal 1: Encourage neighborhood designs that support a range of transportation choices.
    - Objective 1: Improve and expand pedestrian walkways and non-motorized vehicle pathways linking parks, commercial, residential, natural areas within the city, and also network with the non-motorized trail system of the county at large.

Village of Lyndon Station

Code of Ordinances

The Village of Lyndon Station Code of Ordinances contains a few items regarding bicycling and walking.

Bicycles and Play Vehicles

The operation of bicycles that do not comply with Wisconsin State Statute 347-489 is prohibited. Bicycles are prohibited in the Veterans Memorial Park.

Snow Removal

Sidewalks within the Village are required to be clear of any ice or snow within 24 hours of a snow fall. Failure to remove snow or ice within this time will result in a fee assessed to the adjacent landowner/occupant.

Village of Lyndon Station Economic Development Plan 2015

One strategy of the Village of Lyndon Station Economic Development Plan involves improving the infrastructure currently within the Village. Recommendations involving bicycling and walking include constructing bicycle lanes on roads with high volumes of traffic and improving sidewalk conditions within the Village. This includes creating marked crosswalks in the downtown area, adding "bump-outs" at the CTH HH/US 12 intersection, widening sidewalks by 4 feet throughout downtown, and the potential creation of a Mountain Bike Facility at the Village Recycling Center.

Village of Necedah

Village of Necedah Comprehensive Plan 2015

Transportation Element

All roads within the Village are open for bicycle and pedestrian travel. Both STH 21 and 80 have sidewalks on at least one side of the roadway within the Village, and all roads located downtown have sidewalks on both sides. The Kucirek Trail is a 0.7 mile long recreation trail that connects residents to the school. Highways within the Village considered to have best conditions for bicycling within the Village include the northern portion of STH 80 and the southern portion of CTH G. The eastern portion of STH 21 and the southern portion of STH 80 are considered to have poor conditions for bicycling.

Goals, Objectives, and Policies involving bicycling and walking include the following:

- Goal 1: Encourage walking and bicycling as viable transportation
    - Objective 1: Create recreation routes to the Necedah National Wildlife Refuge and Buckhorn State Park
    - Objective 2: Make roads vehicle and pedestrian friendly
    - Objective 3: Provide bicycle parking wherever vehicle parking is provided
    - Objective 4: Provide wayfinding throughout the Village and to adjacent points of interest,
        - Policy 1: Map where sidewalks or shared use paths will be required in residential and commercial developments
        - Policy 2: Coordinate with WisDOT to make curb radii reductions on STH 21 at the following streets: N. Sheridan St; N. Division St; Plum St; N. Harvey St; and John Street. These changes will make it safer for pedestrians to cross STH 21
        - Policy 4: Create an on road bicycle wayfinding system linking the Village to the Necedah National Wildlife Refuge and Buckhorn State Park
        - Policy 5: Provide guidance for all employers, public and private, to provide bicycle parking at their locations

Necedah Area Bicycle Facilities Network Plan 2004

The North Central Wisconsin Regional Planning Commission created this plan in 2004 to guide the development of bicycle facilities in northern Juneau County, particularly in and around the Necedah National Wildlife Refuge. The goal of this plan is to increase the mobility of people within the County and increase visitor activity by making bicycling a more viable and attractive transportation choice. The plan will strengthen the rural character of the County by connecting natural and cultural resource destinations and by connecting communities, which will see positive economic development from tourism. Proposed bike routes are shown on Maps 4a and 4b in the Transportation Element of the Village of Necedah Comprehensive Plan.

Village of Wonewoc

Village of Wonewoc Comprehensive Plan 2004

Transportation Element

The Transportation Element notes that the Village is commonly referred to as "The Midpoint of the 400 State Trail." The 400 State Trail passes through the west side of the Village's downtown corridor. The public school within the Village owns land with an interpretive nature trail that connects to the 400 State Trail. Goals, objectives, and policies related to bicycling and walking include the following:

- Goal: Encouragement of neighborhood designs that support a range of transportation choices.
    - Policy: The Village shall encourage developments that allow for pedestrian and bicycle traffic as well as vehicular traffic.
        - Objective: Utilize a subdivision ordinance to require sidewalks and roadways that accommodate pedestrians and bicyclists in new developments or redevelopments.

Existing Facilities Inventory

Every road except the Interstate allows walking and biking to occur on them; but not all roads are safe to do so. Paved shoulders and sidewalks provide a safe space to walk, because they are separated from motorized traffic lanes. Sometimes a wide shoulder on a highway is adequate if only occasional daily walkers are expected and traffic volumes are higher than local streets. Young bicyclists and others who are concerned about riding in traffic also benefit from paved shoulders. As part of this process, it is important to take stock of what currently exists in Juneau County, assess conditions facing people who are bicycling or walking or who want to bike or walk more often, and what the infrastructure is like to make bicycling, walking, and hiking more attractive options in the County.

The following facilities are shown on each community's maps in **Appendix 7**. Paved/un-paved shoulders are not classified as walking facilities under state law, so they are not shown on most Appendix 7 maps; but they are useful for occasional pedestrian use.

City of Mauston

The City of Mauston has an extensive network of sidewalks that connect most destinations throughout the community. Paved shoulders along some highways at the edges of Mauston provide space to occasionally walk or bike to destinations that are not huge walking or bicycling destinations.

Riverwalk – Mauston has a concrete paved trail or boardwalk trail along the north and south sides of the Lemonweir River, east of the dam near Union Street. Total length of this trail, including sidewalk over the Union Street/STH 82 bridge and the pedestrian bridge across the Lemonweir River, is about 1.3 miles long.

Gateway Ave Multi-use Path – In an effort to provide pedestrian access from the Mauston Hotel Corridor (east of I-90/94) to the Riverwalk and Downtown, the City constructed a multi-use path under Interstate 90/94, and then bike lanes on McEvoy Street. The future desire is to extend this path along State Highway 82 to Woodside Ranch.

City of Elroy

The City of Elroy has an extensive network of sidewalks that connect most destinations throughout the community. Paved shoulders on STH 82 from STH 71 north to the STH 80/82 intersection, exist and sometimes accommodate parked vehicles. Through downtown, STH 80/82 has 17' wide travel lanes, along with parking lanes.

Elroy is home to the **Elroy-Sparta State Trail, the 400 State Trail, and the Omaha Trail** (See each of these trail descriptions under their own heading in this chapter).

City of New Lisbon

The City of New Lisbon has sidewalks throughout the community, but some destinations have limited connections. Paved shoulders on STH 80, east of the Lemonweir River, are limited to mainly 3-feet wide, even though destinations exist and a new STH 80 bridge over I-90/94 was just re-decked without wide paved shoulders.

A system of paths and a bridge connect Riverside Park & Campground to downtown.

Village of Camp Douglas

Downtown has sidewalks on both sides and on select other streets within the Village. A path connects the Village under I-90/94 to Volk Field.

Camp Douglas is at the start of the **Omaha Trail** (See this trail's description under its own heading in this chapter).

Village of Hustler

Sidewalks exist along both sides of Main Street, and the **Omaha Trail** passes through the Village too. (See the Omaha Trail's description under its own heading in this chapter).

Village of Lyndon Station

The downtown area has sidewalks on both sides. Residential and industrial development southeast of Lyndon Station along USH 12 is accessible by 3-foot paved shoulders and another 3-foot wide gravel shoulders.

Village of Necedah

Both STH 21 and 80 have sidewalks on at least one side within the Village. Downtown has sidewalks on both sides. Some Village streets south of downtown also have some sidewalks. STH 80, south of downtown to the start of Kucirek Trail, has parking lanes that few people use in the daytime, therefore providing wide bike lanes. STH 80, north of STH 21, has 17-foot wide lanes, which provides 5-foot wide urban shoulders for bicycling. STH 21, west of STH 80 intersection to 3rd St, has 5' to 7' wide urban shoulders/paved shoulders.

Kucirek Trail – (0.7 mile long, asphalt paved recreation path) is on the west side of STH 80 and connects Village residents with the school. Another multiuse asphalt path exists within Old Mill Park, northeast of the STH 21-80 intersection.

There is less than a 3-foot shoulder on the STH 21 bridge over the Yellow River. With heavy semi-traffic, and a long bridge, this produces a barrier for pedestrians and bicyclists to cross from downtown Necedah to anywhere east of the Yellow River.

Necedah National Wildlife Refuge

Over eight miles of trails provide a variety of routes to choose from: Visitor Center Trail (0.25-1.0 mile), Observation Tower Trail (0.8 mile), Boghaunter Trail (0.8-3.6 miles), or Lupine Loop Trail (0.8 mile).

Village of Union Center

The Village contains few sidewalks, and most of their roads are asphalt paved with wide shoulders.

The **400 State Trail** and the **Hillsboro State Trail** both meet in the Village (See each of these trail descriptions under their own heading in this chapter).

Village of Wonewoc

The Village has a system of sidewalks throughout the community, along with some paved shoulders.

The **400 State Trail** has a trailhead in the Village, and a 400 Trail Wayside is just ¼-mile south of the Village (See the 400 State Trail's description under its own heading in this chapter).

Juneau County's only full service bicycle shop—Beyond Boundaries—is located in the Village.

Most Town Roads

Many towns in Juneau County have paved their roads with asphalt or chip-sealed over gravel. Both of those surface types provide a durable, dust-free surface for bicycling and walking where traffic volumes are low.

Elroy-Sparta State Trail

Established in 1967, the Elroy-Sparta State Trail is the first rail-to-trail conversion in the United States. This crushed limestone trail on an abandoned railroad bed allows walking and biking in the summer; and walking, biking, cross-country skiing, snowshoeing, and snowmobiling in the winter. In Juneau County, this trail begins at the Elroy Commons trailhead in the City of Elroy.

Three railroad tunnels highlight the trail which are each over 140 years old. The tunnels near Kendall and Wilton are each about 0.25 miles long. The tunnel between Norwalk and Sparta is 0.75 miles long. Flashlights and jackets are recommended in the tunnels. The tunnels are dark and cool, even on the brightest days and water from springs above the tunnels can trickle onto the trail. Bikers should walk bikes through the tunnels. (WDNR)

Both the 400 State Trail and the Omaha Trail connect to the Elroy-Sparta State Trail in the City of Elroy at the Elroy Commons trailhead. The WDNR maintains this trail, and the Friends of the Elroy-Sparta State Trail group promote the trail through staffing the Kendall Depot and establishing a network of businesses to sell trail passes

400 State Trail

Established in 1993, the 400 State Trail was named after the Chicago and North Western passenger train that traveled the 400 miles between Chicago and Minneapolis/St. Paul in 400 minutes. This crushed limestone trail on an abandoned railroad bed allows walking and biking in the summer; and walking, biking, cross-country skiing, snowshoeing, and snowmobiling in the winter. From Wonewoc to La Valle is a 7-mile grass surface horse trail parallel to the 400 State Trail. The Baraboo River twists and turns under the trail's entire length as it travels from Elroy to Union Center to Wonewoc to La Valle to Reedsburg.

Both the Elroy-Sparta State Trail and the Omaha Trail connect to the 400 State Trail in the City of Elroy at the Elroy Commons trailhead. The WDNR maintains this trail, and a Friends of the 400 State Trail group advertises the 400 State Trail in numerous recreational trade publications, brochures, and operates a web page.

Hillsboro State Trail

Established in 1995, the Hillsboro State Trail is a 4-mile long state trail that is maintained by Juneau and Vernon Counties. This crushed stone trail on an abandoned railroad bed allows walking and biking in the summer; and walking, biking, cross-country skiing, snowshoeing, and snowmobiling in the winter.

Union Center and Hillsboro are both connected by this trail with parking available in Union Center at the 400 State Trail parking lot.

Omaha Trail

Established in 1992, the Omaha Trail is a Juneau County owned and maintained trail that was constructed on an abandoned Chicago and North Western railroad bed. This seal-coat over gravel surface trail travels from Camp Douglas through Hustler to Elroy. An 875 foot long tunnel that was built in 1876 is a unique feature along this trail.

In Elroy, the Omaha Trail connects by road to the 400 State Trail and the Elroy-Sparta State Trail at the Elroy Commons trailhead.

Van Kuren Trail

The Wisconsin River Power Company (WRPCO) constructed this gravel 3.2-mile hiking/ski trail adjacent to the Petenwell flowage as part of a required recreation facility in the Federal Energy Regulatory Commission (FERC) license to operate the hydroelectric project.

The trail passes a wildlife observation tower, a warming shelter for winter users, a foot bridge across a small stream, and interpretive signs along the route.

Roadway Conditions

Generally, the wider the road, the more vehicle and bicycle traffic it can accommodate, because fewer *triple pass occurrences* would restrict traffic speed. It is the law in Wisconsin that a motor vehicle must provide at least 3 feet between it and a bicycle when passing. Buses are wider than cars, and buses are about 8.5 feet wide; so a car (less than 8.5 feet wide) + 3 feet + a bike + an on-coming car can fit on a road that is 24 feet wide without any of the three vehicles leaving the pavement. The car passing the bike would probably cross the centerline slightly to make room for the bike, while still maintaining room for the on-coming vehicle.

Triple Pass Occurrence

A ***triple pass occurrence*** is when a bicycle, an on-coming motor vehicle, and an overtaking motor vehicle arrive at the same lateral section at the same time.

Roadway Suitability Evaluation

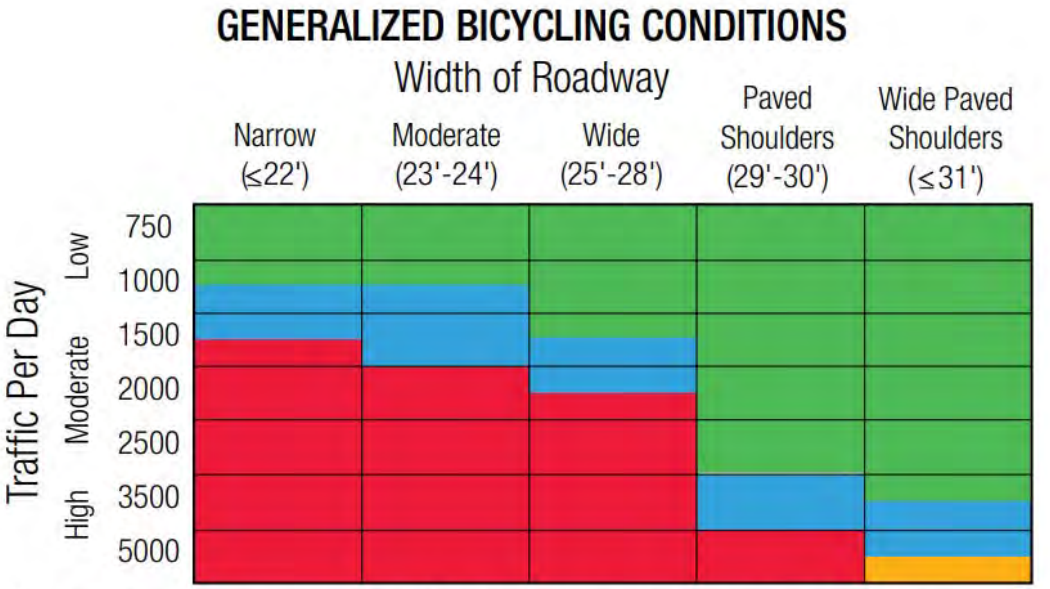
WisDOT has developed a road evaluation method based on the needs of *casual bicyclists** as part of their Rural Bicycle Planning Guide in 2006. **Casual bicyclist – "interested but concerned" bicyclist per page 7.*

The method is quantifiable and cyclists, stakeholders, and other agencies can practice the method which contains the following steps:

1. *Identify Annual Daily Traffic, or ADT.*
2. *Determining how much of a road segment has a solid yellow centerline—roads with more solid yellow centerlines are less suitable for cycling because of limited sightlines. The more curves or hills along a stretch of roadway, the more no-passing zones (yellow centerline) will exist.*
3. *Identifying percentage of ADT that is truck traffic (if unknown, the guide suggests assuming ten percent of ADT).*
4. *Determine Pavement width.*

The guide then provides intuitive reference table to determine bicycling conditions for rural roads. The tables are separated bas on common road widths. A summary table of varying rural bicycling conditions is included in Figure 10.

Figure 10: Generalized bicycling conditions for rural roadways



The table illustrates, in a generalized fashion, how state and county highways were classified by their conditions for bicycling. Traffic and width of roadways are the two primary variables affecting bicycling conditions. Green – Best conditions; Blue – Moderate conditions; Yellow – Higher Volumes, Wider Paved Shoulders; Red – Undesirable Conditions

The WisDOT Bicycle Suitability Map provides a visual catalog of roads (mostly State and county highways) for counties in the Region and State by their suitability for bicycling based on the current conditions and space available along the roads. WisDOT and the Wisconsin Bicycle Federation (Bike Fed) re-evaluated the State's roadways in 2015, as shown in **Map 3**. Bicycle suitability for roads is categorized in the following ways:

- Local Roads (City, Village, Town Roads) – Generally considered as "best condition" due to low traffic.
- Best Conditions for Bicycling [Paved Shoulders also noted]
- Moderate Conditions for Bicycling [Paved shoulders also noted]
- Higher Volume, Wider Paved Shoulders
- Higher Volume, Undesirable Conditions
- Bicyclists Prohibited

While these categorizations do not constitute a plan or strategy, they do provide a detailed and relatively user-friendly inventory of current bicycling conditions throughout the County while taking into account road types, conditions, and general desirability. The Suitability Map is used to evaluate bicycle corridors throughout the County.

It is strongly suggested that communities re-assess the bicycle suitability of a road segment when considering improvements to that specific roadway segment. The roadway's latest traffic and truck count data should be used in that analysis.

The basic premise of the road suitability methodology is to make adjustments to the traffic volume (ADT) and pavement width (in feet) for the roadway being evaluated based on the other factors listed such as percent yellow line or percent truck traffic. However, data used in the evaluation is not as readily available for rural town roads as it is for county and state highways. Although traffic count studies are not available, general observation indicates that traffic volumes are sufficiently low, usually below 500, on the town roads. Based on the traffic count maps, there is no reason to assume that local roads, which feed higher volume county roads are individually significant contributors of traffic volume, with the possible exception of certain roads surrounding an urban area. Therefore, adjustments to the ADTs on town roads will not likely increase working ADT levels over the acceptable threshold even with narrow widths.

In and around a built-up or "urban" area, main arterials and collector streets must be evaluated carefully when being considered as designated bike routes. On urban roads, slightly higher traffic volumes are suitable for bicyclists because speeds are generally lower than rural roads. In areas where traffic is dangerously fast, many communities are turning more to traffic calming techniques. Neighborhood streets generally need not be individually evaluated because traffic volumes on these streets are typically low enough that they are well suited to bicycling activities without any physical improvements.

Traffic Counts

Traffic counts identify how many motor vehicles pass a point during the count period. Some counters are calibrated to also identify bicycles, but neither WisDOT nor Juneau County are using such counters at this time.

Map 4, Traffic counts, makes it easy to see the average daily traffic counts in Juneau County. Traffic counts came from WisDOT's 2009, 2012, and 2015 interactive maps. If a segment did not have a 2015 count then the 2012 count was used. Counts that showed less than 500 Annual Average Daily Traffic (AADT) counts, usually makes them the "best conditions' for bicycling if a road is paved, otherwise a gravel road could be a hazard to a bicyclist if the surface is not graded and from a passing vehicle's dust.

Crash Analysis

Safety is often cited as the primary reason people do not bike or walk more. Creating a safer environment for these activities is an important focus that requires an understanding of safety issues and proven actions that can be taken to improve safety. Crashes involving motor vehicles that result in injuries or fatalities to bicyclists and pedestrians have been recorded at the state and federal levels for many years.

Over the past few decades, traffic safety experts have been moving away from the term "***accident***" in favor of the term "***crash***" to describe a collision. An accident is defined as an unforeseen and unplanned event or circumstance. WisDOT made this change in 1990 because traffic crashes are not accidents, but avoidable events caused by a single variable or chain of variables.

Crash data are reported universally for Wisconsin on Form MV400. However, it is important to highlight some shortcomings:

1. *Some studies indicate that as few as ten percent of all bicycle crashes are reported;*
2. *Some roads with a higher frequency of bicycle crashes may have higher bicycle use;*
3. *Very likely that there will be no detectable pattern of bicycle crashes because of the small number reported in rural areas and small cities.*

Reported bicycle or pedestrian crashes in Juneau County between 2000 and 2016 are shown on **Map 5, and on the individual community ("Existing Data") maps in Appendix 7**.

Bicycle Crashes

There are many roads within Juneau County where multiple reported bicycle crashes have occurred between 2000 and 2016. Table 3 displays roads within Juneau County where there were multiple reported bicycle crashes.

The City of Mauston contained the most roads with multiple crashes – eight roads. All of the State Street crashes occurred in downtown Mauston before WisDOT reconstructed West State Street. The right-of-way did not exist for full bike lanes to be added, but curb bulb-outs at intersections for pedestrian crossings may indirectly improve bicycling safety due to traffic traveling closer to the speed limit and paying more attention within the downtown area.

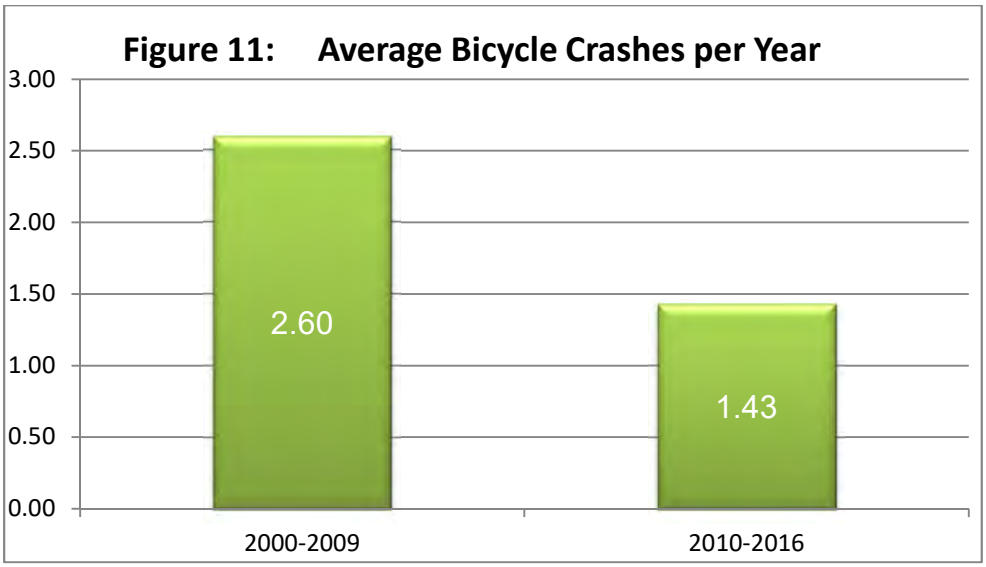
The Village of Necedah and the City of New Lisbon had two roads each with multiple crashes. All other municipalities in the county only had roads with single occurrences of reported bicycle crashes.

Table 3: Juneau County Roads with Multiple Bicycle Crashes 2000-2016	
City of Mauston	
Road	**# of Crashes**
State St.	6
Oak St.	2
Union St.	2
Grove St.	3
Lincoln St.	2
Division St.	2
Milwaukee St.	2
La Crosse St.	2
Village of Necedah	
Road	# of Crashes
Main St.	2
Hwy 21	3
City of New Lisbon	
Road	# of Crashes
Adams St.	2
Liberty St.	2

Source: MV400 Crash Database, Wisconsin Traffic Operations and Safety Laboratory.

Juneau County had 36 reported bicycle crashes from 2000 to 2016. The county averaged 2.12 bicycle crashes per year from 2000 to 2016. The amount of bicycle crashes per year has been declining, as Juneau County averaged 2.60 bicycle crashes from 2000-2009 and 1.43 bicycle crashes from 2010-2016, as shown in Figure 11. When including all drivers, pedestrians, and bicyclists involved in a reported crash, 64 percent of bicycle crashes involved an individual 16 years old or younger, 86 percent of bicycle crashes involved an individual between 17 and 64 years old, and 14 percent of bicycle crashes involved an individual 65 years old or older. Age information was not released for four individuals. Of the 36 total

bicycle crashes in Juneau County, 33 resulted in an injury, 2 resulted in fatality, and 1 resulted in property damage exceeding $500.



Source: MV400 Crash Database, Wisconsin Traffic Operations and Safety Laboratory

Urban municipalities had bicycle crashes at a much higher frequency than in the rural towns in Juneau County between 2000 and 2016. The City of Mauston had the most bicycle crashes with 18, while Village of Union Center, Village of Wonewoc, and Village of Hustler did not have any reported bicycle crashes during this time. Rural towns accounted for 8 bicycle crashes during this time, compared to the urban municipalities combined total of 28 crashes. Table 5 breaks down bicycle crash data by municipality.

Table 5: Bicycle Crash Data (2000-2016)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
City of Mauston	1	0	1	1	3	1	0	4	2	0	1	0	0	1	2	1	0	18
City of Elroy	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
City of New Lisbon	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	3
Village of Necedah	0	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	4
Village of Union Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Village of Lyndon Station	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Village of Wonewoc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Village of Hustler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Village of Camp Douglas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Urban	1	1	1	2	6	1	1	4	2	1	2	1	0	1	2	2	0	28
Rural	0	0	0	0	1	1	2	1	0	1	0	1	0	0	1	0	0	8
Juneau County	1	1	1	2	7	2	3	5	2	2	2	2	0	1	3	2	0	36

Source: MV400 Crash Database, Wisconsin Traffic Operations and Safety Laboratory

Pedestrian Crashes

Juneau County also contains a many roads where multiple pedestrian crashes occurred from 2000 to 2016. Table 4 displays roads within Juneau County where there were multiple reported pedestrian crashes.

Seven municipalities within the county contained at least one road with multiple occurrences of reported pedestrian crashes, with two of these municipalities being the Town of Lemonweir and the Town of Lyndon.

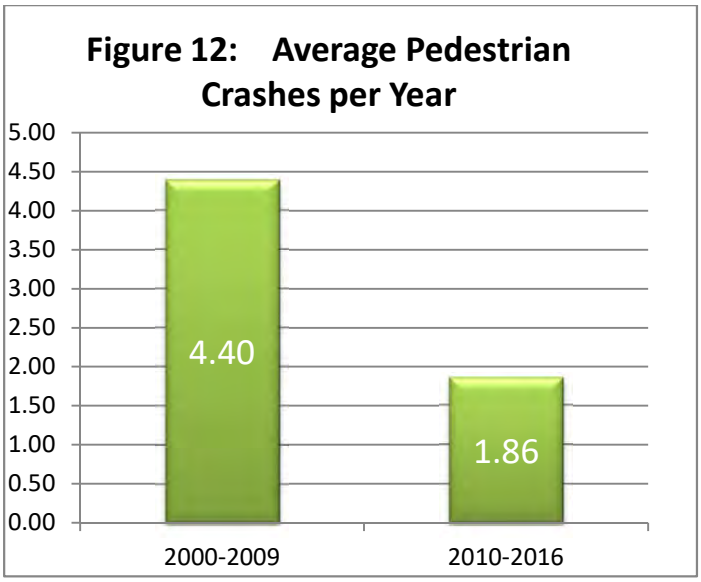
The City of Mauston contained the most roads with multiple reported pedestrian crashes with six. All of the State Street crashes occurred in downtown Mauston before WisDOT reconstructed West State Street. WisDOT improved pedestrian safety on W State St by adding curb bulb-outs at intersections, and colored crosswalks.

Juneau County had a total of 57 reported pedestrian crashes from 2000 to 2016. The county averaged 3.35 pedestrian crashes reported per year during this time. Pedestrian crashes have decreased dramatically however, as Juneau County averaged 4.40 pedestrian crashes from 2000-2009 and only 1.86 pedestrian crashes from 2010-2016, as shown in Figure 12. When including all drivers, pedestrians, and bicyclists involved in a reported crash, 21 percent of pedestrian crashes involved an individual 16 years old or younger, 89.5 percent of reported pedestrian crashes involved an individual between 17 and 64 years old, and 19 percent of reported pedestrian crashes involved an individual 65 years old or older. Age information was withheld for at least one individual in 15 crashes. Of the 57 total pedestrian crashes in the county, 52 resulted in an injury, 4 resulted in fatality, and 1 resulted in property damage exceeding $500.

Table 4: Juneau County Roads with Multiple Pedestrian Crashes 2000-2016

City of Mauston	
Road	**# of Crashes**
State St.	3
Union St.	3
Lincoln St.	2
Division St.	2
Elm St.	2
Tremont St.	2
Village of Necedah	
Road	# of Crashes
Main St.	3
3rd St.	3
City of New Lisbon	
Road	# of Crashes
Adams St.	4
Bridge St.	2
City of Elroy	
Road	# of Crashes
Hwy 80	2
Village of Lyndon Station	
Road	# of Crashes
Hwy 12	2
Hwy HH	2
Town of Lyndon	
Road	# of Crashes
Arrowhead Dr.	5
Town of Lemonweir	
Road	# of Crashes
Hwy 12	2
19th Ave.	2

Source: MV400 Crash Database, Wisconsin Traffic Operations and Safety Laboratory.



Source: MV400 Crash Database, Wisconsin Traffic Operations and Safety Laboratory

In Juneau County, urban municipalities combined for 34 reported pedestrian crashes while rural towns combined for 23 reported pedestrian crashes. Among Juneau County municipalities, the City of Mauston had the most reported pedestrian crashes with 14, as shown in Table 6. The Village of Camp Douglas was the only urban municipality to not have any pedestrian crashes between 2000 and 2016.

Table 6: Pedestrian Crash Data

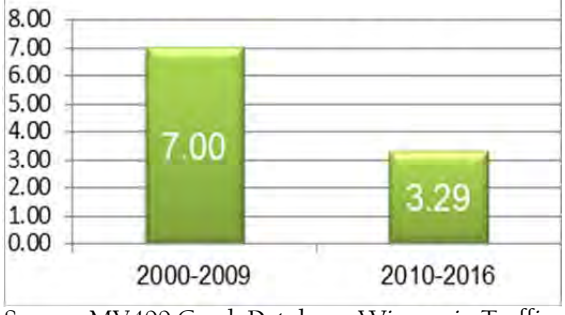
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
City of Mauston	1	0	1	0	0	2	2	0	2	4	0	0	0	1	1	0	0	14
City of Elroy	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	4
City of New Lisbon	0	0	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	5
Village of Necedah	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	0	5
Village of Union Center	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Village of Lyndon Station	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	3
Village of Wonewoc	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Village of Hustler	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Village of Camp Douglas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Urban	1	0	2	2	2	5	5	2	5	4	1	0	0	2	2	1	0	34
Rural	1	2	1	2	2	4	2	0	1	1	0	0	0	3	0	4	0	23
Juneau County	2	2	3	4	4	9	7	2	6	5	1	0	0	5	2	5	0	57

Source: MV400 Crash Database, Wisconsin Traffic Operations and Safety Laboratory

Overall Bicycle & Pedestrian Crash Conclusion

Over the course of a 17 year period (2000-2016), Juneau County had a total of 93 crashes that involved either a bicyclist or a pedestrian, averaging 5.47 crashes involving either a bicyclist or pedestrian per year. The average number of crashes per year has decreased dramatically, as the county averaged 7.00 crashes between 2000 and 2009, and 3.29 crashes between 2010 and 2016, as shown in Figure 13.

Figure 13: Average Bike and Pedestrian Crashes per year



Source: MV400 Crash Database, Wisconsin Traffic Operations and Safety Laboratory

When including all drivers, pedestrians, and bicyclists involved in a reported crash:

- 35.5% of all crashes involved an individual 16 years old or younger;
- 88% involved an individual between 17 and 64 years of age; and
- 17% involved an individual age 65 or older.

Age information was not released for 20 individuals. Of the 93 crashes in Juneau County involving either a bicyclist or pedestrian, 86 crashes resulted in an injury, 6 crashes resulted in fatality, and 2 crashes resulted in property damage exceeding $500.

Of the 93 reported bicycle and pedestrian crashes in Juneau County from 2000 to 2016:

- 62 crashes occurred in an urban municipality;
- 31 occurred in a rural town.

With 32 crashes, the City of Mauston alone had more total bicycle and pedestrian crashes than all of the rural towns within the county combined. A 3-year stretch between 2004 and 2006 accounted for 32 total crashes, an amount that comes out to 34.4 percent of the county's total.

Bicycling as a recreation activity is common among seasonal residents, especially when scenic trails are available. Seasonal residents often travel to an area just to enjoy the outdoors, which may include bicycling from place to place on roads or trails. Figure 7 shows the percentage of seasonal housing units to total housing units in each of the towns and municipalities in Juneau County.

Seasonal residents and visitors are in a relaxed state-of-mind when they travel in Juneau County. They are trying to reach their cottage, campground, or motel, and are not planning on seeing bicyclists or pedestrians along their route. They expect municipalities to provide space for walkers and bikers out of the travel lanes; but they generally don't make the connection that distances between property tax payers are longer in rural areas vs. their urban homes where they traveled from, thus costing more in rural areas to provide the same accommodations from fewer tax payers.

Providing adequate space for bicyclists and pedestrians outside of motor vehicle driving lanes would create a safer road and less stress for both motorists and non-motorists (bicyclists and pedestrians). Less stress is a factor when tourists decide where to spend their leisure money.

Chapter 3: Goals, and Objectives

To guide the process of documenting the activities and facilities needed to enhance bicycle and pedestrian facilities throughout Juneau County, a number of goals and objectives were created. As the public and private sectors consider improving biking and walking conditions within their realms of influence, they are encouraged to review how these goals and objectives affect may improve their efforts.

The following goals regarding Juneau County's bicycle and pedestrian network are an essential part of this plan and should be considered by local, County, State, and Federal agencies when undertaking activities related to these networks. These goals and objectives were crafted using input from the Advisory Group on what the body hoped the plan would address. Furthermore, the goals and objectives were further tailored to reflect the priorities of the County expressed throughout this planning process.

The goals and objectives are divided into two initiatives – Local and Tourist. The Tourist initiative builds upon the Local initiative.

Local Initiative – *Love where you live*

The *Local Initiative* is directed at improving walking and biking for local residents.

Goal 1 – Establish safe and convenient bike routes between trip generators for transportation purposes.

Objective 1.1 – Create a set of bike routes that gets employees to work, and provides safe and convenient routes between trip generators for errands and social trips.

Objective 1.2 – Identify very hazardous road segments so that road improvements can be scheduled to make those segments much safer to use.

Objective 1.3 – Sign bike routes so bicyclists know that they are on the right route and to alert drivers to become aware to share the road with bicyclists.

Goal 2 – Provide bicycle parking. Everyone who owns a bicycle has a place to securely park it at home, but many destinations do not provide secure bicycle parking.

Objective 2.1 – Provide bicycle parking guidance to all employers that want to become more bicycle friendly.

Objective 2.2 – For employers with on-street parking for their clients, work with communities to provide bike parking within the street & sidewalk right-of-way.

Objective 2.3 – For employers that have bicycling workers, provide assistance to employers who want to create bike parking for their employees.

Goal 3 – Make all roads safe to walk within 2-miles of trip generators. All roads except the Interstate highway in Juneau County are available for people to walk and bicycle on. Some roads are dangerous or very uncomfortable to walk or bicycle on. Alternative routes are needed or the road right-of-way needs some other accommodation to make it safe for all users.

Objective 3.1 – Review community specific maps for pedestrian road and sidewalk improvements.

Objective 3.2 – Revise these community specific improvement maps as a community grows and major land uses change.

Goal 4 – Make all sidewalks ADA compliant. The Americans with Disabilities Act was signed into law in 1990. Many others can also benefit from curb ramps, like parents with strollers and the elderly. Visually impaired individuals may need special traffic light crosswalk buttons with sound.

Objective 4.1 – Each municipality with sidewalks should make a short multi-year plan to bring all sidewalks up to ADA compliance.

Objective 4.2 – Each municipality with sidewalks should review where street lights are located, and determine if the lights are located properly to illuminate pedestrians, especially at crossings, and are bright enough to diminish shadows.

Goal 5 – Improve confidence with biking on the road. Bicycles are legally classified as: vehicles on Wisconsin roadways. That means bicyclists must obey the rules of the road like any other vehicle and must be treated as equal users by all other vehicles.

Objective 5.1 – Partner with WisDOT and community service groups to provide bicycle safety education to the full range of road users (e.g. motorists, driver education classes, families with children, moderately comfortable bicyclists, expert bicyclists, and bicycle group riders) through various departments and community service groups.

Goal 6 – Improve confidence with walking on the road. People driving are required by law to yield the right of way to pedestrians in a marked or unmarked crosswalk.

Objective 6.1 – Partner with WisDOT and community service groups to provide walking safety education to the full range of road users (e.g. motorists, driver education classes, families with children, walkers of all ages and abilities).

Goal 7 – Provide safe routes to school. This is an opportunity to make walking and biking to school safer for children in grades K-8, and to increase the number of families who encourage their children to walk and bike.

Objective 7.1 – Cooperate with NCWRPC to apply for Safe Routes To School assistance for each school covering some or all grades K-8 in Juneau County.

Tourist Initiative – *Come back for more*

The *Tourist Initiative* is directed at improving walking and biking for tourists.

Goal 8 – Establish scenic bike loop routes.

Objective 8.1 – Map scenic bike route loops, or connections, where the route itself is the destination.

Objective 8.2 – Create a paper and/or digital map of these bike routes.

Objective 8.3 – These bike routes may or may not be physically signed on the roads. If they are to be signed, then work with the Juneau County Highway Department and affected communities to officially post these routes.

Goal 9 – Provide bicycle-friendly lodging. Visitors with bikes have a means for transporting their bicycle securely, but many destinations do not provide secure bicycle parking.

Objective 9.1 – Hotels, motels, or campgrounds should have secure bike storage or allow bicycles in rooms.

Objective 9.2 – If a hotel, motel, or campground is expecting to have mountain bikers, then such lodging should also provide bike washes (see the Recommendation chapter in this plan for details).

Chapter 4: Countywide Recommendations

Countywide Recommendations are for each municipality to consider implementing as appropriate within their jurisdiction. A primary focus of the Juneau County Bicycle & Pedestrian Plan (JCBP Plan) is to create an interconnected, usable, and safe walking and bicycling network for Juneau County residents and visitors at a prudent monetary cost.

5-E Approach

Education, Encouragement, Engineering, Enforcement, and Evaluation are the "E's" that combine to provide a well-rounded and complete bicycle and pedestrian support network. As the JCBP Plan was developed this approach was used to work through Advisory Group meetings. Recommendations were created to satisfy each of the E's, which are briefly described below.

- **Education** – includes teaching pedestrians, bicyclists, and drivers about traffic safety and creating awareness of each other's use of the roadway; the signing of bike routes shows motorists that bicyclists may be present, and also provides wayfinding for bicyclists – just like highway signs for motorists.

- **Encouragement** – strategies and programming that are about getting people walking and bicycling; such activities will help build support for creating more walkable places, decrease traffic congestion, and improve physical health.

- **Engineering** – any physical change that improves conditions for walking or biking; some improvements include: building paths, creating safer crossings, and slowing down traffic. At the same time, engineering practices recognize the importance of a balanced roadway environment that can accommodate the needs of all modes of transportation, be it foot, bicycle, or motor vehicle.

- **Enforcement** – strategies by law enforcement, engineers, and other partners are used to deter unsafe behaviors of drivers, pedestrians, & bicyclists, and to encourage all road users to obey traffic laws and share the road safely.

- **Evaluation** – Includes monitoring the outcomes and documenting the results of the implementation of the other E's. Data collection before and after infrastructure improvements are implemented, such as user surveys and bicycle and pedestrian counts, are critical to measuring the overall effectiveness of the network.

Countywide Recommendations

Recommendations that may affect several communities or entities are as follows:

Omaha Trail

The Omaha Trail is a bike and pedestrian trail that Juneau County maintains and has a separate trail fee for bicyclists from the state trail fee.

The Omaha Trail surface is worn out and no highway directional signs exist. Trailhead signage in Camp Douglas needs extensive repair. Barely $500 comes in to support this trail from trail passes annually. Snowmobile funding from the state (paid by: 1. snowmobile registration fees, 2. snowmobile trail passes, and 3. part of the gas tax) paid half of the re-decking cost for 19 bridges ($50,000), with the other $50,000 coming from DNR's Recreational Trails Program (which is federal money provided to DNR for trail maintenance). Snowmobile groups also annually trim trees and bushes encroaching upon the trail before winter.

Recommendations:

1. Encourage creation of a *Friends of the Omaha Trail* group.

   The Friends group could:
   a. Organize annual tree and brush maintenance activities;
   b. Promote trail use through social rides;
   c. Refurbish trailhead signs and trailhead bulletin boards;
   d. Consider advocating for the creation of a state excise tax on bicycling equipment purchases, similar to the Pittman-Robertson 11% excise tax on hunting & fishing equipment. (Bicycle registration has not worked in most states that tried it, so an excise tax is another option.) This would then create a similar statewide funding mechanism that exists for snowmobile trail maintenance.

2. Consider pros and cons to establishing the Omaha Trail as a state trail. This way someone with a state trail pass can also use the Omaha Trail, and it will be listed on the WDNR trails website and in printed materials for better visibility.
3. Install brown highway wayfinding signs for the Omaha Trail, just like the Elroy-Sparta and 400 Trail have. For example, there are brown highway signs advertising the Elroy-Sparta and 400 Trail in New Lisbon, but no signs directing people to the Omaha Trail.
4. Pursue installation of WisDOT "Specific information signs" for the Omaha Trail on I-90/94 at the Camp Douglas exit.
5. Improve trail surface with new sealcoat.
6. Refurbish trailhead signage in Camp Douglas (see the Rails-To-Trails Signage recommendation).

Hillsboro State Trail

The Hillsboro State Trail is a bike and pedestrian trail on a former railroad bed. The maintenance of the Hillsboro State Trail is handled by agreement with WDNR through a Memorandum of Understanding between Juneau County, Village of Union Center, City of Hillsboro, and Vernon County. Juneau County's Land, Forestry, & Parks Department provides most of the maintenance on the Trail. Annually, the Department incurs direct costs for brushing, removing trees, mowing and repairing bridges that the State doesn't repay. The State has contributed funding for bigger issues like washouts or to replace culverts on the Trail.

Recommendations:

1. Encourage creation of a *Friends of the Hillsboro State Trail* group.

   The Friends group could:
   a. Organize annual tree and brush maintenance activities;
   b. Promote trail use through social rides;
   c. Refurbish trailhead signs and trailhead bulletin boards;
   d. Consider advocating for the creation of a state excise tax on bicycling equipment purchases, similar to the Pittman-Robertson 11% excise tax on hunting & fishing equipment. (Bicycle registration has not worked in most states that tried it, so an excise tax is another option.) This would then create a similar statewide funding mechanism that exists for snowmobile trail maintenance.

2. Improve trail surface, possibly with a sealcoat over gravel.
3. Refurbish trailhead signage in Union Center (see the Rails-To-Trails Signage recommendation).

USBRS Route 30 Development

The United States Bike Route System (USBRS) is a network of long-distance bicycle routes across the country linking urban, suburban and rural areas via a variety of cycling facilities. Proposed Route 30 is projected to cross Juneau County using the Elroy-Sparta State Trail, but no other connections have been established yet to create Route 30 (See Figure 8).

Recommendation: Work with the WDNR and other entities to identify and sign USBRS Route 30 in Juneau County.

Rails-To-Trails Signage

Juneau County is home to the first bike trail that was converted from an abandoned railroad—the Elroy-Sparta Trail. Directional signs exist on the trail, but almost no trail identification signs exist, even at trailheads.

Trail directional signs (Figure 14) help identify the trail on connecting road segments that are used for part of the trail when an off-road trail segment does not exist.

Trailhead signs (Figure 15) can provide more details for riders about the trail and destinations along the way. Maintaining weather enclosed bulletin boards at trailheads is a good idea to continue.

Recommendations:

1. Install trail name signs at all trailheads to identify the trail name. For example a bulletin board with: "Trail Information" above it should be replaced with: "Omaha Trail Information."
2. Install trail directional signs (Figure 14) where trails use roads as connections.
3. At road crossings consider adding street signs, so people know where they are.
4. At major road crossings consider installing larger trail identification signs (Figure 15).

Figure 14

Trail Directional sign

Source: NCWRPC

Figure 15

Major Trailhead Sign Examples

Source: Lpangelrob at English Wikipedia, CC BY-SA

Source: NCWRPC

Bicyclist Friendly Parking

For bikes to be used more often for transportation, everyday destinations like work, school, stores, offices, government buildings, and restaurants must have places to park a bicycle securely.

Installing bike racks by each employer (both rural and urban), or conveniently located in a commercial district, would provide secure parking for residents and visitors alike.

Employers that don't expect visitors may choose to use a closet or create a covered, fenced in bicycle parking area conveniently located on their property for employees to store their bikes.

Some considerations for employers providing secure employee bike parking:

- Will the bicycle be secure in the storage area?
- Will the bicycle be protected from inclement weather?
- Will anyone with a bicycle in the storage area be able to get their bike out without tipping over the remaining bicycles in the area?
- Is there a shower facility available for bicyclists to clean up in? A shower is not required, but some riders may need it to maintain their professional appearance to customers.

Installing bike racks in each park, especially near spectator sports, would provide secure parking for residents and visitors.

A set of bicycle parking recommendations from the Association of Pedestrian and Bicycle Professionals (APBP) is included in **Appendix 3**. The amount of space needed for a bike rack, and how to determine good bike rack designs are included in those guidelines.

Recommendations:

1. Use the *Bike Parking Guidelines* in **Appendix 3** when purchasing a bike rack, so that it allows a bicyclist to use a U-lock to secure their front tire and bike frame to a rack, and keeps the bike upright while locked.
2. Provide bicycle parking guidance to all employers that want to become more bicycle friendly.
3. Consider installing bicycle parking (**Appendix 3**) at every city/village/town hall, County buildings (e.g. courthouse, jail, health department, forestry department, etc.) and every park.
4. In business districts where visitor parking is provided on-street, work with the local government to identify space for bike racks within the road & sidewalk right-of-way. The local government may consult with NCWRPC for assistance.

Bicycle Wayside

There are very few bicycle repair shops in Juneau County – none in Mauston. A lower cost alternative to developing a series of bicycle stores is to create areas where people can fix their own bicycles.

A bicycle wayside could be at a gas station or at a village or town hall.

Components could include:

1. Bike rack (see Appendix 3),
2. Bicycle repair stand & tools,
3. Air pump with pressure gauge,
4. Drinking water fountain,
5. Restroom / outhouse, and
6. (Optional) a vending machine (sales area) that supplies common bike parts.

   Make sure to label each vending machine product with a sell by date. Printing "8/18" on a price tag style sticker would mean sell that product by August 2018.

Recommendation: Encourage gas stations and city/village/town halls along bike routes to create their own Bicycle Wayside; such locations already have restrooms and drinking water on-site.

Walking & Biking Wellness

The Juneau County Community Health Improvement Plan, 2016-2019, has two goals that relate to the Bicycle & Pedestrian Plan:

Goal 1: Increase physical activity and improve healthy nutrition in Juneau County residents.

In alignment with the State of Wisconsin's vision of having communities that eat healthier and move more, this goal is aimed at implementing evidence based strategies that help address obesity, nutrition, and physical activity. Strategies will focus on increasing physical activity and increasing healthier food options.

Goal 2: Incorporate health in all policies within Juneau County.

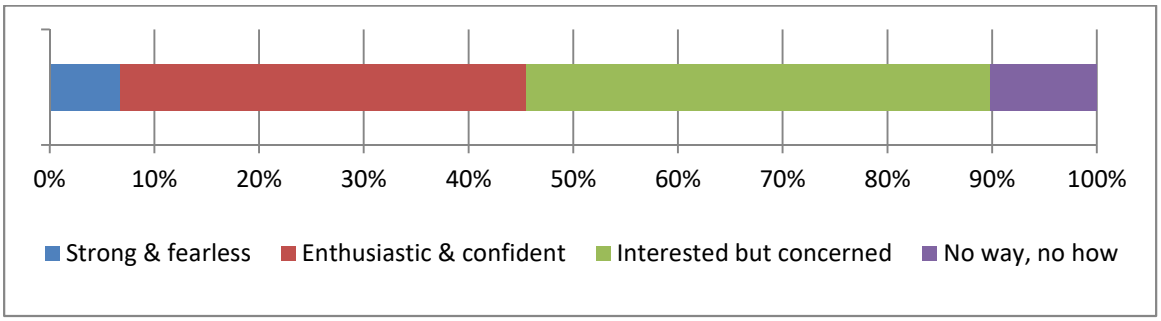
Health in All Policies (HiAP) is a collaborative approach to improving the health of all people by incorporating health, equity, and sustainability considerations into decision-making across sectors and policy areas. The health and well-being of Juneau County residents is affected by the policies and practices of many agencies and departments, not just medical, dental and mental health and public health series.

Recommendations:

1. Implementing this Juneau County Bike & Pedestrian plan is one step to increase healthy transportation and lifestyle choices for individuals in Juneau County.
2. Promote walking trails county-wide by creating a trail map & information booklet identifying each walking trail.
3. Promote bike routes county-wide by creating a route map & information booklet identifying each bike route (see Bike Booklet recommendation).

Bicycle Education

The county-wide online walking and biking survey that was done for this plan shows how Juneau County's population can be separated into four classes of bicyclists:



Strong & fearless. (I am confident in my abilities and will ride regardless of roadway conditions, amount of traffic, or inclement weather.)

Enthusiastic & confident. (I feel comfortable sharing the road with motor vehicles, but I prefer to ride on separate facilities like bike lanes. I may or may not ride in inclement weather.)

Interested but concerned. (I like riding, but don't do it regularly. I'm generally concerned that my route is not safe to ride, so I don't ride often. I definitely do not ride when the weather is bad.)

No way, no how. (I'm not interested in biking at all, not even for recreation.)

The challenge to increasing bicycling among the general population is making biking appeal to the large percentage of "interested but concerned" group.

Recommendations:

1. Promote safe driving around bicyclists by advertising: "Give Bikes 3 Feet" logo #1 on restaurant and bar placemats.
2. Install transportation bike route signs. On-road bike route signs tell motorists to expect to share the road with bikes in that area.
3. See Appendix 4 for various types of audience-specific bicycling education.
4. Work with the Wisconsin Bike Fed to bring walking and bicycling education classes (e.g. Share & Be Aware) to Juneau County.

Logo #1

Designate County Bicycle Routes

All the proposed bike routes and recommended improvements on **Map 8** will need County Highway Department coordination.

A bike route may be officially designated when there are "favorable conditions" for bicycling. If a route is inherently dangerous, then it should not be officially designated until it becomes acceptable to bicycle on possibly due to Map 8 improvements being made.

"Favorable conditions" is defined for Juneau County as:

1. having "good" or "moderate" Current Suitability in the Corridor Recommendations tables in Chapter 5, and
2. the elimination or minimization* of "pinch points" (Map 8) on that bike route segment.

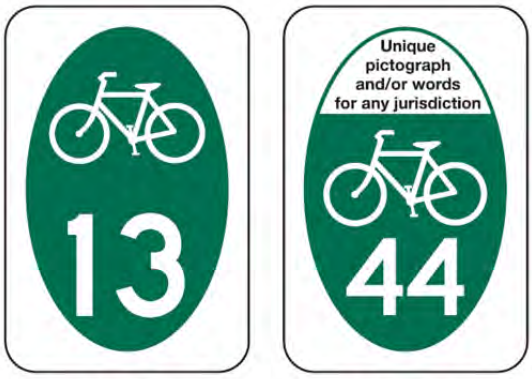
* **Minimization** means any signage or engineering treatment to improve safety.

Recommendation: Designate bike routes when favorable conditions exist for each corridor (Map 7). Each *proposed bike route* becomes a *bike route* when the County Highway Committee:

1. Officially designates by ordinance one of the bike route segments or part of a segment on Map 8 per WI State Statute 349.23; and
2. Installs bike route signs (see Recommendation: Possible County Bicycle Route Signs).

Possible County Bicycle Route Signs

Signs located within road and highway rights-of-way must follow guidance provided in the federal Manual For Uniform Traffic Control Devices (MUTCD), and supplemental guidance provided by WisDOT. This guidance in the MUTCD exists so that every sign is easy to identify and locate. There are choices available in the MUTCD too. Another resource for where to place MUTCD approved signs is the NACTO Urban Bikeway Design Guide (online).



Recommendations:

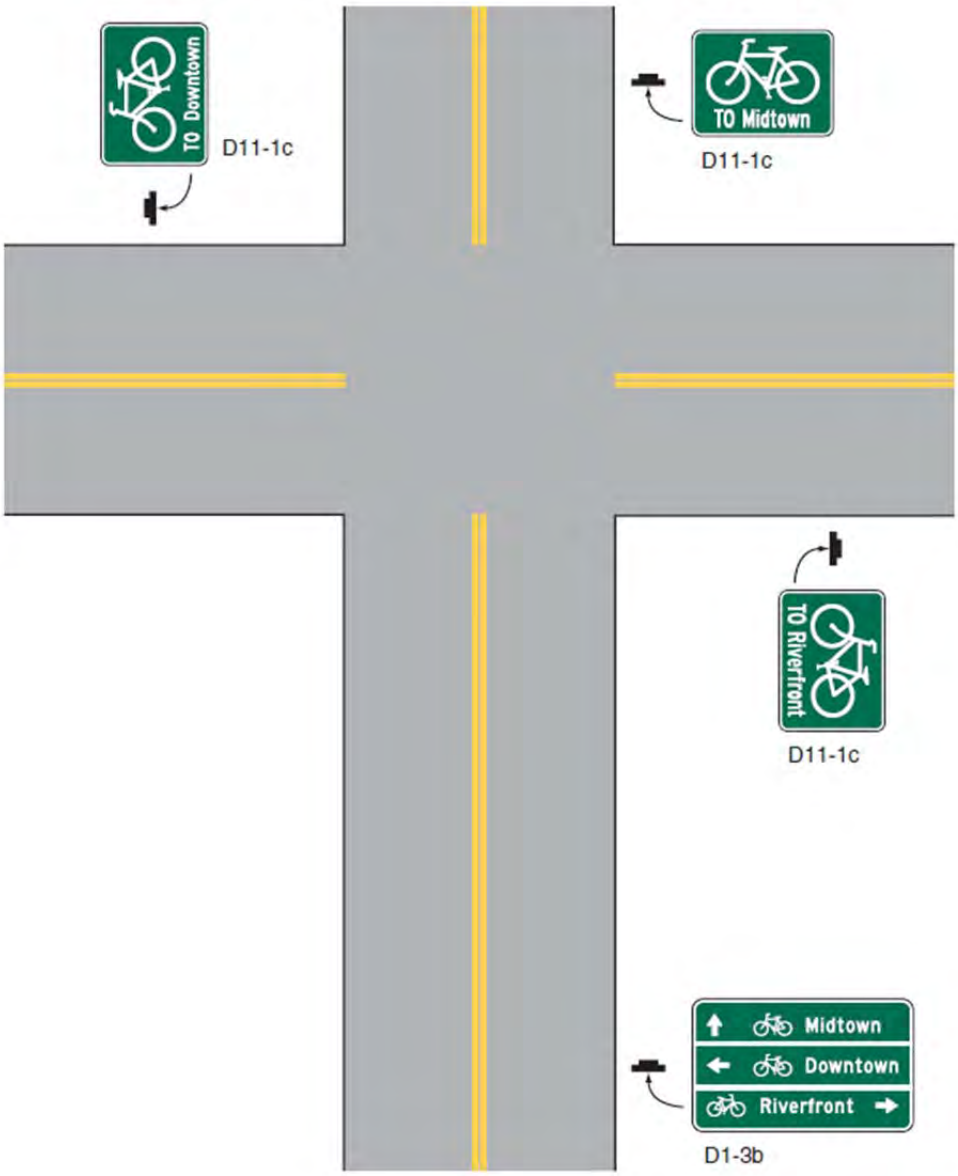
1. Determine if a logo will be used or not (M1-8a is the logo sign). Signs going into other counties may not want to have logos on them (similar to County Highways that are named the same in adjacent counties).
2. Determine what numbers will be used for each route. Numbers on Map 7 [Conceptual Corridors] are for reference and are not route numbers. Several of these Conceptual Corridors together that parallel a state highway may be a good set to call by the same number.
3. Coordinate ordering and sign installation per MUTCD requirements with the Juneau County Highway Department.
4. Ask a group to organize a fun bike ride to promote the opening of each bike route.

Possible Bike Loop Route Signs

Signs located within road and highway rights-of-way must follow guidance provided in the federal Manual For Uniform Traffic Control Devices (MUTCD), and supplemental guidance provided by WisDOT. This guidance in the MUTCD exists so that every sign is easy to identify and locate, and there is leeway provided in the MUTCD too. Another resource for where to place MUTCD approved signs is the NACTO Urban Bikeway Design Guide (online).

Figure 9B-6. Example of Bicycle Guide Signing

Figure 9B-6 is from the MUTCD.



Recommendations:

1. Determine if a Bike Loop Route is temporary (less than 2 years) or long term (2 years or longer). If it is a temporary route, then consider not signing it.
2. For long term loop routes, consider using "D1-3b" signs to show each route turn before an intersection (see Figure 9B-6). No need to install "D11-1c" signs, unless you want the rider to verify that they are on the correct route – particularly useful if the intersection is in a busier place (like in a city or village).
3. Coordinate ordering and sign installation per MUTCD requirements, and any volunteer assistance, with the Juneau County Highway Department.

County Bike Route Tourism Map

Snowmobile and ATV clubs around the state already create maps with their routes on them. Businesses pay to advertise on the map, and their establishment's location is identified on the map.

Recommendations:

1. Bicycle groups should create a bicycle route map to hand out with advertising on it.
2. Consider locating all of these routes on a mobile phone application.
3. Locate all these routes on the county tourism website.

Bicycling Booklet

Tourists and residents who want to bike often seek local knowledge as to what a good ride is. Creating a booklet of loop routes taps into that local knowledge to create a variety of distances and difficulties throughout the county.

Note: These loop routes may not have highway grade signs identifying them on the local roads, if they do, then follow Recommendation: Possible Bike Loop Route Signs. Maps and possibly downloadable routes onto mobile devices will be the primary means of telling a rider if they are on a bike route.

Components may include:

1. A variety of maps showing each route, its difficulty level (topography), and various mileage and time points;
2. At least a page dedicated to riding safely in traffic (or possible info graphic);
3. Location of public bicycle repair stands if any exist;
4. Location of various other amenities (e.g. parks & lodging); and
5. A variety of other optional features may also be included.

Printing a revision year on the map will tell everyone what map version they are looking at every time they use it.

Recommendation: Create a booklet, and then review it at least annually for possible revisions.

Mountain Bike Trails

Off-road locations for single-track mountain biking are starting to be developed in Juneau County. Camp Douglas created the Back Forty trails in 2016. The 2017-2021 Juneau County Outdoor Recreation Plan asked survey respondents what uses to include in the County Landfill property master plan, and mountain bike trails garnered the third most votes. See Map 2 for existing and possible future mountain bike trail locations.

Recommendations:

1. Establish mountain bike trails in areas that are suited to such use, whether shown on Map 2 or not.
2. Consider establishing local "friend of the bike park" groups for each mountain bike trail location to assist with trail development, maintenance, and possible programming.
3. Consider developing bike trails and skills areas for a variety of skill levels to get more people involved.

Bicycle Friendly Lodging

A hotel, motel, or campground is considered bike friendly if at a minimum they provide secure bike parking—either by allowing the bike in the room, or an indoor bike valet. If chambers of commerce or bike groups create a bike friendly designation, then amenities beyond secure bike parking may be required. An indoor bike valet could be a room off the lobby just accessible by staff (like a coat check) or access to a locked garage or shed, with in-garage/shed secure locking ability to a fixed object is also considered "indoors."

Covered secure outdoor bike parking like on a porch would be ok if there is a 24-hour front desk. A simple tarp secured over the bike would provide additional protection from the weather.

Common bike friendly amenities include:

- Secure bike parking (see above paragraphs);
- Provide a tire pump and/or tool kit;
- Have trail maps available;
- Provide bike washing station (optional unless muddy bikes are expected);
- (Optional) Have a partnership with a local bike shop or bike mechanic that can come on-site to fix a bike (for a fee to the client).

Note: A **bicycle wash** should just use standard municipal water pressure when designating an area to wash mud off of bikes. High pressured wash stations could cause damage by forcing abrasives into bike bearings.

Note: **Bicycle rental** – If an establishment wants to provide an extra service, then it could either provide complimentary bikes for guests (with locks and helmets), or could rent bikes (with locks and helmets) for guests.

If an establishment wants to provide either of these types of services, then an agreement could be made with a bike shop to provide bikes (with locks and helmets) and on-going maintenance.

Recommendation:

- Encourage properties that want to become bike friendly to look at the above descriptions.

Safe Routes To School

Safe Routes to School (SRTS) programs are an opportunity to make walking and bicycling to school safer for children in grades K-8, and to increase the number of families who encourage their children to walk and bike.

The North Central Wisconsin Regional Planning Commission (NCWRPC) is a local resource to contact about beginning such a process. For more information go online here: http://www.ncwrpc.org/srts/

Recommendation: Communities with schools serving K-8 grades should contact NCWRPC to improve walking and biking conditions around each elementary school.

Support Ice Age Trail Development

The National Ice Age Trail has an un-marked on-road segment within Juneau County (See Figure 9). No local Ice Age Trail chapter exists and no final off-road trail area is identified.

Recommendations:

1. Work with the Ice Age Trail Alliance to create a local Juneau/Adams County chapter of volunteers.
2. Create a final trail area plan.

Retrofit Bridge Railings

Bicyclists and pedestrians walking over bridges could lose their balance and fall over standard height bridge railings that are meant for vehicles.

Recommendation: On bike routes and within 1-mile of the edge of a trip generator (see Map 7) improve bridge railing heights to 54-inches (per WisDOT) above the pavement or sidewalk (if a sidewalk exists).

High priority: All bridges within 1-mile of trip generators.

High priority: Bridges over I-90/94 along bike routes.

Medium priority: Bridges over railroad tracks along bike routes.

Low priority: Bridges over I-90/94 not on bike routes.

Low priority: Bridges over creeks/streams.

A bridge without railings

Middle School Bicycle Mechanics Program

Kids learn through action. There are a few middle schools in Wisconsin that have created a young bike mechanic program within their buildings. Each program has started out small, and gradually increased over time.

Two examples include:

- **Omro WI Middle School's Bike Fleet:** The school developed a cycling program using a fleet of more than 35 donated bicycles that are available to students during physical education classes, lunch, and special events/trips. These bicycles are maintained by the school's "Young Mechanics," who are trained high school and middle school students working in a fully equipped bike shop on campus. Students also work on other bikes from the community and can earn-a-buck to pay for parts for their own bikes. See **Appendix 5** for more details.

- **Reedsburg WI: Pineview Elementary Bike Recycling Effort:** With the help of volunteers, fourth and fifth graders fix bikes to donate to impoverished nations. Student participants also have the chance to repair a bike of their own to take home. Unwanted bikes are collected from donations, junk piles, anywhere with cycles and parts to spare. Parts can be used from other bikes. The goal is to give kids valuable technical skills while helping countries where many people are too poor to buy automobiles.

  Recommendation: Consider replicating one of the above programs in each school district in Juneau County.

  1. Start by finding a person to champion the idea in each district;
  2. Then find an un-used space in a school building;
  3. Encourage the community to donate bike repair equipment, parts, and used bicycles (per your specific request sheet); and
  4. Staff the bike shop with a combination of school employees, volunteer adults, and kids (you pick the age) to start working on bikes.

Support Group Creation to Implement Bicycling & Pedestrian Plan

To continue the momentum of what efforts the Juneau County Bicycle & Pedestrian Advisory Group has done, an official group should be established. Juneau County Health Department has a variety of coalitions. Other County Board Committees have sub-committees. Establishing a permanent group provides continuity and meeting structure that will make plan implementation more reliable.

Recommendations:

1. Establish an official group of walking and bicycling enthusiasts as a health coalition or sub-committee of an existing County entity.
2. Have this official group review the Juneau County Bicycle & Pedestrian Plan recommendations annually to assist with what actions they will take to further bicycling in Juneau County over the next year.
3. This group could establish fun rides or walks to promote using a bike route segment on Map 8 – either in support of making a road improvement or to celebrate a new route being established.

Connect Development to Sidewalks

Driveways are always necessary for any business, and great care is taken to design their placement. Driveways provide access for customers, employees, and delivers. People like to travel—whether driving, walking, or biking—using the most direct route to a destination. When a sidewalk is in front of a business, then access to that sidewalk is a naturally direct connection to the front door of that business.

Recommendation: Communities should consider revising their driveway permit process to also require pedestrian access from public sidewalks.

Considerations:

1. If parking is allowed between the sidewalk and the front door of a business, then provide a cross-hatched or raised sidewalk to restrict parking in the walking area.
2. Provide a wide enough walking area for wheelchairs.

= Proposed sidewalk to connect front door of business to street sidewalk.

Construct Sidewalks

Reducing competition between different transportation modes will reduce crashes. Carefully designed pedestrian facilities improve safety for walkers. Creating good walking areas provides all people with greater mobility and the freedom to have safe transportation choices. Sidewalks provide a safe separation from faster moving motorists.

Recommendation: Communities should consider revising their Code of Ordinances to require sidewalks per Table 7 with the following considerations.

Considerations:

1. Sidewalks may be omitted from a side of the street where there are not any anticipated pedestrian trip generators (e.g. a river runs along the road, a freeway exists on that side of a road, etc.);
2. Sidewalks may be omitted from the side of the street where a bicycle path exists or is planned on the same side of the street.
3. Within two blocks of a school require a sidewalk along at least one side of each road. This would provide safe places for kids to walk as this 2-block area would have the highest number of walkers as kids collect from adjacent side streets.

Table 7: Recommended Guidelines for Sidewalk Placement	
Land-use/Dwelling Unit (Road's Functional Classification)	**New or Existing Urban and Suburban Roads**
Commercial	Prefer both sides; at least one side. Both sides in downtowns.
Industrial Park	If continuous parking lanes exist without turn lanes at intersections, then no sidewalks needed. Sidewalk segments or painted urban shoulders shall be installed where adults would not feel comfortable walking (e.g. no parking lanes, across railroad tracks, parking lanes that are frequently used for motor vehicle parking, etc.)
Residential* (Principal or Minor Arterials)	Both sides.
Residential* (Minor or Major Collectors Or roads that act** as Collectors)	Prefer both sides; at least one side, or 6-foot shoulders (includes gutter pan if curb & gutter exist) both sides if 35-mph or slower road, or 8-foot shoulders both sides if 40-mph or faster road.
Residential* – More than 4 units/acre (Local Road)	Prefer both sides; at least one side.
Residential* – 1 to 4 units/acre (Local Road)	Prefer at least one side; at least two 12-foot wide lanes.
Residential* – Less than 1 unit/acre (Local Road)	At least two 12-foot wide lanes.

Notes for additional consideration:

1. This table is to assist local governments with a prudent way of providing safe walking areas for the most vulnerable users—elderly, disabled, and children. Additional sidewalks may be self-required by any local governing body.
2. Every effort should be made to add sidewalks where they do not exist and to complete missing links per the above table.
3. *Residential – as identified on a local government's future land use map in their comprehensive plan.
4. **If several streets empty onto "road A" that is not functionally classified as a collector, then for the purpose of this table "road A" acts like a collector, and the Table 7 recommendation should be followed.

Connect Adjacent Subdivision Developments

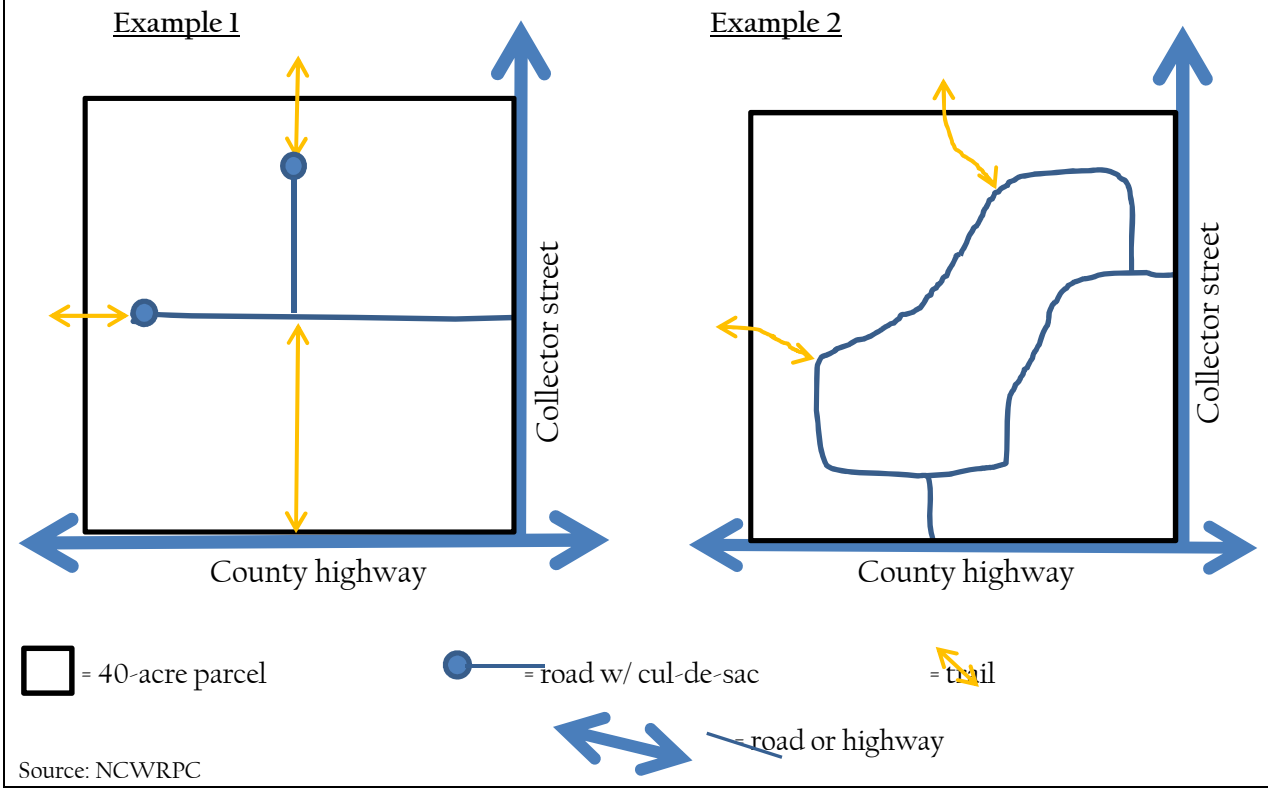
Subdivision regulations can be used to require residential land subdividers to dedicate a portion of subdivided land for permanent park and open space use, roads, paths, and a few other public resources. Numerous small town memorial parks have been acquired through the generosity of local citizens. Local developers are often looking for what amenities to provide to sell their house lots faster. A public trail system would provide a direct recreational and transportation benefit to homeowners in that subdivision and the greater public.

Recommendation: Consider revising local subdivision ordinances to require every 40 acre square of development to have at least one bicycle & pedestrian connection to each adjoining 40 acre square (Figure 16), and to require local roads to be wide enough to construct sidewalks adjacent to all roads.

Considerations:

1. Walking and bicycling paths should be at least 10-feet wide. Equipment used to lay asphalt or concrete is usually wider, so require 20-foot wide easements for future maintenance.
2. Even if adjacent development is not planned for the foreseeable future, if you have a permanent easement, then you can build the path at any time the need arises.
3. Sidewalks should be at least 5-feet wide, and at least 5-feet away from the edge of the travel lane of the adjacent road—15-feet adjacent to a travel lane would suffice for sidewalk installation and maintenance. Contact your local WisDOT Bicycle & Pedestrian Coordinator for designing sidewalks in difficult situations.

Figure 16 Bike & Pedestrian Connectivity Among Adjacent 40-acre Parcels



Source: NCWRPC

Chapter 5: Corridor Recommendations

Routing Criteria

NCWRPC—with guidance from the Advisory Group—used the following set of criteria to establish bicycle routes:

1. Connect trip generators (see Conceptual Corridors map).
2. Avoid high traffic roads whenever alternatives are available, even if this requires some extra distance. Many town roads are scenic and paved (i.e. chip sealed or asphalt, which also controls dust).
3. Design all routes and necessary improvements for families with middle school children or older in mind.
4. Establish off-road paths when possible.
5. When high traffic count roads (e.g. STH 21) or high weekend traffic roads (e.g. CTH G in Germantown) are used, then consider improving the road using these additional factors:
    - Drivers pulling a trailer (e.g. boat, camper, etc.) are in a relaxed state-of-mind when they travel in Juneau County, and are traveling fast, so reducing their need to maneuver slightly out of their lane to pass a bicyclist, and providing adequate space for bicyclists outside of motor vehicle driving lanes would provide a safer road and less stress for both users.
    - Drivers pulling a trailer for recreation may wander over lane lines especially on curves because they:

        1) may not be fully aware of how wide their total vehicle is, or

        2) may need additional lane width to stabilize a wandering trailer.
    - Safety—particularly for families, those considered "interested but concerned," and youth bikers—is a key factor for bicyclists to determine if they will use a specific road to ride on, so extra facility considerations are needed for this group to consider a road safe enough to ride.
    - Less stress is a factor when motorists and bicyclists decide where to spend their tourism money—recreation and economic appeal of an area.

Facility Types and Design Guidance

This plan makes facilities and policy recommendations intended to improve cycling conditions in Juneau County. The following facility treatments that may be appropriate for communities in Juneau County are provided by WisDOT, the Federal Highway Administration's *Small Town and Rural Multimodal Networks Guide*, the National Association of City Transportation Officials (NACTO)'s *Urban Bikeway Design Guide*, and the North Central Wisconsin Regional Bicycle & Pedestrian Plan's recommendations and guidance for facility improvements. Each treatment is described in detail, with benefits and drawbacks and design considerations described.

Mixed Traffic Facilities

These facilities are most appropriate for accommodating multimodal transportation and motorized vehicles in the same road space. In general, these facility types are most appropriate for low speed, low volume traffic and tend to require generally lower levels of investment.

Yield Roadways

Definition: *Bidirectional motor roadway that utilizes a road diet to slow traffic and create a comfortable space for pedestrian and bicyclists on the road.*

Appropriate Setting: *Low speed, residential areas*

Benefits: Affordable to construct and maintain. Meshes well with traditional neighborhood quality. Design can easily support on-street parking and minimize storm water runoff.

Other Considerations: *Road dieting and visuals (like trees) can narrow corridors to lower speeds*

Design Guidelines

- *Width should be between 12 and 20 feet.*
- *When roadway functions as two-lane, single-lane street, pull-out areas should be provided very 200-300 feet with parking openings 16-20 feet wide to accommodate emergency vehicles*

Yield Roadway in Ennis, MT
Source: FHA Small Town & Rural Multimodal Networks 2016

Bicycle Boulevards

Definition: *A route through a neighborhood (or to a local destination) on a low stress roadway shared with motor vehicles.*

Appropriate Setting: *Low stress roadways in incorporated or otherwise dense areas. A route to an in-town destination.*

Benefits: *Perfect for small cities and villages (i.e., Antigo & White Lake). Ideal routing measure to in-town destinations or creating continuous paths in communities for alternative transportation.*

Limitations: *May require more pavement to accommodate pavement foot traffic. Not most appropriate for rural settings.*

Design Guidelines

- *Requires pedestrian crossing treatments and traffic calming in order to be fully successful.*
- *Should not cross major roadway if at all possible*
- *Shared roadway between bicycle and motor vehicle should be between 12 and 22 feet*
- *Parking lane should be seven feet in length*
- *Shared Arrow ('Sharrow') markings and route wayfinding are necessary for a successful bicycle boulevard.*

Bike Boulevard in Nampa, ID
Source: National Association of City Transportation Officials

Advisory Shoulders

Definition: *Bidirectional motor roadway that visually delineates a designated, non-exclusive space for bicyclists on roads that are otherwise too narrow for bike lanes with hashed lane markings*

Appropriate Setting: *Rural roads with low traffic volumes, and on some collector routes.*

Benefits: *"Road Diet" style feature that clearly communicates where users should operate. Affordable, and requires little community investment.*

Limitations: *May require more pavement to accommodate pavement foot traffic. May require community acclimation.*

Design Guidelines

- *Advisory Shoulder should be six feet wide, and absolutely no less than four feet wide in circumstances with no curb or gutter*
- *Center two-way travel lane should be between ten and 18 feet, most preferably between 13.5 and 16 feet.*

Visually Separated Facilities

These facilities are most appropriate for designating specific spaces for multimodal transportation in the same road space as vehicular traffic. These facility types are generally suited to higher traffic-volume roads.

Pedestrian Lanes

Definition: *Bidirectional motor roadway that visually delineates an exclusive, designated space for pedestrians.*[2]

Appropriate Setting: *Local and collector roads in small cities and villages (i.e., Antigo & White Lake)*

Benefits: *Ideal treatment for providing interim, temporary connectivity in lieu of sidewalks*

Limitations: *Not a recommended treatment for rural roads. Challenging to remove snow and to sweep. Risky for visually impaired pedestrians. May be perceived as a space for bicycles.*

Design Guidelines

- *Pedestrian Lane should be between five and eight feet in width*
- *Special care should be made that the surface of a pedestrian lane be slip resistant and durable for wheelchairs*
- *Appropriate markings and signage highly recommended to clarify intended and exclusive use of lane for pedestrians*

Bike Lanes

Definition: *An exclusively designated lane for bicyclists on a roadway.*

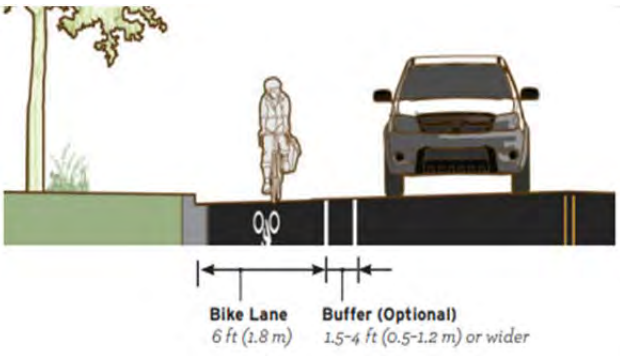
Appropriate Setting: *Highly versatile to many settings, but most appropriate on roadways with moderate traffic going moderate speeds*

Benefits: *Highly versatile to road types and traffic levels. Sends very clear visual cue to drivers. Ideal connector of local bike routes to larger corridors. Widely recognized facility type*

Limitations: *May provide stress to bicyclists in high traffic situations. Special care needs to be given when bicycle lanes encounter intersections.*

Design Guidelines

- *Width*
  - *Preferred minimum width: 6.5 feet, absolutely minimum of four feet (without curb and gutter) or five feet (with curb and gutter)*
  - *Bike lanes seven feet wide or greater should be accompanied with a buffer zone to discourage motor vehicle use of bike lane for parking or driving.*
- *Buffers should be between 1.5 and four feet in width*
- *It is essential that bike lanes be marked with consistently solid lines.*
- *Pavement marking are essential, and signage optional but encouraged.*



[2] In Wisconsin, a pedestrian lane must be marked on both sides of the roadway, with pedestrians walking toward vehicular traffic.

Paved Shoulders

Definition: *A clearly designated space reserved for bicyclists or pedestrians along a roadway when sidewalks or other facility treatments are for whatever reason unattainable.*

Appropriate Setting: *Collector roads and highways with moderate or high traffic and truck volumes. Additionally appropriate for longer travels on rural routes*

Benefits: *Provides achievable facility to host rural routes when sidewalks, shared use paths, and other facility types are not possible. Especially useful in accommodating multimodal transportation with higher speeds*

Limitations: *Requires wider roadways*

Design Guidelines

- *Should accommodate "side-by-side" ridership (i.e., two bicyclists or pedestrians travelling side by side comfortably in the paved shoulder*
- *Widths*
    - *Minimum width: four feet*
    - *Collector Routes: five to 6.5 feet*
    - *Arterial routes: seven to eight feet*
- *Optional but recommended buffer should be between 1.5 to four feet*
- *Other proven safety measures in the buffer include striping and rumble strips*

Climbing Bike Lanes

Definition: *A specially designed set of bike lanes on uphill roads or roads too narrow to accommodate bidirectional bicycle lanes*

Appropriate Setting: *Narrow or hilly road segments*

Benefits: *Provides for bidirectional bike traffic in special circumstances while minimally interfering with vehicular traffic*

Limitations: *Facility treatment for very specific circumstances*

Design Guidelines

- *One dedicated bike lane travels in the uphill direction*
- *Downhill lane is shared by cars and cyclists*
- *Clear "Sharrow" markings should indicate both lanes*

Physically Separated Facilities

These facilities operate separately and at times completely independently of roadways. These facility types are exclusively for multimodal transportation, and interact only indirectly or occasionally with motor vehicles.

Shared Use Paths

Definition: *A bidirectional, off-road facility that is typically in a park or an abandoned railroad right-of-way, that offers low-stress and exclusive experiences for all forms of active transportation.*

Appropriate Setting: *Outside of built up areas; connector between communities, neighborhoods, etc.*

Benefits: *Completely independent of motor vehicle transportation network; displays rural character; low-stress; attractive for tourism and economic development.*

Limitations: *Sometimes requires more public resources, community investment; intersections with roadways require special attention.*

Design Guidelines

- *Width of path itself should be between ten and twelve feet wide, depending on volume of user traffic.*
- *Asphalt is most common surface material, although gravel, chip-seal over gravel, and concrete are also acceptable.*
- *A minimum of a two-foot clearance should be present to signposts or related features.*

Sidepaths

Definition: *A bidirectional, off-road facility exclusively reserved for bicyclist and pedestrian transportation that runs parallel to the roadway.*

Appropriate Setting: *Alongside collector roads and highways with limited points of conflict at intersections and driveways. Can be suitable for rural and built-up areas alike.*

Benefits: *Extremely versatile; maintains rural and small town character; a widely preferred facility to a paved shoulder for long and short connections.*

Limitations: *Sometimes requires more public resources, community investment; intersections with roadways require special attention.*

Design Guidelines

- *Width of path itself should be between eight and twelve feet wide, depending on volume of user traffic.*
- *A minimum of a two foot clearance should be present to signposts or related features.*
- *Asphalt is most common surface material, although concrete is also acceptable.*
- *Sidepaths should be at least five feet removed from the roadway unless a physical barrier is present.*

Sidewalks

Definition: *A separated facility dedicated to pedestrians that almost always run parallel to roadways.*

Appropriate Setting: *Cities, villages, other built up areas (Antigo, White Lake, Elcho, etc.).*

Benefits: *Applicable and appropriate to all but the very lowest speed roadways; widely recognized facility type; versatile connector to a wide variety of destinations.*

Limitations: *Can be costly; may be difficult in especially dense areas lacking space.*

Design Guidelines

- *Width of sidewalk should be six feet, although five feet is acceptable in spatially constrained areas.*
- *Sidewalks require a frontage zone (space between buildings and sidewalk) and furnishing zone (space between sidewalk and roadway).*
- *Frontage zone should be between one and two feet.*
- *Furnishing zone should be between four and six feet.*
- *See Table 7 in the Recommendations chapter.*

Sidewalks separated from the roadway are the preferred accommodation for pedestrians. Sidewalks are a central staple to any bicycle and pedestrian plan, and they provide many benefits including safety, mobility, and healthier communities. Roadways without sidewalks are more than twice as likely to have pedestrian crashes as sites with sidewalks on both sides of the street. Providing walkways for pedestrians dramatically increases how well pedestrians perceive their needs are being met along roadways. The wide the separation between the pedestrian and the roadway is, the more comfortable the pedestrian facility. (U.S. Department of Transportation Federal Highway Administration).

When should sidewalks be installed on both sides of the road?

- New and existing Urban & suburban streets
- New and existing residential arterials
- New residential collectors
- Existing residential collector routes with multifamily buildings

When should sidewalks be installed on one side of the road?

- Existing residential collectors
- Existing residential local roads with more than four units per acre
- New Residential local roads with one to four units an acre

When should shoulders be installed?

- New Local Residential Roads with less than one unit an acre
- Existing suburban and urban streets

Other Facility Improvement Guidelines

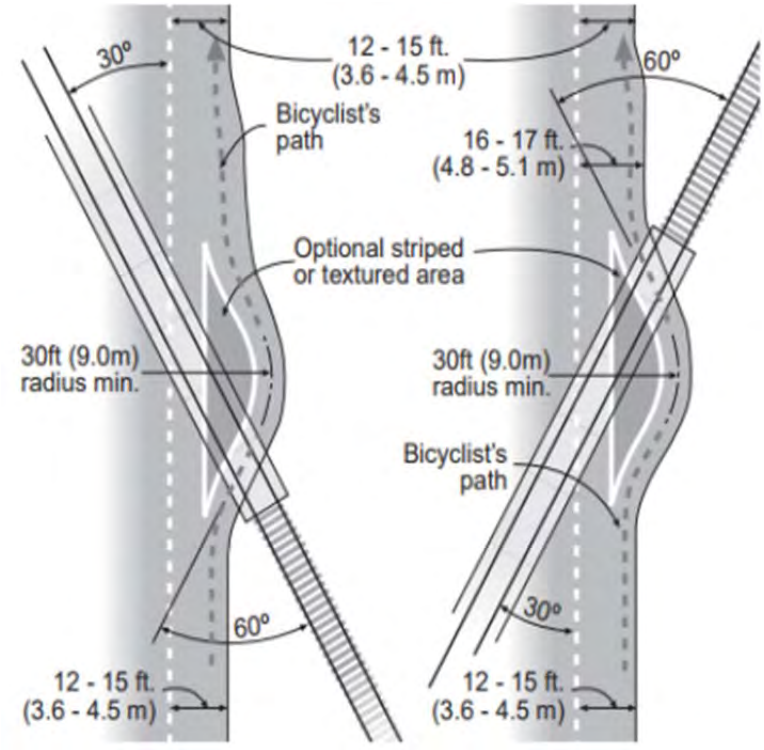
Railroad Crossings

Railroad crossings should be both straight and run perpendicular to rail tracks. There have been many bicycle crashes that have resulted from improper crossing angles and the smoothness of the crossing itself. The following issues and appropriate treatments for barriers posed by railroad crossings are as follows.

Crossing angles are acutely hazardous when crossing the tracks at 30-degree angles or less. Crossing angles between 31-degrees and 60-degrees also would benefit from remedial action. Adjusting the bike lane, or flaring the roadway, can mitigate this problem, as illustrated in **Figure 17.**

Gaps between the roadway and the rail track itself are the primary cause of bicycle accidents involving railroad crossings. Fixing gaps on the outside of the rail can be performed easily with rubber or polymer filler. However, the gap on the inside of each rail must remain open to keep train wheels on the tracks. While this gap cannot be completely reconciled, the risk can be greatly mitigated by using rubber or concrete installations to create a smoother pathway across the tracks. At the very least, signage should warn bicyclists of the potential risks of an upcoming railroad crossing. Lack of smoothness can also cause bicycle crashes at railroad crossings regardless of gaps or crossing angles

Figure 17: Railroad crossing angles



Source: WisDOT, Wisconsin Bicycle Facility Design Handbook, 2004

Bridges

Bridges without proper accommodations for active transportation can be significant barriers for bicyclists and pedestrians hoping to reach point A to point B, either forcing detours or making routes altogether impossible. Federal policy from the United States Department of Transportation highly encourages the accommodation of bicycle and pedestrian needs on bridges during bridge construction and rehabilitation. Title 23 United States Code **§217 states the following:**

"In any case where a highway bridge deck being replaced or rehabilitated with Federal financial participation is located on a highway on which bicycle are permitted to operate at each end of such bridge, and the Secretary determines that the safe accommodation of bicycles can be provided at reasonable cost as part of such replacement or rehabilitation, then such bridge shall be so replaced or rehabilitated as to provide such safe accommodations." (United States Department of Transportation)

Aside from federal policy encouraging multimodal bridge design, accommodating bicycle and pedestrian modes of transportation on the same bridge results in long-term cost savings as improvements are added during

rehabilitation of existing bridges. Constructing a bicycle or pedestrian facility during a bridge upgrade project will almost always be more cost effective than providing the same facility on a completed project or constructing a standalone bicycle and pedestrian bridge. [3]

Pavement Markings

Painting clear bicycle lanes as well as shared-lane arrows ("sharrows") on roads provides clear routes for both cyclists and motorists. Additionally, there are multiple designs for painting a high visibility crosswalk that bring increased visibility and awareness of proper pedestrian pathways. These relatively cost-effective methods can bring a sense of clarity and safety to both drivers and bicyclists utilizing the roads. These crosswalk styles can be found in Figure 18 below.

Figure 18: Crosswalk Styles

Source: U.S. FHWA

Signage & Wayfinding

A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decisions points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes. Signage can indicate distance and/or time estimates for destinations. Wayfinding signage particularly benefits infrequent bicyclists by reducing the barrier to entry of figuring out a route. It also serves to remind motorists that they are likely to encounter bicycle traffic. See **Appendix 6** for additional wayfinding resources.

[3] Jesse Cohn and Elliot Sperling, *Improving Pedestrian and Bicycle Connectivity during Rehabilitation of Existing Bridges*, Fehr & Peers (Pedestrian & Bicycle Information Center: White Paper Series, November 2016). http://www.pedbikeinfo.org/cms/downloads/PBIC_WhitePaper_Bridges.pdf.

Facility Cost Estimates

The Pedestrian & Bicycle Information Center, in conjunction with FHWA and the Robert Wood Johnson Foundation, released *Costs for Pedestrian and Bicycle Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public* in 2013. The report gathers nearly 1,800 observations of infrastructure costs from bids from departments of transportation across the country.

To estimate potential costs for similar facilities in Juneau County, NCWRPC calculated an average (adjusted for inflation) of similar bids per facility type. These averages are then adjusted for the cost of living in north central Wisconsin compared to the nation through the Cost of Living Index (COLI) compiled by the council for Community and Economic Research, a nationally recognized measure used by economists, business and researchers to compare prices in relativity to cost of living for urban areas across America.

The most recent COLI measure for Wausau – the nearest urbanized area – shows that costs are 96.5% of the national average in Wausau. All averages are multiplied by .965 to establish an estimate for facility treatments in Juneau County.

These estimates are intended to provide a "ballpark" estimate for County officials and stakeholders when considering future projects. These estimates should not be used as an assumed price equivalent to that provided in a bid by a company.

Bike & Ped Facility Cost Estimates, 2018

Facility Type	2012 Natl. Average*	Est. Average for Central Wisconsin (2018)***	Unit
"Sharrow" marking	$180	$190	*1 Sharrow*
Bench	$1,550	$1,636	*1 Bench*
Bicycle Lane	$133,170	$140,530	*1 Mile*
Bicycle Rack	$660	$697	*1 Bike Rack*
Boardwalk	$2,219,470	$2,342,129	*1 Mile*
Bollard	$730	$770	*1 Bollard*
Bridge (Pre-fab Steel)	$206,290	$217,690	*1 Bridge*
Bridge (Wooden)	$124,670	$131,560	*1 Bridge*
Curb & Gutter	$21	$22	*1 Linear Foot*
Diverter (e.g. traffic circle [not a roundabout])	$26,040	$27,479	*1 Diverter*
Diverter (Semi-/Partial)	$15,060	$15,893	*1 Diverter*

Fencing	$130	$137	*1 Linear Foot*
Flashing Beacon	$10,010	$10,563	*1 Flashing Beacon*
Gateway Sign	$340	$359	*1 Sign*
Median	$7.26	$7.66	*1 Square Foot*
Multi-Use Trail (Paved)	$481,140	$507,730	*1 Mile*
Multi-Use Trail (Unpaved)	$121,390	$128,099	*1 Mile*
Paved Shoulder (Concrete)	$6.64	$7.01	*Per Square Foot*
Pedestrian Crossing (Striped)	$360	$380	*1 Crossing*
Pedestrian Railing	$100	$105	*1 Linear Foot*
Raised Crosswalk	$8,170	$8,621	*1 Raised Crosswalk*
Roundabout/Traffic Circle	$85,370	$90,088	*1 Roundabout/Traffic Circle*
Sidewalk (Concrete)	$32	$34	*1 Linear Foot*
Signed Bicycle Route	$25,070	$26,455	*1 Mile*
Signed Bicycle Route with Improvements	$239,440	$252,673	*1 Mile*
Speed Bump	$1,550	$1,636	*1 Speed Bump*
Speed Hump	$2,640	$2,786	*1 Speed Hump*
Speed Table	$2,400	$2,532	*1 Speed Table*
Stop/Yield Sign	$300	$317	*1 Sign*
Street Trees	$430	$454	*Per Tree*
Streetlight	$4,880	$5,149	*1 Streetlight*
Striped Crosswalk	$7.38	$7.79	*Per Square Foot*
Wheelchair Ramp	$740	$781	*1 Ramp*

Source: University of North Carolina Highway Safety Research Center, 2013 (NCWRPC estimates, 2018)

2012 Dollars, per source paper National Averages are adjusted to match the Cost of Living Index (COLI) for the Wausau Urban Area during the 2010 Census, which assumes overall costs to be 96.5% of the national average.*

Corridor Recommendations

The following corridors were identified for development as part of a Juneau County walking and biking system utilizing the established ***Routing Criteria*** and the facility types and design guidance. The conceptual corridor network for Juneau County is illustrated on **Map 6**. Potential countywide bike routes & potential improvements are shown on **Map 7**.

The proposed corridors are outlined in the following tables with discussion on a variety of factors including:

- Route Justification
- Existing or proposed portions
- On or off road portions
- Surface type and what uses for year-round use
- Key connections
- Suitability for bicycles and pedestrians
- Potential Accommodations & Improvements
- Time Frame
  - Short-term: 1-5 years
  - Mid-term: 6-10 years
  - Long-term: 10+ year

Corridor: Wilderness to Nekoosa (#1)

Justification: The Advisory Group emphasized that CTH G was very busy on weekends in summer, which is when visitors to Wilderness County Park will want to explore the area on bike. It is expected that most visitors to Wilderness County Park that want to bike will only travel within 10-miles of the Park. This corridor is also for people who are looking to bike from Nekoosa to Necedah, and may wish to rest at the Park.

Description: The proposed route uses local town roads instead of the "undesirable" CTH G. In addition to route number signs, wayfinding signs from within Wilderness County Park out to the local road and back will be needed to show bicyclists which driveways and roads to take to access the Park or to get out of the Park.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On Road	Asphalt	Wilderness County Park – Hardwood Bombing Range – Nekoosa	**Undesirable** (if CTH G was used) **Best**** (only local roads are used in the route)	Only signing the route is needed.	Short-term

Responsible Parties: Juneau County Highway Department; Juneau County Land, Forestry, & Parks Department; Towns of Armenia & Necedah; and Village of Necedah.

***This represents NCWRPC staff analysis and not an official rating from WisDOT. However, CTH G is rated "undesirable" by WisDOT.*

Corridor: Wilderness to Mather (#2)

Justification: This is part of a transportation route for travel between Nekoosa and Necedah, and also provides cross-county access on a paved road from Wilderness County Park through the Necedah National Wildlife Refuge to Mather.

Description: The proposed route uses local town roads. In addition to route number signs, wayfinding signs directing riders north to Babcock or south to Necedah would be appropriate. This proposed route may also connect to bike loops within the Necedah National Wildlife Refuge, which may be signed in the future too.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On Road	Asphalt	Wilderness County Park – Necedah National Wildlife Refuge – Mather	Best** (only local roads are used in the route)	Only signing the route is needed.	Short-term

Responsible Parties: Juneau County Highway Department; and Towns of Armenia & Necedah.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Necedah to Babcock (#3)

Justification: This is part of a transportation route for travel between Necedah and Babcock; and also provides access to Wilderness County Park.

Description: The proposed route in Necedah uses a path, STH 80 and then mainly local roads all the way north into Babcock. From about 9th Avenue North, north to the county line, this proposed route uses gravel roads that are in good condition. Dust may be a problem if too many interactions occur between bicyclists & pedestrians, and motor vehicles & ATV/UTVs. North of the county line, this road is paved all the way into Babcock.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On Road	Asphalt and gravel	Necedah – Wilderness Park Route – Babcock	Best**	Only signing the route is needed. Controlling dust on the gravel roads may be necessary if high levels of bicycling occur.	Short-term

Responsible Parties: Juneau County Highway Department; Village of Necedah; and Towns of Armenia & Necedah.

***This represents NCWRPC staff analysis and not an official rating from WisDOT. However, STH 80 is rated "best" by WisDOT.*

Corridor: Necedah to The Refuge to Mather (#4)

Justification: The Village and Town of Necedah both noted that this proposed route (Necedah to The Refuge) already receives a lot of bicyclists, and some walkers. If the gravel road within the Refuge was paved (i.e. chip-sealed, or asphalt) then this would become an all-weather route, so after a rain bicyclists would use it even more. From The Refuge to Mather, this segment is a transportation connection to get between Necedah and Mather.

Description: The proposed route uses local roads. From Necedah to the edge of the Necedah National Wildlife Refuge (The Refuge) the road is paved. Within the Refuge the road to the Refuge Visitors Center is gravel. An all-weather surface may be necessary, so chip-sealing the gravel road to the Refuge Visitors Center is a less expensive way to pave this road.

From the Visitors Center to CTH H is a series of gravel roads through The Refuge and through the Meadow Valley Wildlife Area.

No recommendation exists for chip-sealing this series of gravels roads due to the low numbers of expected bicyclists.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On Road	Asphalt or gravel	Necedah – Necedah National Wildlife Area Visitors Center – Mather	Best**	Only signing the route is needed; but chip-sealing the gravel road ONLY between Necedah and the Visitors Center is strongly suggested as this route will be heavily promoted within the Village of Necedah.	Short-term

Responsible Parties: Village of Necedah, Town of Necedah; Necedah National Wildlife Refuge; Meadow Valley Wildlife Area; and Juneau County Highway Department.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Necedah to Adams County (#5)

Justification: The Village and Town of Necedah, and the Town of Germantown all noted that this proposed route already has a lot of bicyclists and pedestrians that use adjacent roads, but no safe way to use STH 21 or to cross the Yellow River.

Description: The proposed route is mainly on an off-road path within the STH 21 right-of-way. Bicyclists and pedestrians from the Necedah Village Hall encounter a pinch point which is the STH 21 bridge over the Yellow River – either very wide shoulders or an off-road path are needed to get over the Yellow River. An off-road path of at least 10-feet wide is needed for pedestrian and bicycle traffic from the STH 21 bridge, east to Petenwell Road.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	Fully off-road, or partial path and partial paved shoulders	Asphalt	Necedah – CTH Z bike path in Adams County – Arkdale	Undesirable/Higher Volume paved shoulders.	A 10-foot wide asphalt path, or 8-foot wide paved shoulders are needed for the entire route. The STH 21 bridge needs wide shoulders, or an alternative bridge is needed to cross the Yellow River.	Long-term (must wait for WisDOT to improve STH 21)

Responsible Parties: WisDOT; Juneau County Highway Department; and Village of Necedah.

Corridor: Necedah to Tomah (#6)

Justification: This is a transportation alternative to using STH 21 from Necedah to Tomah. Along the way is the Oak Ridge Trail system on county forest land. This is also part of a transportation route from Necedah to Camp Douglas.

Description: The proposed route is on STH 58-80 in Necedah, and then on paved town roads the remainder of the route to Tomah.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Necedah – Oak Ridge Trail (county trail system) – Tomah	Best**	Only signing the route is needed.	Short-term

Responsible Parties: Juneau County Highway Department; Village of Necedah; Towns of Necedah, Clearfield, and Orange.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Camp Douglas to Mather (#7)

Justification: This is a transportation route from Camp Douglas through the Central Wisconsin Conservation Area to Mather. This is also part of a transportation route from Camp Douglas to Necedah.

Description: The proposed route is on CTH H, and a gravel town road parallel to STH 21 (22nd St W).

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt and gravel	Camp Douglas – Central Wisconsin Conservation Area – Mather	Best	Only signing the route is needed. Controlling dust on the gravel road may be necessary if high levels of bicycling occur.	Short-term

Responsible Parties: Village of Camp Douglas; Town of Cutler; and Juneau County Highway Department.

Corridor: Camp Douglas to Mill Bluff State Park (#8)

Justification: The Village of Camp Douglas and Advisory Group see value in making this connection to a locally used state park for day trips. If the Omaha Trail becomes well used again, then this potential route would direct visitors to an additional destination—Mill Bluff State Park.

Description: The proposed route is on CTH C in Juneau County and on CTH W in Monroe County.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Camp Douglas – Mill Bluff State Park	Best	Only signing the route is needed. See Camp Douglas map in Attachment 7 for additional pedestrian improvements in the Village.	Short-term

Responsible Parties: Juneau County and Monroe County Highway Departments; and Village of Camp Douglas.

Corridor: Camp Douglas to Elroy (#9)

Justification: The Omaha Trail needs a new surface in many spots per Juneau County Land, Forestry, & Parks Department staff. The Juneau County Outdoor Recreation Plan has a recommendation in it to create a permanent off-road trail in Elroy for the Omaha Trail. Additional recommendations and justification exist under the Omaha Trail recommendation in Chapter 4.

Description: The Omaha Trail is a county managed trail on a former railroad bed. See the Omaha Trail recommendation in Chapter 4 for additional improvements. See the Elroy map in Appendix 7 for additional improvements in Elroy.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
EXISTING	Omaha Trail (Off-road) On-road in Elroy	Chip-sealed gravel Asphalt road	Camp Douglas – Hustler – Elroy	Best**	New chip-seal over entire trail, with additional gravel underlayment in spots. Work with willing landowners to acquire a permanent easement for the Omaha Trail in Elroy. See the Omaha Trail recommendation in Chapter 4 for additional improvements. See the Elroy map in Appendix 7.	Short-term (for trail surface improvements, and for Elroy's Appendix 7 improvements) Mid to long-term (for other improvements in Chapter 4, and establishing the Omaha Trail in Elroy on an off-road path)

Responsible Parties: Juneau County Land, Forestry, & Parks Department; Village of Camp Douglas; Village of Hustler; and City of Elroy.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: New Lisbon to Hustler (#10)

Justification: There are gravel shoulders on CTH A. WisDOT classifies this highway as "best" for bicycling due to low traffic (930 vehicle traffic count). The Advisory Group is concerned that families in New Lisbon will not use this short route to access the Omaha Trail, because no paved shoulders exist. This could become a well-used route from New Lisbon families and individuals that want to: 1) access the Omaha Trail; 2) travel to Camp Douglas; and 3) travel to Mill Bluff State Park. This route would also provide access to additional destinations in New Lisbon off of the Omaha Trail.

Description: There are wide gravel shoulders on the 24-foot wide CTH A. To reduce cost in adding paved shoulders, consider painting two 11-foot lanes, and then paving 4 additional feet for shoulders on each side. If speeding continues to be a concern as more bicyclists use this route, then consider installing a bike friendly white-line rumble strip (contact WisDOT) to keep motorists in their lane.

See the New Lisbon map in Appendix 7 for additional improvements in New Lisbon.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On road	Asphalt	New Lisbon – Hustler	Best	Only signing the route is needed; but it is also recommended to add 5-foot paved shoulders. See New Lisbon map in Attachment 7 for additional pedestrian improvements in the City.	**Short-term** (to sign route) **Mid to long-term** (for adding paved shoulders, and New Lisbon improvements)

Responsible Parties: Juneau County Highway Department; City of New Lisbon; and Village of Hustler.

Corridor: New Lisbon to Mauston (#11)

Justification: There are only gravel shoulders on STH 80 and CTH B. WisDOT classifies this part of STH 80 as "undesirable" for bicycling due to high traffic and no paved shoulders. CTH B does not have a WisDOT traffic count, and is classified as having "best" bicycling conditions due to the low traffic count. The Advisory Group wants to use this route as a transportation alternative to USH 12 between New Lisbon and Mauston.

Description: STH 80 out of New Lisbon and CTH B only have gravel shoulders. USH 12 out of Mauston has turn-lanes and 3-foot paved shoulders.

See the New Lisbon map in Appendix 7 for additional improvements in New Lisbon.

See the Mauston map in Appendix 7 for additional improvements in Mauston.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On road	Asphalt	New Lisbon – Mauston	**Undesirable** (STH 80) **Best** (CTH B) **Moderate** (USH 12)	STH 80 needs 5-foot paved shoulders; CTH B just needs signs, but it is also recommended to add 3-foot paved shoulders; USH 12 just needs signs, but it is also recommended to add 5-foot paved shoulders. See New Lisbon and Mauston map in Appendix 7 for additional improvements in both cities.	**Mid to long-term** (for adding paved shoulders; and Mauston & New Lisbon improvements) Signing the route cannot take place until STH 80 has paved shoulders.

Responsible Parties: WisDOT, Juneau County Highway Department; Towns of Lisbon and Lindina; City of New Lisbon; and City of Mauston.

Corridor: New Lisbon to Kennedy to Camp Douglas (#12)

Justification: The Advisory Group noted that Kennedy County Park is an easy bike trip from both New Lisbon (15 minutes by bike) and Camp Douglas (30 minutes by bike). CTH C out of Camp Douglas to 6th Ave is classified as "undesirable" for biking due to high traffic and no shoulders. CTH M and the remainder of CTH C, west to 6th Ave are classified as "best" for biking.

Description: CTH C out of Camp Douglas to 6th Avenue has no shoulders (paved or gravel), so to reduce costs 11-foot lanes and 5-foot paved shoulders are recommended before signing this part of the route.

See the New Lisbon map in Appendix 7 for additional pedestrian improvements in New Lisbon.

See the Camp Douglas map in Appendix 7 for additional improvements in Camp Douglas.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On road	Asphalt	New Lisbon – Kennedy County Park	**Undesirable** (CTH C out of Camp Douglas) **Best** (CTH M & remainder of CTH C)	CTH C out of Camp Douglas needs 5-foot paved shoulders; the rest of this route just needs signs. See New Lisbon map and Camp Douglas map in Attachment 7 for additional improvements in the City and Village.	**Short-term** (Signing the route can occur now from New Lisbon to Kennedy.) **Mid to long-term** (for adding paved shoulders, and New Lisbon & Camp Douglas improvements)

Responsible Parties: Juneau County Highway Department; City of New Lisbon; Village of Camp Douglas; and Juneau County Land, Forestry, & Parks Department.

Corridor: Elroy to Sparta (#13)

Justification: The City of Elroy has specific recommendations in the Juneau County Outdoor Recreation Plan that relate to improving the on-road segment of the Elroy-Sparta Trail in Elroy.

Additional recommendations and justification exist under the Rails-To-Trails Signage recommendation in Chapter 4.

Description: The Elroy-Sparta State Trail is a state managed trail on a former railroad bed – the first rails-to-trails conversion in the country. See the Rails-To-Trails Signage recommendation in Chapter 4 for additional improvements.

See the Elroy map in Appendix 7 for additional improvements in Elroy.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
EXISTING	**Elroy-Sparta Trail** (Off-road) (small On-road segment in Elroy)	Crushed limestone (small section of asphalt road)	Elroy – Kendall – Wilton – Norwalk – Sparta	**Best****	See the Rails-To-Trails Signage recommendation in Chapter 4 for additional improvements. See the Elroy map in Appendix 7.	**Short-term** (for Elroy's Appendix 7 improvements) **Mid to long-term** (for other improvements in Chapter 4)

Responsible Parties: WDNR; City of Elroy; and Friends of the Elroy-Sparta Trail.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Elroy to Wonewoc (#14)

Justification: The Village of Union Center has specific recommendations in Appendix 7 relating to providing better bicycle and pedestrian connections within the Village.

Additional recommendations and justification exist under the Rails-To-Trails Signage recommendation in Chapter 4.

Description: The 400 State Trail is a state managed trail on a former railroad bed. See the Rails-To-Trails Signage recommendation in Chapter 4 for additional improvements.

See the Union Center map in Appendix 7 for additional improvements in Union Center.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
EXISTING	400 Trail (Off-road)	Crushed limestone	Elroy – Union Center – Wonewoc – La Valle – Reedsburg	Best**	See the Rails-To-Trails Signage recommendation in Chapter 4 for additional improvements. See the Union Center map in Appendix 7.	Mid to long-term (for Union Center's Appendix 7 improvements and other improvements in Chapter 4)

Responsible Parties: WDNR; City of Elroy; Village of Union Center; and Friends of the 400 State Trail.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Union Center to Hillsboro (#15)

Justification: The Hillsboro State Trail needs a new surface in many spots per Juneau County Land, Forestry, & Parks Department staff. Additional recommendations and justification exist under the Hillsboro State Trail recommendation in Chapter 4.

Description: The Hillsboro State Trail is a county maintained state trail on a former railroad bed.
See the Hillsboro State Trail recommendation.
See the Union Center map in Appendix 7 for additional improvements in Union Center.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
EXISTING	**Hillsboro State Trail** (Off-road)	Crushed limestone	Union Center – Hillsboro	**Best****	Possibly new chip-seal over entire trail, with additional gravel underlayment in spots. See the Hillsboro State Trail and the Rails-To-Trails Signage recommendations in Chapter 4 for additional improvements. See the Union Center map in Appendix 7.	**Short-term** (for trail surface improvements, and possibly establishing a friends group) **Mid to long-term** (for Union Center's Appendix 7 improvements and other improvements in Chapter 4)

Responsible Parties: WDNR; Juneau County Land, Forestry, & Parks Department; Vernon County Land and Water Conservation Department; Village of Union Center; and City of Hillsboro.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Mauston to Reedsburg (#16)

Justification: This is a transportation route for travel between Mauston and Reedsburg; and also provides access to Bass Hollow County Park.

Description: The proposed route uses local roads out of Mauston, and then continues on CTH K for the rest of the route.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
EXISTING	On-road	Asphalt	Mauston – Bass Hollow County Park – Reedsburg	**Best**** (on local roads out of Mauston) **Best** (CTH K from Mauston to about 1.5-miles outside of Reedsburg, then **Moderate** condition.)	Possible paved shoulders on about 1.5-miles of CTH K, just north of Reedsburg.	**Short-term** (Signing the route can occur now.) **Mid to long-term** (for possible paved shoulders in Sauk County.)

Responsible Parties: Juneau County Highway Department; City of Mauston; City of Reedsburg; and Sauk County Highway Department.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Mauston to Elroy (#17)

Justification: The Advisory Group is concerned that families in Mauston will not use this route to access all of the Rails-To-Trails in the county, all radiating from Elroy, because no paved shoulders or off-road trail exists. This could become a well-used route for Mauston families and individuals that want to: 1) access all the Rails-To-Trails; 2) travel to Elroy; and 3) travel Hillsboro, Union Center, and Wonewoc. This route would also provide access to an additional destination (Mauston) off of all the Rails-To-Trails from Elroy. The Mauston Outdoor Recreation Plan has a goal and recommendation to connect Mauston to Elroy via off-road trail, which is also listed in the Juneau County Outdoor Recreation Plan. An extensive search has found that no railroads connected Mauston with Elroy, so no existing level corridor exists outside of the STH 82 and CTH G and O right-of-ways for a potential bike path.

Description: There are no shoulders (paved or gravel) on the 24-foot wide CTHs G or O. This potential route uses CTH G out of Mauston, then a series of town roads to climb and descend over the scenic Mullin Ridge, and finally connect to Elroy on CTH O.

See the Mauston map in Appendix 7 for additional improvements in Mauston.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	Off-road and on-road	Asphalt	Mauston – Elroy	**Moderate** (CTH G out of Mauston) **Best**** (remainder of route to Elroy)	Only signing the route is needed; but it is also recommended to add an off-road path within the CTH O and G R-O-Ws per Map 8. See Mauston map in Attachment 7 for additional improvements in the City.	**Short-term** (Signing the route can occur now.) **Mid to long-term** (for possible off-road path.)

Responsible Parties: Juneau County Highway Department; Towns of Lindina and Plymouth; Cities of Mauston and Elroy.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: New Lisbon to Castle Rock Lake (#18)

Justification: The Advisory Group noted that there are many restaurants along Castle Rock Lake in the Town of Germantown that residents from New Lisbon (8 miles, 40-min bike trip) may want to bike to. An additional destination is Castle Rock County Park.

Description: This potential route uses STH 80 out of New Lisbon, then local roads to STH 58, and then CTH G or local roads to various destinations. The STH 80 bridge over I-90/94 was just re-decked in 2017 without any shoulders, making this a pinch point for walkers or bicyclists.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	New Lisbon – Germantown	**Moderate** (STH 80 out of New Lisbon) **Best**** (local roads) **Moderate** (STH 58 & CTH G in Germantown)	Only signing the route is needed; but it is also recommended to add paved shoulders along STH 80, and 54-inch high railings on the I-90/94 bridge.	**Short-term** (Signing the route can occur now.) **Mid to long-term** (for possible STH 80 improvements.)

Responsible Parties: WisDOT; Juneau County Highway Department; Towns of Lisbon, Clearfield, and Germantown; City of New Lisbon.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Mauston to Castle Rock Lake (#19)

Justification: The Advisory Group noted that there are many restaurants along Castle Rock Lake in the Town of Germantown that residents from Mauston (10 miles, 50-min bike trip) may want to bike to. An additional destination is Castle Rock County Park. The Advisory Group noted that heavy summer weekend trailer traffic would make bicycling on CTH G, HH, and STH 58 dangerous. Getting bicyclists off the highways should be a high priority per Routing Criteria #5.

Description: This potential route uses CTH G out of Mauston, then on a series of local roads, and then onto CTH G in Germantown to local destinations. CTH G in Germantown is recommended to have an off-road path or paved shoulders with a bike friendly white line rumble strip (see Map 8).

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Mauston – Germantown – Castle Rock County Park	Best** (local roads)	Only signing the route is needed. CTH G is part of another corridor.	Short-term (Signing the route can occur now.)

Responsible Parties: Juneau County Highway Department; Towns of Lemonweir and Germantown; City of Mauston.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Mauston to Adams County (#20)

Justification: Mauston has an off-road path along STH 82 as a need to access the Woodside Sports Complex listed in the Mauston Outdoor Recreation Plan. The Advisory Group noted that there are many paved local roads that would be easy to connect to the sports complex and then continue on to Adams County via the STH 82 bridge over the Wisconsin River, which was newly widened in 2018 to include 10-wide shoulders.

Description: This potential route uses CTH G out of Mauston, then on a series of local roads, and then onto STH 82 to cross the Wisconsin River into Adams County. See Map 8 for improvements.

See the Mauston map in Appendix 7 for additional improvements in Mauston.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Mauston – sports complex – Adams County	Best** (CTH G and local roads) Moderate (STH 82 near the Wisconsin River)	Only signing the route is needed. See Map 8.	Short-term (Signing the route can occur now.) Mid to long-term (for possible STH 82 & CTH G improvements.)

Responsible Parties: WisDOT; Juneau County Highway Department; Towns of Lemonweir and Marion; City of Mauston.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Lyndon Station to Castle Rock Lake (#21)

Justification: This is a transportation route that provides the following connections: 1) Lyndon Station to Riverview County Park, 2) Adams County access south to Lyndon Station, and north to Castle Rock County Park and Germantown businesses.

Description: This potential route uses CTH HH out of Lyndon Station, then on a series of local roads and CTH HH to access Castle Rock County Park. See Map 8 for improvements. In addition to route number signs, wayfinding signs from within Riverview County Park out to connect to this potential bike route and back will be needed to show bicyclists which driveways and roads to take to access the Park or to get out of the Park.

See the Lyndon Station map in Appendix 7 for additional improvements in Lyndon Station.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Lyndon Station – Riverview County Park – Adams County – Castle Rock County Park – Germantown	Best & Moderate Undesirable is the Advisory Group rating of CTH HH, north of STH 82 due to heavy weekend boat trailer traffic.	Only signing the route is needed; but it is recommended to add paved shoulders along CTH HH. See Map 8.	Short-term (Signing, and wayfinding signing the route can occur now.) Mid to long-term (for CTH HH & CTH G improvements.)

Responsible Parties: WisDOT; Juneau County Highway Department; Towns of Lemonweir and Marion; Village of Lyndon Station.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Germantown to Necedah (#22)

Justification: This is a suburban recreational route that would be heavily used by Town of Germantown residents and seasonal residents. 52.7% of housing in Germantown is seasonal (Fig. 6). Heavy semi-truck traffic exists along STH 58 & 80. If paved shoulders are provided, instead of an off-road path within the R-O-W, then at least 8-foot wide shoulders would be necessary to keep bicyclists away from being blown over by passing semi-trucks. Both state highways are posted at 55 mph.

Description: This potential route uses CTH G at Castle Rock County Park to STH 58 to STH 80 north to Necedah. CTH G has gravel shoulders, and is recommended to have an off-road path within the R-O-W. STH 58 in the Town of Germantown has 3-foot paved shoulders, along with 3-foot gravel shoulders. STH 80 has 3-foot paved shoulders, along with gravel shoulders that if paved could provide 8-foot paved shoulders. See Map 8 for improvements.

See the Germantown map in Appendix 7 for additional improvements in Germantown.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	Off-road and on-road	Asphalt	Castle Rock County Park – Germantown – Necedah	Moderate & Undesirable	Without STH 58 & 80 improvements, this route is "un-favorable" per the Designate County Bicycle Routes recommendation guidance; and should not be signed until improvements are made per Map 8.	Mid to long-term (for CTH G, and STH 58 & 80 improvements.)

Responsible Parties: WisDOT; Juneau County Highway Department; Towns of Germantown and Necedah; Village of Necedah.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Corridor: Buckhorn State Park to Necedah (#23)

Justification: This is a suburban recreational route that would be heavily used by Town of Germantown residents and seasonal residents, and Village of Necedah residents when access across the Yellow River is solved. 52.7% of housing in Germantown is seasonal (Fig. 6).

Description: This potential route uses CTH G and town roads to connect to STH 21 and the STH 21 bridge over the Yellow River into the Village of Necedah. Off-road paths within the CTH G right-of-way or on state park land would connect Buckhorn State Park visitors to the local town roads within Germantown and Necedah for a variety of loop routes. STH 21 has 3-foot paved shoulders, along with gravel shoulders that if paved could provide 8-foot paved shoulders. The STH 21 bridge over the Yellow River is the pinch point for bicyclists, with less than 3-feet of shoulders, and a 4-foot sidewalk on the south side that does not connect on either side. An off-street path is recommended by the Advisory Group to cross the Yellow River. See Map 8 for improvements.

See the Village of Necedah map in Appendix 7 for additional improvements in the Village.

See the Germantown map in Appendix 7 for additional improvements in Germantown.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	Off-road and on-road	Asphalt	Buckhorn State Park – Germantown – Necedah	Moderate & Undesirable	Without STH 21 improvements, this route is "un-favorable" per the Designate County Bicycle Routes recommendation guidance; and should not be signed until improvements are made per Map 8.	Mid to long-term (for CTH G, and STH 21 improvements.)

Responsible Parties: WisDOT; Juneau County Highway Department; Towns of Germantown and Necedah; Village of Necedah.

Corridor: Germantown to Germantown (#24)

Justification: This is a suburban recreational route that would be heavily used by Town of Germantown residents and seasonal residents when access across Castle Rock Lake on CTH G is solved. 52.7% of housing in Germantown is seasonal (Fig. 6).

Description: This potential route only uses the CTH G causeway and bridge across Castle Rock Lake. CTH G is 22-feet wide without any shoulders. The recommendation is to make an off-road path adjacent to CTH G for bicycles and pedestrians in summer and snowmobiles in winter. Options to make this path include: 1) adding additional causeway into Castle Rock Lake to provide the width needed, 2) a cantilevered off-road path could be created on piers sunk into the causeway, or 3) 40-foot or wider bridge decking would be laid onto the causeway to provide two 12-foot lanes, a concrete barrier, and a 12-foot wide bike & pedestrian path. Seek local resident opinion when a final width is determined to find out if overlooks would also be used.

See the Germantown map in Appendix 7 for additional improvements in Germantown.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	Off-road and on-road	Asphalt	Buckhorn State Park – Germantown – Necedah	Moderate Undesirable is the Advisory Group rating of CTH G causeway. No shoulders exist, narrow lanes exist, and bicyclists compete with heavy weekend boat trailer traffic.	Without CTH G improvements, this route is "un-favorable" per the Designate County Bicycle Routes recommendation guidance; and should not be signed until improvements are made per Map 8.	Long-term

Responsible Parties: Juneau County Highway Department; and Town of Germantown.

Corridor: Mauston to Lyndon Station (#25)

Justification: This is a transportation route that provides an off-highway connection between Mauston to Lyndon Station.

Description: This potential route uses STH 16 only for two segments: 1) leaving Mauston and 2) entering Lyndon Station, with the remainder of the route along local roads and a small section of CTH N by Lyndon Station.

See the Lyndon Station map in Appendix 7 for additional improvements in Lyndon Station.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Mauston – Lyndon Station	Moderate & Best	Only signing the route is needed; but it is recommended that the STH 16 / USH12 bridge over the railroad tracks, south of Mauston, should 1) have 54-inch high railings, and 2) wide shoulders.	**Short-term** (Signing the route can occur now.) **Mid to long-term** (for STH 16 bridge improvements.)

Responsible Parties: WisDOT; Juneau County Highway Department; Towns of Lemonweir and Kildare; City of Mauston; and Village of Lyndon Station.

Corridor: East Side – Lyndon Station to Wisconsin Dells (#26)

Justification: This is a campground recreational route that would be heavily used by campground visitors.
Map __ shows that 3 campgrounds on the east side of I-90/94 have 661 total campsites.
This is also a direct transportation route along the east side of I-90/94 as an alternative to using all of CTH N.

Description: This potential route uses CTH HH out of Lyndon Station, then CTH N, then local roads, and then CTH N to a fork-in-the-road. The last road to be marked will require cooperation with the Sauk County Highway Department and the City of Wisconsin Dells. Options include continuing south on CTH A or Stand Rock Road.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Lyndon Station – Ho-Chunk Community – Wisconsin Dells	Best	Only signing the route is needed; but it is recommended that the CTH HH bridge over I-90/94 should 1) have 54-inch high railings, and 2) wide shoulders.	**Short-term** (Signing the route can occur now.) **Mid to long-term** (for CTH HH bridge improvements.)

Responsible Parties: Juneau County Highway Department; Sauk County Highway Department; and City of Wisconsin Dells.

Corridor: West Side – Lyndon Station to Wisconsin Dells (#27)

Justification: This is a campground recreational route that would be heavily used by campground visitors.

Map 6 shows that 3 campgrounds with 596 total campsites exist along this potential bike route on the west side of I-90/94. Another 3 campgrounds with 480 total campsites exist along USH 12, southeast of Lyndon Station.

This is also an alternative transportation route to using USH 12 on the west side of I-90/94.

Note: USH 12 should also become pedestrian and bicycle friendly from Lyndon Station south to STH 13/23 in Wisconsin Dells. USH 12 would be used locally by many residents who live along the highway, and want to travel to local destinations within 2 miles of their homes.

Description: This potential route uses local roads south out of Lyndon Station to CTH J, then uses a section of CTH J to Curry Road to Old US Hwy 12 south onto CTH H in Wisconsin Dells. CTH H in Sauk County is considered "undesirable" by WisDOT for biking, so an off-street path on the north side of CTH H is recommended. A bike route wayfinding sign should point bicyclists traveling south on USH 12 at Old USH 12 toward using CTH J; the sign may have a "To" sign, on top of the route sign, on top of an arrow sign. Also, "To Hwy 12" signs should be installed on northbound Old US Hwy 12, just before Curry Rd.

Existing or Proposed?	On or Off Road?	Surface Types and Season (*if applicable*)	Key Connections	Current Suitability	Accommodations or Improvements	Time Frame
PROPOSED	On-road	Asphalt	Lyndon Station – Wisconsin Dells	**Best** (CTH J) (local roads)** **Undesirable** (CTH H)	Without CTH H improvements, that part of this route is "un-favorable" per the Designate County Bicycle Routes recommendation guidance; and should only be signed down to CTH H; until CTH H improvements are made.	**Short-term** (Signing the route can occur now – ONLY from Lyndon Station south to CTH H in Wis. Dells.) **Mid to long-term** (For CTH J paved shoulders improvement.) (For CTH H off-road path improvement.)

Responsible Parties: Juneau County Highway Department; Sauk County Highway Department; Village of Lyndon Station, Town of Lyndon, and City of Wisconsin Dells.

***This represents NCWRPC staff analysis and not an official rating from WisDOT.*

Chapter 6:
Plan Implementation and Conclusion

In order to implement the Juneau County Bicycle and Pedestrian Plan, it is up to each County Department & Committee, and every local government affected to review this Plan annually when new projects are under review.

Periodic review of this plan by a standing committee or group will provide an overall reinforcement that various levels of government are on-track with meeting the goals and objectives stated in this Plan.

It is important to note that implementation, as with many public works projects, is heavily contingent on acquisition of right-of-way when needed and accessibility of funding sources. Funding assistance for major projects would most likely come from WisDOT or WDNR. Relevant programs to fund the recommendations illustrated in this plan are listed below.

Funding Sources

Transportation Alternatives Program (TAP)

TAP is a legislative program authorized by Congress through the Fixing America's Surface Transportation (FAST) Act signed into law in 2015. Safe Routes to School Programs, Bicycle & Pedestrian Facilities programs, and transportation enhancements are all TAP-eligible projects, including this plan. WisDOT facilities TAP program and funding management

Construction projects eligible for TAP must have a total projected expense of $300,000 or more, while non-construction projects must have a total projected expense in excess of $50,000.

Recreation Trails Program (RTP)

The Wisconsin DNR administers this federal program to provide reimbursement for motorized and non-motorized trail development and maintenance. Governments are eligible for up to 50 percent reimbursement for trail development through this program. Funding is allocated through the following ratio of uses: 30 percent non-motorized, 30 percent motorized, and 40 percent diversified.[4] Applications are due May 1st each year, and counties, local governments, state agencies and school districts can all apply for this funding source.

Land & Water Conservation Fund (LWCF) Grants – the State Side

Administered by the State and Local Assistance Programs Division of the National Parks Service, the LWCF Grants program provides local and state governments matching grants to acquire and develop public outdoor recreation areas, which could include some pedestrian and bicycle trails and facilities. Historically, grants have funded either the acquisition of park and recreation lands, or "combination" projects to both acquire land and kick off recreation development for a project.

[4] '40 percent diversified' means that 40 percent of funds will go to a) diverse non-motorized uses; b) diverse motorized uses; and c) diverse project hosting both motorized and non-motorized uses.

Community Development Block Grant – Public Facilities (CDBG-PF) Program

Administered by the Wisconsin Department of Administration (DOA) – Division of Energy, Housing, and Community Resources, the CDBG-PF Program provides funding for communities to support facility or infrastructure projects for communities. Eligible projects must meet one of three national objectives as set by the U.S. Department of Housing and Urban Development (HUD). Pedestrian or bicycle improvements could qualify under some circumstances.

- *Benefiting low- and moderate-income persons*
- *Preventing or eliminating slums or blight*
- *Meeting other community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare or the community and other financial resources are not available to meet such needs.*

The Wisconsin DOA has yet to determine the deadline for the 2019 Grant cycle.

Highway Safety Improvement Program (HSIP)

While HSIP does not pertain to bicycle and pedestrian transportation, this WisDOT program can help improve safety measures on problematic stretches of highway where crashes have occurred in the past, thereby creating a safer and more hospitable transportation network. HSIP improvements generally require a ten percent match of state or local funds. The program generally funds low-cost options that can be implemented quickly.

Better Utilizing Investments to Leverage Development (BUILD) Transportation Grants

The U.S. Department of Transportation's BUILD (formerly TIGER) Transportation Grants make $1.5 Billion of federal dollars available for surface transportation projects that would make a significant local or regional impact and speak effectively to the following criteria: Safety; State of Good Repair; Environmental Protection; Economic Competitiveness; Quality of Life; Innovation; Partnership; Non-Federal Revenue for Transportation Infrastructure Investment. Other criteria include demonstrated project readiness and project costs and benefits. Geographic diversity amongst recipients is also a consideration, and it should be noted that criteria have been adjusted from TIGER to BUILD to bolster the chances of rural applicants.

Challenge Cost Share Program (CCSP)

The purpose of the Challenge Cost Share Program (CCSP) is intended to increase participation by qualified partners in the preservation and improvement of National Park Service (NPS) natural, cultural, and recreational resources; in all authorized Service programs and activities; and on national trails. NPS and partners should work together on projects with mutually beneficial, shared outcomes. One-third of the CCSP pot is earmarked for National Trails System Projects. Thus supporting work under the National Trails System Act (16 U.S.C. 1241-51), such as: National Scenic and Historic trails, National Scenic and Historic Trails in parks, National Recreation Trails, and rail-trail projects.

Conclusion

The Juneau County Bicycle and Pedestrian Plan is intended to address a long-term period, and plan for a bicycle/pedestrian network improvements in the County for the next twenty years. Planning for the future does not end with adopting this plan. Circumstances and user needs change frequently, and thus this plan should be closely monitored and analyzed annually to ensure that it continues to enact the initiatives and goals listed within. Additionally, as communities do with their comprehensive plans, the County should consider a formal update of the plan in ten years to update goals, objectives and recommendations to ensure planning and implementation of bicycle and pedestrian planning in Juneau County remains current.

Maps

FINLEY
KINGSTON
ARMENIA
CUTLER
NECEDAH
Necedah
ORANGE
CLEARFIELD
GERMANTOWN
Camp Douglas
Hustler
New Lisbon
FOUNTAIN
LISBON
MARION
Mauston
LEMONWEIR
PLYMOUTH
LINDINA
Elroy
KILDARE
WONEWOC
Lyndon Station
Union Center
SUMMIT
SEVEN MILE CREEK
LYNDON
Wonewoc
Wisconsin Dells

Legend

- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water

N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR, Juneau County, NCWRPC

Location

Map 1

Prepared By:
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Juneau County, Wisconsin — Bicycle & Pedestrian Plan

Refuge Walking Trails
Refuge Visitors Center
Van Kuren Hiking Trail
Oak Ridge County Park
Kucirek Trail
Back Forty
Riverside Park Trails
Woodside Ranch Trail (pvt)
Riverwalk
Bass Hollow County Park

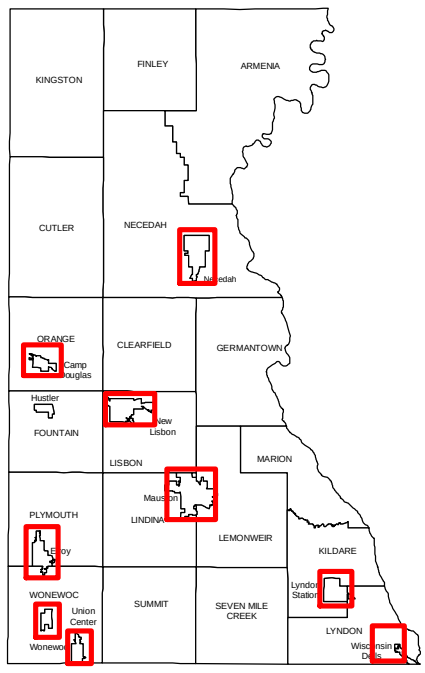
Legend

- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water

Trails

- "400" State Trail
- Elroy-Sparta State Trail
- Hillsboro State Trail
- Omaha Trail
- Hike/Bike Trail Systems
- 3 Foot Paved Shoulders
- 5 Foot Paved Shoulders

See Appendix 7 for Existing Data maps



N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR, Juneau County, NCWRPC

Existing Facilities

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Map 2

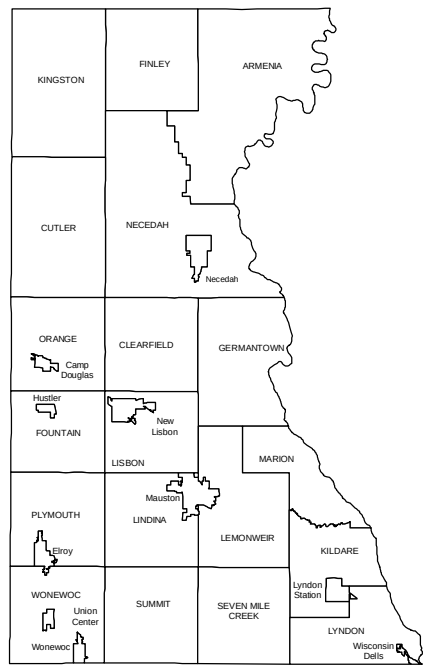
Juneau County, Wisconsin — Bicycle & Pedestrian Plan

Legend

- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water

Bike Suitability

- Best Condition
- Best Condition Paved Shoulder
- Moderate Condition
- Moderate Condition Paved Shoulder
- Higher Volume Paved Shoulder
- Higher Volume 4-lane Highway
- Undesirable High Volume
- Undesirable Paved Shoulder
- Undesirable 4-lane Highway
- Prohibited



N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR, WisDOT, Juneau County, NCWRPC

Bicycle Suitability Ratings

Map 3

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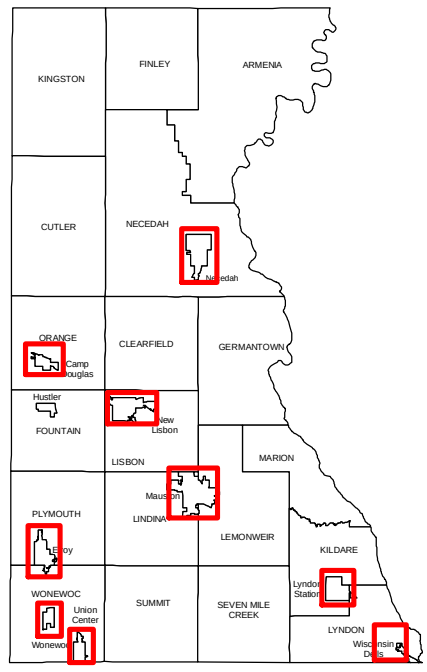
Juneau County, Wisconsin — Bicycle & Pedestrian Plan

Legend

- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water
- Traffic Count Location

See Appendix 7 for Existing Data maps



N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR WisDOT, Juneau County, NCWRPC

Traffic Counts

Prepared By:
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Juneau County, Wisconsin — Bicycle & Pedestrian Plan

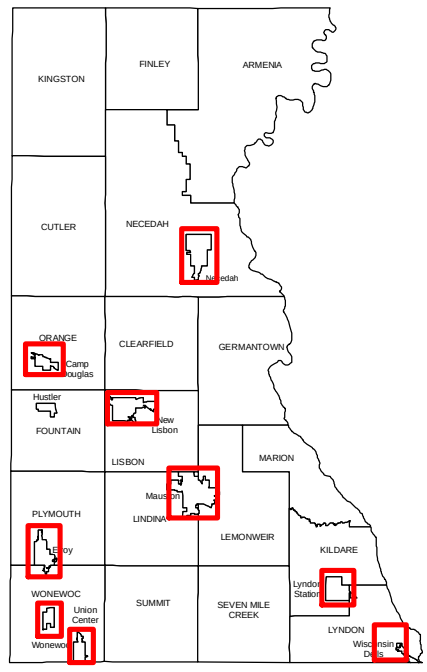
Legend

- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water

Crash Type

- Bicycle
- Pedestrian

See Appendix 7 for Existing Data maps



N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR, WI TOPS Lab, Juneau County, NCWRPC

Crash Locations

Prepared By:
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Map 5

Juneau County, Wisconsin — Bicycle & Pedestrian Plan

Legend

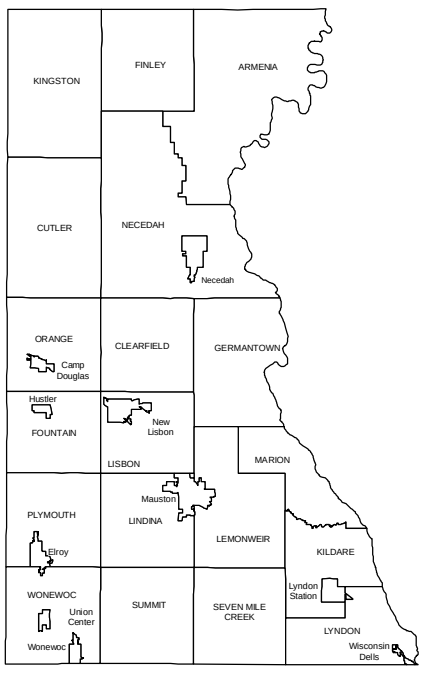
- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water

Public Ownership

- Federal Land
- County Land
- Military Land
- Natural Area
- Parks

Land Use

- Residential
- Commercial
- Industrial
- Mobile Home Park (# of mobile homes)
- Campgrounds (# of campsites)



N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR, Juneau County, NCWRPC

Existing Land Uses

Map 6

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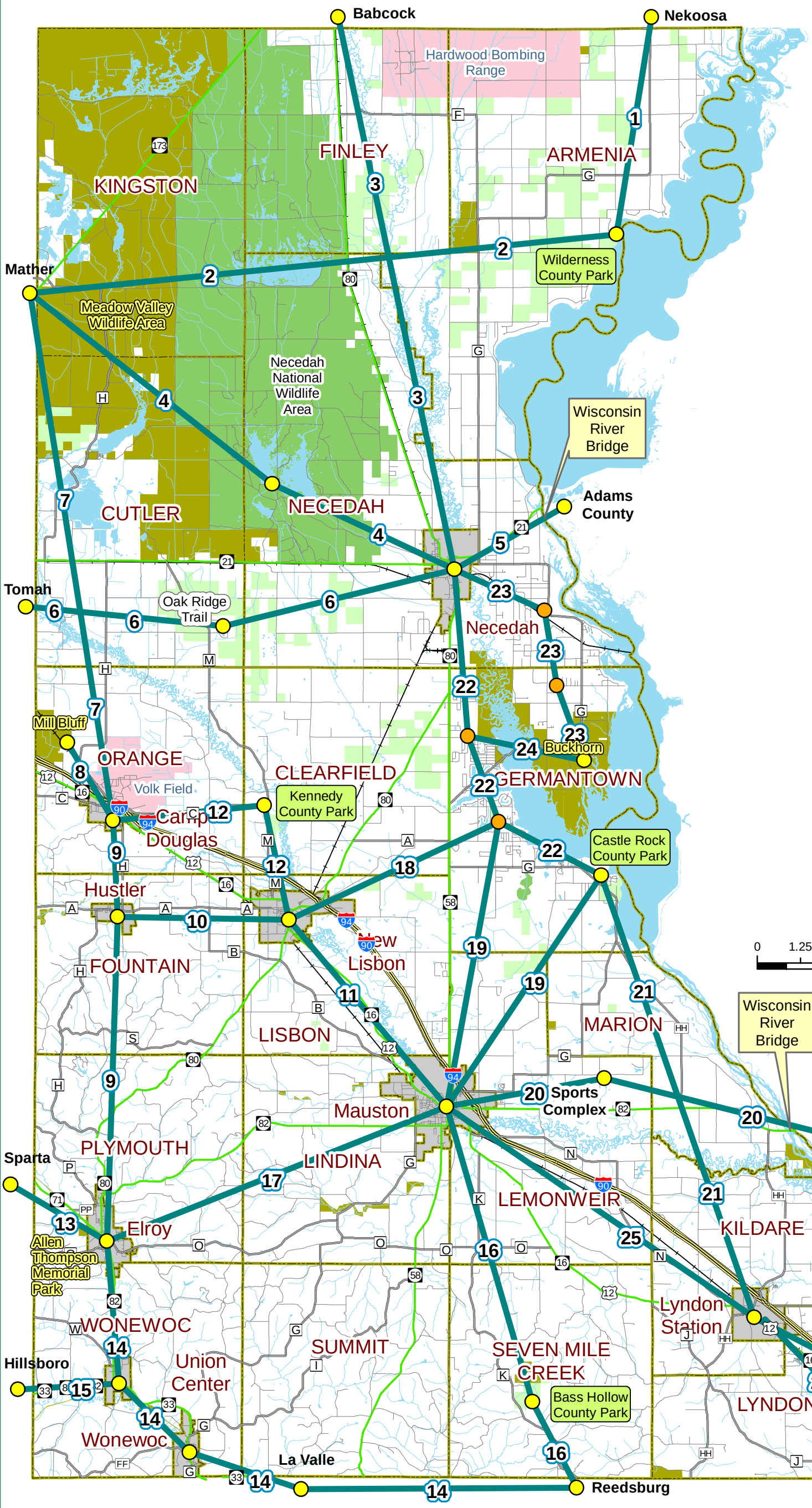

Legend

- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water

Trip Generator

- Destination
- Extensive Camping
- Suburban Housing
- Corridor

Land Ownership

- Federal Land
- County Land
- Military Land
- State Land
- Urban Area

N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR, Juneau County, NCWRPC

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Conceptual Corridors

Map 7

Prepared By:
North Central Wisconsin Regional Planning Commission
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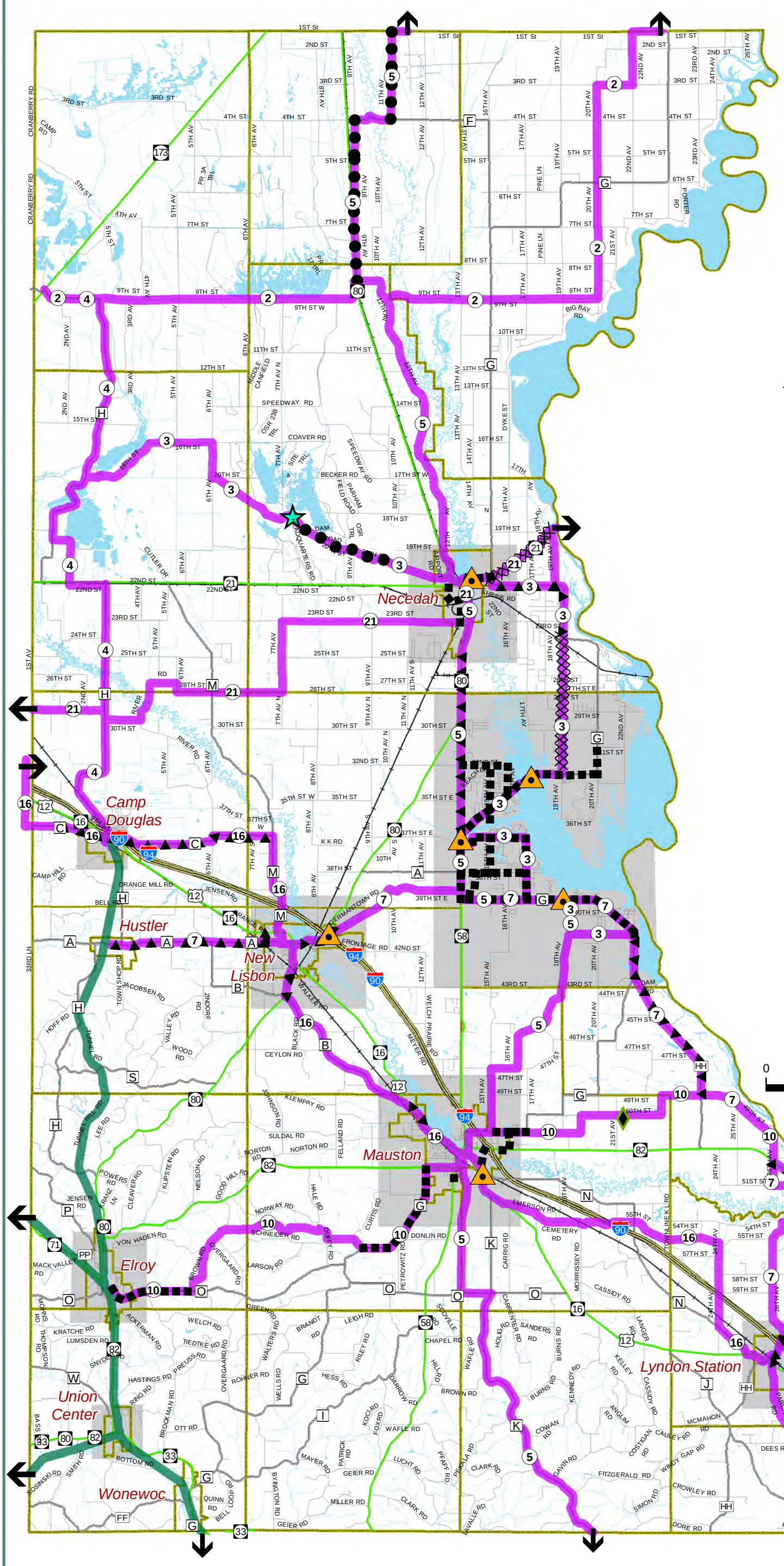

Legend

- Interstate Highways
- US & State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Water
- Pinch Points
- Proposed Chip Seal or Pave
- Proposed Off Street Bike Path
- Proposed 8 Foot Paved Shoulders
- Proposed Rumble Strip and Paved Shoulders
- Proposed Bike Routes* and Numbering
- Rails To Trails
- Refuge Visitors Center
- Sports Complex
- See Appendix 7 for Proposed Improvement maps

*NOTICE

Each proposed bike route becomes a bike route when the County:

1. Officially designates by ordinance one of the segments or part of a segment per WI State Statue 349.23; and

2. Installs bike route signs.

N

0 1.25 2.5 5 7.5 Miles

Source: WI DNR, Juneau County, NCWRPC

Proposed Bike Routes* & Improvements

Map 8

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Appendix 1: Survey Tabulation

Survey Results

Question 1: In a usual week from May through October when the weather is good enough, how do you get to work? ***Answered: 153 Skipped: 0***

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Work at home. No commute.	24	25	26	23	25	27	26
Not a work day	64	11	10	10	11	15	61
Flex Time / compressed day off	1	0	0	0	0	1	1
Drove alone	9	99	101	102	98	91	11
Carpooled or Vanpooled	1	5	5	5	5	5	1
Bus	0	0	0	0	0	0	0
Bicycled	3	5	3	5	3	5	4
Walked	3	7	8	8	7	6	3
Taxi	0	0	0	0	0	0	0

Question 2: In a usual week from November through April when the weather is good enough, how do you get to work? ***Answered: 153 Skipped: 0***

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Work at home. No commute.	27	25	24	22	24	27	28
Not a work day	62	12	10	10	11	14	57
Flex Time / compressed day off	1	0	0	0	0	2	2
Drove alone	10	105	108	108	104	98	14
Carpooled or Vanpooled	1	3	5	3	5	3	1
Bus	0	0	0	0	0	0	0
Bicycled	1	1	1	1	1	1	1
Walked	3	5	4	7	4	5	2
Taxi	0	0	0	0	0	0	0

Question 3: What type of bicyclist are you? ***Answered: 147 Skipped: 6***

	Percent	Responses
No way, no how.	10.20%	15
Interested but concerned.	44.22%	65
Enthusiastic and confident.	38.78%	57
Strong and fearless.	6.80%	10

Question 4: In winter (November through April), how often do you bicycle for the following purposes?

	Not at All	Daily	Several Times a Week	Several Times a Month	Several Times a Year
Work or school commute	124	1	1	2	0
Shopping or errands	112	0	1	3	5
Recreation or exercise	87	1	6	14	21
Social or entertainment	101	0	4	6	10

Question 5: In summer (May through October), how often do you bicycle for the following purposes?

	Not at All	Daily	Several Times a Week	Several Times a Month	Several Times a Year
Work or school commute	108	3	2	6	2
Shopping or errands	83	2	11	16	8
Recreation or exercise	5	9	40	41	37
Social or entertainment	52	3	22	26	21

Question 6: What distance do you bicycle one-way for the following trips?

	Not at All	Less than 1-mile (about 5 minutes)	Up to 2 miles (About 15 minutes)	Up to 5 miles (About 30 minutes)	Up to 8 miles (About 45 minutes)	Beyond 8 miles (More than 45 minutes)
Work or school commute	106	3	5	7	0	2
Shopping or errands	82	7	18	12	3	1
Recreation or exercise	6	5	16	40	18	43
Social or entertainment	46	4	14	24	13	24

Question 7: What distance would you bicycle one-way for the following trips if something changed? "Something" could be a road improvement, or a personal / equipment improvement.

	Not at All	Less than 1-mile (about 5 minutes)	Up to 2 miles (About 15 minutes)	Up to 5 miles (About 30 minutes)	Up to 8 miles (About 45 minutes)	Beyond 8 miles (More than 45 minutes)
Work or school commute	80	3	11	19	7	7
Shopping or errands	68	5	14	20	5	11
Recreation or exercise	21	0	4	27	19	58
Social or entertainment	37	1	5	24	16	41

Question 8: How far is your one-way work or school commute now? ***Answered: 131 Skipped: 22***

	Percent	Responses
Less than 1 mile	27.48%	36
Up to 2 miles	9.16%	12
Up to 5 miles	12.98%	17
Up to 8 miles	8.40%	11
Beyond 8 miles	41.98%	55

Question 9: What encourages you most to ride a bicycle? (Pick your top reason.) ***Answered: 130 Skipped: 23***

	Percent	Responses
Health/Exercise	66.92%	87
Fun/Recreation	28.46%	37
Cost savings on commuting	1.54%	2
Convenience	1.54%	2
Environmental Impact	1.54%	2
No other transportation choice	0.00%	0

Question 10: How often do you wear a helmet?

	Percent	Responses
Never	42.31%	55
Not often	17.69%	23
Most of the time	9.23%	12
Every time I ride	30.77%	40

(Optional) If you don't wear a helmet every time, please note why:

- No way, uncomfortable
- Never have
- Don't own one
- I just never have. They didn't become a thing until I was over 35
- Feels silly
- Do not have one
- Because I don't ride a bike
- Forget to
- On a dead end road, light traffic
- Never have
- Riding less than mile on private road
- They are too hot
- Helmed saved my life, I never bike without it
- Too confining
- Rarely if ever ride anywhere but low traveled country roads

- Uncomfortable, feel like I can't hear if anyone is approaching from behind
- Length of ride, extremely short I may not wear gear
- Don't like it, grew up without one
- If I'm running out for a quick bike ride by myself (not with my kids) I sometimes do 1-2 miles without my helmet.
- Never felt a need
- I don't not ride on city streets
- Uncomfortable
- Sometimes I don't bother if it's a short trip. Bad, I know.
- Too hot
- I don't have a properly fitting helmet
- Mess up my hair. Not feel it's necessary on short rides not a major highway
- Do not have one
- Not in a habit of wearing one
- Not if having a quick ride home
- Habit
- Enjoy the freedom

Question 11: Which of the following prevents you from bicycling more in summer? (Choose all that apply.)

	Responses
Some part of my trip is not safe to bike for traffic reasons	77
Not enough time to travel by bike	51
Road or path surfaces are poor for biking	45
Too many physical barriers	35
I don't want to sweat before work/school	31
Not physically able to do more	17
Some part of my trip is not safe to bike due to personal safety	15

Question 12: What infrastructure would improve biking in Juneau County for you? (Choose all that apply.)

	Responses
Off-street trails	81
Paved shoulders on rural roads	77
Bike lanes on busy streets	63
Intersection bike accommodations	35
Bike racks at my destination	24
Other (please specify)	13
Nothing more regarding road improvements	11

[Q12] Other (Please specify):

- Don't generally bike prior to work because I have children to drop off to two separate places prior to coming to work
- Bike path
- Connecting current bike paths that are not connected to towns. Would allow more people access to safe areas
- Biking for recreation is great almost everywhere in the county. Commuting is a different story. It is rough trying to commute to work on a bike in a rural area. One surprise road closure can add miles to your commute. I've had township workers force me to take multi mile detours due to high water when a bridge was still fine and merely proactively posted for upcoming high water
- There are a lot of rural forests (School. Public, Etc.) in outside rural areas in Juneau county. Developing bike trails and allowing biking in these areas would not take a huge investment and would be great for the public
- Easy access to existing bike trails
- Improved bike trail
- Trail connection between Mauston and Elroy or the 400 trail
- Paved shoulders are by far the most important. Bike lanes come second
- Trails for running and hiking would be great too. If I ever moved away from Mauston, it would be to be closer to some trails
- Strom cover, porapotties on trails
- 400 trails could use improvements in spots
- Wow. I didn't even think of how many more likely I would be to bike if there were nearby off street trails. Traffic scares me most.

Question 13: Which of the following programs or information would help you bike more often? (Choose all that apply.)

	Responses
Signed bicycle routes	70
Motorists sharing the road better	61
Bike maps	48
Some way of constant encouragement	30
Bike To Work/School events	23
Nothing more regarding programming or information	20
Having a guaranteed ride home if I needed a car unexpectedly	18
Various biking in traffic education for myself	15
Bike education for my children, so we can ride more often together	11
Other (please specify)	8

[Q13] Other (Please specify):

- Don't generally bike prior to work because I have children to drop off to two separate places prior to coming to work

- Nothing more for me, but I think others would benefit from a bike to work push and motorist education. I have had residents tell me I couldn't bike on their road because it was illegal (on a road listed by DOT as a recommended route for cyclists)
- Paved bike trails from community to community
- Place to clean up, public restrooms along the way
- More trails
- If I had more time personally
- Having a nice bike trail that can be free of cars, semis, and large farm equipment in the Mauston area that connects with other towns. Not everyone has bike carriers on their cars.

Question 14: If you want to continue with the walking questions, then pick: "Yes"

	Percent	Responses
Yes	84.30%	102
No	15.70%	19

Question 15: If you want to continue with the walking questions, then pick: "Yes"

	Percent	Responses
Yes	86.67%	13
No	13.33%	2

Question 16: What is the main type of walking facility you use for the following purposes?

	I don't walk for this purpose	Sidewalk	City/Village street without sidewalk	Rural Road With Shoulder	Rural Road Without Shoulder	Shared-Use Trail
Work or school commute	84	17	2	2	2	1
Shopping or errands	63	32	10	1	0	0
Recreation or exercise	3	35	16	14	32	15
Social or entertainment	17	31	6	12	18	19

Question 17: In winter (November through April), how often do you walk for the following reasons?

	Not at All	Daily	Several Times a Week	Several Times a Month	Several Times a Year
Work or school commute	96	4	0	4	4
Shopping or errands	80	2	10	12	6
Recreation or exercise	27	15	21	34	17
Social or entertainment	51	6	10	26	13

Question 18: In summer (May through October), how often do you walk for the following reasons?

	Not at All	Daily	Several Times a Week	Several Times a Month	Several Times a Year
Work or school commute	88	3	6	6	3
Shopping or errands	63	4	22	11	7
Recreation or exercise	3	31	50	25	6
Social or entertainment	28	13	31	25	8

Question 19: What distance do you walk one-way for the following trips?

	Not at All	A few blocks (About 5 minutes)	Up to 1 mile (About 15 minutes)	Up to 1.5 miles (About 30 minutes)	Up to 2 miles (About 45 minutes)	Beyond 2 miles
Work or school commute	89	3	6	5	1	3
Shopping or errands	63	13	17	9	6	0
Recreation or exercise	5	1	8	22	35	44
Social or entertainment	31	1	17	10	28	21

Question 20: What encourages you to walk most?

	Percent	Responses
Health/Exercise	80.70%	92
Fun/Recreation	14.91%	17
No other transportation choice	1.75%	2
Convenience	1.75%	2
Environmental Impact	0.88%	1
Cost savings on commuting	0.00%	0

Question 21: Which of the following prevents you from walking more in summer? (Choose all that apply.)

	Percent	Responses
Not enough time to walk	47.37%	54
Some part of my trip is not safe to walk	35.96%	41
Some part of my trip is not safe	19.30%	22
Too many physical barriers	15.79%	18
Not physically able to do more	14.04%	16
I don't want to sweat before work/school	14.04%	16

A: Busy rural roads/highways without paved shoulders.

B: Crossing intersections without traffic signals/signs

C: Sidewalks not cleared in winter.

D: Sidewalks don't exist, or gaps in sidewalk.

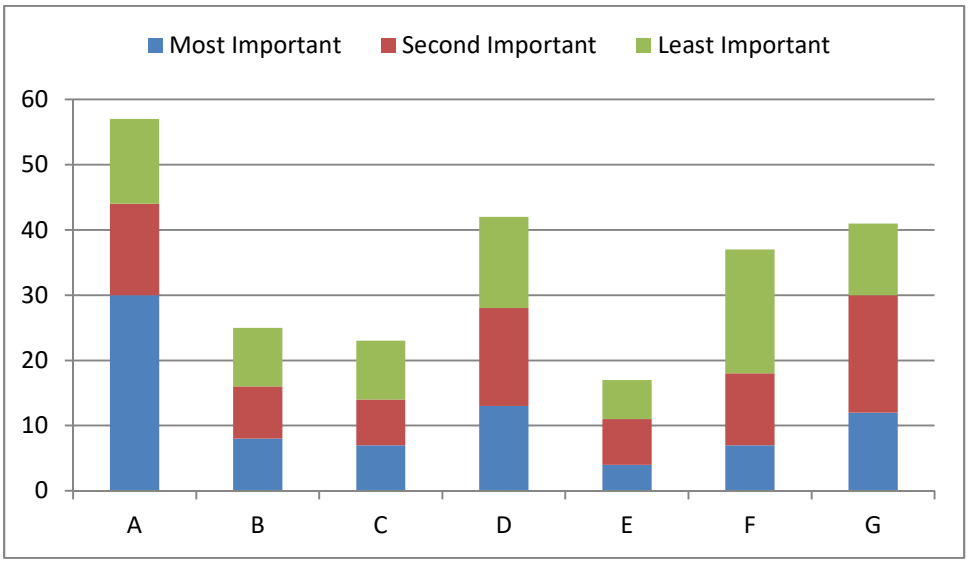
E: Sidewalk in disrepair/obstructed *(e.g. tripping hazards, trees/brushes, parked cars/garbage cans on sidewalk, too narrow, etc.)*

F: Motorists don't yield to pedestrians in crosswalks

G: Few off-street trails in my part of Juneau County.

Question 22: What makes walking in Juneau County difficult?

(Please choose your 3 most important reasons from above list.)



Question 23: What infrastructure would improve walking in Juneau County for you?

	Percent	Responses
Off-street path/sidewalk on busy rural roads/highways	62.62%	67
Paved shoulders on busy rural roads/highways	42.06%	45
More or improved lighting	32.71%	35
Sidewalks cleared of snow	25.91%	32
Motorist education about pedestrians' rights while in crosswalk	28.04%	30
In cities: Sidewalks on both sides of busy streets, and at least one side of busy neighborhood streets	26.17%	28
Sidewalks repaired or cleared of obstructions	25.23%	27
Easier way to cross road at traffic light or stop/yield sign controlled intersection	20.56%	22
In cities: Sidewalks on both sides of most streets	18.69%	20
Nothing	14.95%	16
Audible pedestrian signals to cross busy streets	7.48%	8
Curb ramps at every crosswalk	4.67%	5

[Q23] Other (Please specify):

- The yield to pedestrian signs at intersections is helpful
- Improved bike/walking/running trails
- Being able to get from one side of town to the other without using the streets
- I am just outside the city limits the roads are ok would like to walk in the woods or off the roads once in a while
- Cars don't look for other cars, they sure don't watch for people walking
- None of the above, I'd like more longer hiking trails (off-road) nearby
- Less mosquitos
- Warmer weather
- A dedicated walking/biking path through a park or bluff. Outside the city limits
- Keep bar patrons from standing in from of bars and harassing people who pass by.

Question 24: Which of the following programs or information would help you walk more often? (Choose all that apply.)

	Responses
Walking route maps	47
Motorists sharing the road better	38
Nothing more regarding programming or information	27
Some way of constant encouragement	26
Signed (Sidewalk stenciled)routes	22
Walk to Work/School events	14
Having a guaranteed ride home if I need a car unexpectedly	10
Other (please specify)	10
Anti-slip shoes/boots for winter	8
Various walking/crosswalk education for myself	5

[Q24] Other (Please specify):

- I can't think of anything to map, unless there are some hiking trails in the county that nobody knows about. I know of the rail-trails; is there more?
- Routes specially for walking biking without worrying about cars
- More signs in the middle so streets reminding drivers to yield to pedestrians
- Inside walking in cold months
- More tails
- Having more time personally
- A walking path that connects the different communities together. It provides distance, nature and a healthier community due to varying exercise length for all.
- Trails in parks, campgrounds
- More 5k walks/runs for local charities

Question 25: Would you like to make any additional comments?

Comments:

- The questions were a bit wordy to understand
- Almost daily I see walkers walking on the wrong side of the street
- I walk a lot for exercise. It is not good to walk when it is getting dark as many Mauston city streets are way too dark for walking and too many sidewalks are in disrepair so it makes for a trip hazard. I wouldn't expect city streets to be brighter though. Walking downtown is not inviting as it is hard to cross the street as a pedestrian, especially past Kwik Trip by the bridge. I work 30 minutes away from Mauston.
- I live by Castle Lake. There are no bike or walking paths. It would be so nice to have a path connecting the lake area to New Lisbon and Mauston towns…even connecting to Necedah. PLEASE!!!
- I love to bike and walk and how that we can make our easier for adults and school children to cross the roads without worry.
- I notice there is a major problem in the City of Elroy with drivers yielding to pedestrians. While there are marked crossings in the middle of the Elroy business district, drivers fail to yield to pedestrians.

- Trail along river is very nice!
- GLAD TO SEE YOURE DOING THIS
- Off road walking trails would be great for our rural areas
- I am willing to help out with advancements in this area. I am anxious to help Juneau County get more active and initiate health and wellness initiatives! So glad you are looking into this!
- Our county has been ranked unhealthy and poverty stricken within the state. We must do what we can to encourage health and safety for our citizens.
- Your questions made me realize that I don't even consider walking on country roads. They don't feel safe to me. I restrict myself to city sidewalks and am thankful that we have the River Walk in Mauston.
- I think having more recreation bike trails would be great to bring people to the county for that purpose and also be a great asset to us local residents and the seasonal visitors that we have
- A walking path, and biking path for recreation would be a positive addition to Juneau County. Being able to get outside and have fresh air is important and being able to safely walk for exercise without the worry of traffic would be a plus. I believe citizens would use a separate walking/ biking path in nature that encourages exercise.
- We really need communities set up for walking. This means having sidewalks/trails AND businesses to walk to. We need to travel at least 25 minutes by car to do our grocery shopping, for example. We need the REASONS - shop, entertainment, dining, etc - to walk/bike and the MEANS - trails, sidewalks, etc.

Question 26: What is your age?

	Percent	Responses
Younger than 25	2.36%	3
25 to 34	14.96%	19
35 to 44	25.98%	33
45 to 54	23.62%	30
55 to 64	21.26%	27
More than 64	11.81%	15

Question 27: What is your gender?

	Percent	Responses
Male	29.13%	37
Female	70.87%	90

Question 28: Do you live in or own a summer home in Juneau County?

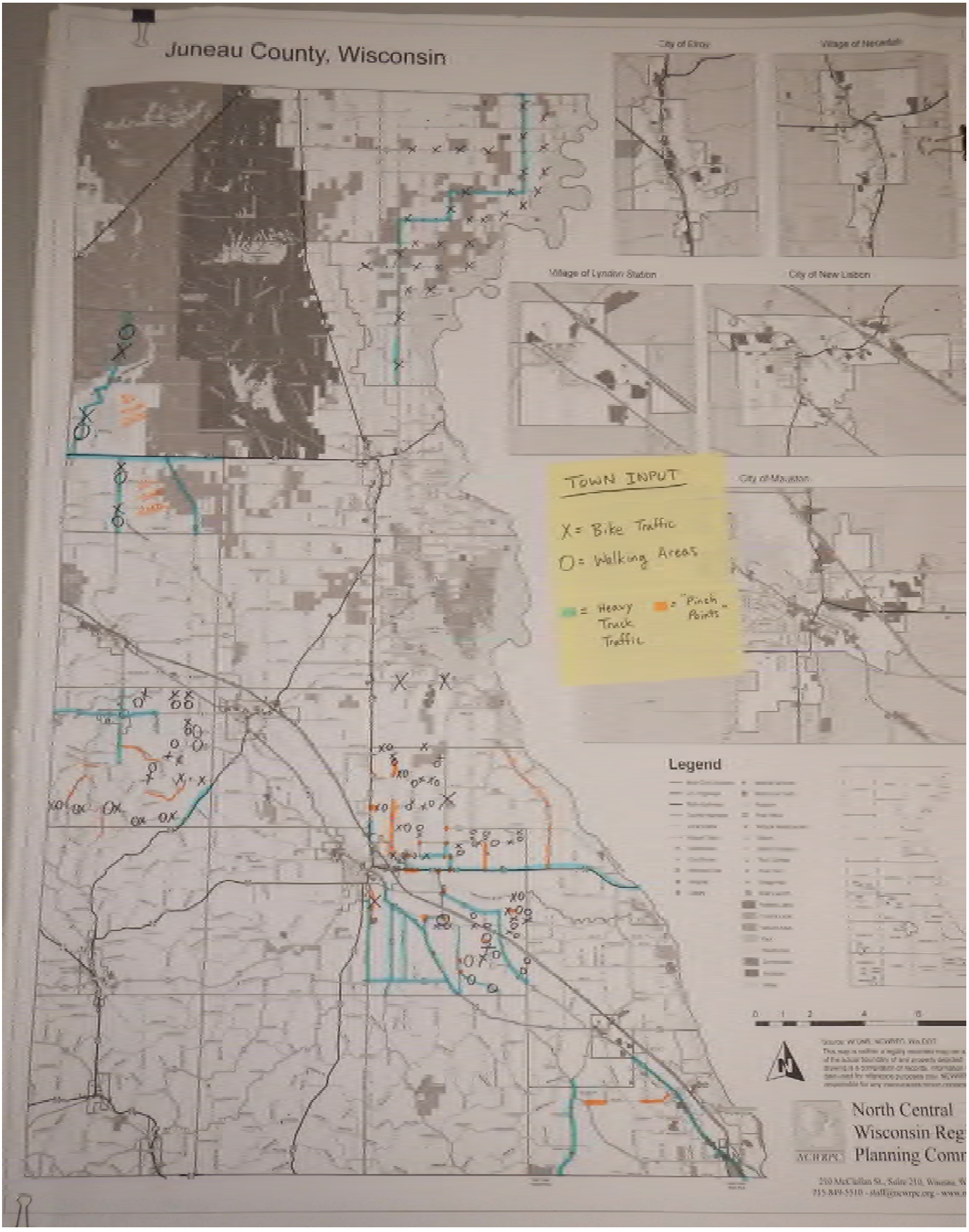
	Percent	Responses
Yes	81.89%	104
No	18.11%	23

Question 29: What municipality is your Juneau County home or summer home located in?

	Percent	Responses
City of Mauston	25.96%	27
City of Elroy	3.85%	4
City of New Lisbon	3.85%	4
Town of Clearfield	5.77%	6
Town of Cutler	1.92%	2
Town of Fountain	2.88%	3
Town of Germantown	6.73%	7
Town of Kildare	3.85%	4
Town of Lemonweir	2.88%	3
Town of Lindina	14.42%	15
Town of Lisbon	3.85%	4
Town of Lyndon	1.92%	2
Town of Marion	3.85%	4
Town of Necedah	0.96%	1
Town of Summit	2.88%	3
Town of Wonewoc	2.88%	3
Village of Camp Douglas	2.88%	3
Village of Hustler	0.96%	1
Village of Lyndon Station	1.92%	2
Village of Necedah	2.88%	3
Village of Union Center	1.92%	2
Village of Wonewoc	2.88%	3

Appendix 2: Town Input Map

Juneau County, Wisconsin



North Central Wisconsin Regional Planning Commission

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Appendix 3: Bike Parking Guidelines

Bicycle Parking Guidelines

A summary of recommendations from the Association of Pedestrian and Bicycle Professionals

Bicycle Parking Design

- Required spaces shall be at least 2 feet by 6 feet.
- An access aisle of at least 5 feet shall be provided in each facility.
- Racks shall be situated to allow a minimum of 2 feet between adjacent bike parking stalls.
- Spaces shall have a vertical clearance of at least 80 inches.

Bicycle Rack Design

Structures that require a user-supplied locking device:

- must accommodate U-shaped locking devices,
- support the bike frame at two points,
- be securely anchored to the cround or the building structure, and
- be designed and maintained to be mud and dust free.

Bicycle Rack Location

- Racks should be located in a clearly designated safe and convenient location.
- Racks should be designed and located to be harmonious with the surrounding environment.
- Racks should be at least as convenient as the majority of auto parking spaces provided.

To learn more about bicycle parking guidelines, visit the Association of Pedestrian and Bicycle Professionals at: www.apbp.org.

These bicycle racks do NOT meet the design guidelines:

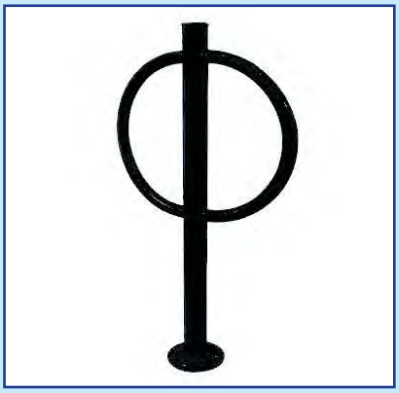
Grid or Fence Style Racks

Wave or Ribbon Style Racks

These bicycle racks DO meet the design guidelines:

Inverted-U Style Racks

Post Hitch Style Racks



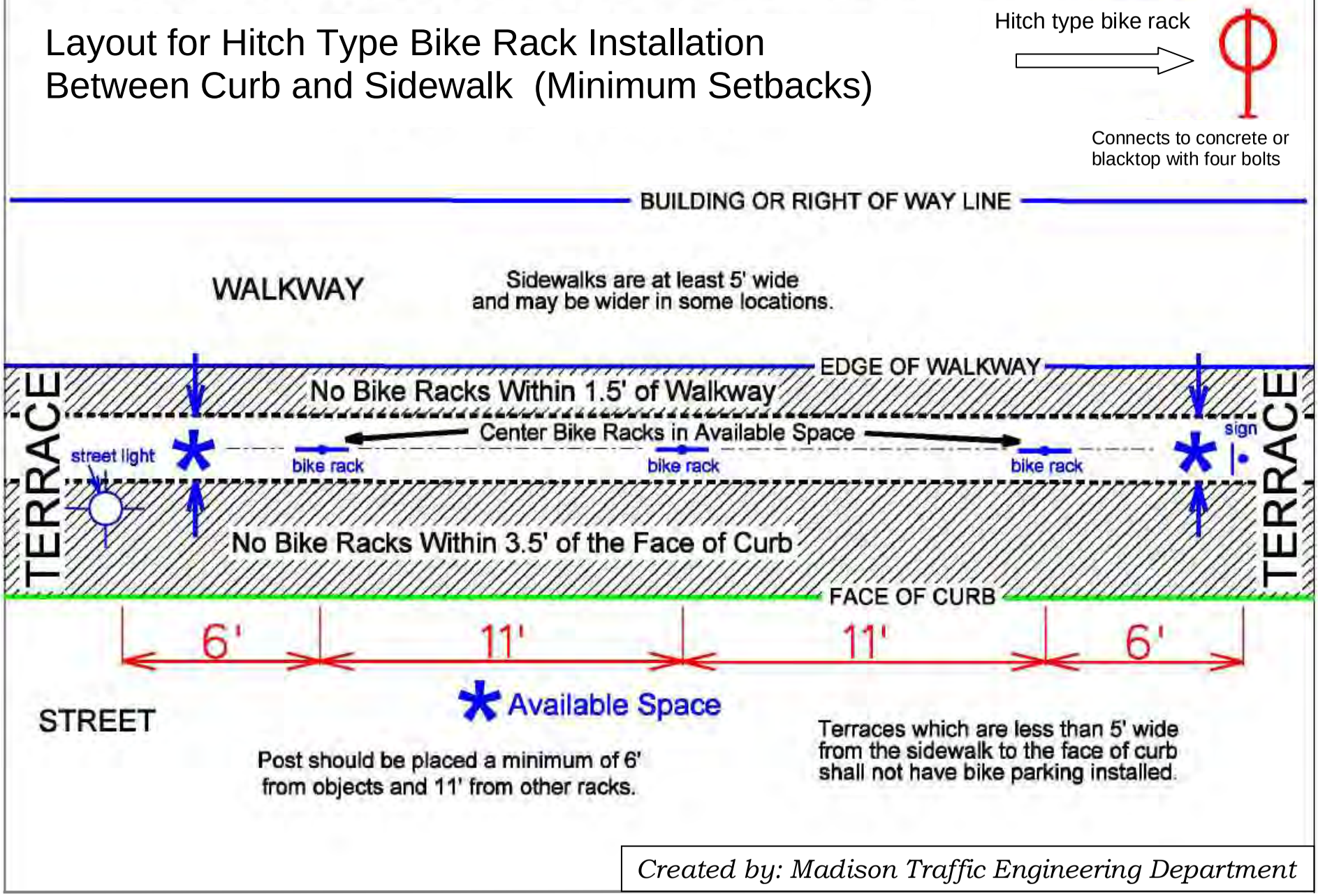
Freestanding Style Racks

The above images are examples only. NCWRPC does not endorse any particular bicycle rack manufacturers.

If you have questions about whether a particular bicycle parking rack you are considering using meets these requirements, please contact NCWRPC planner **Fred Heider**, AICP at **fheider@ncwrpc.org**.

IS THERE ENOUGH ROOM FOR BIKE PARKING RACKS?

Layout for Hitch Type Bike Rack Installation Between Curb and Sidewalk (Minimum Setbacks)



Created by: Madison Traffic Engineering Department

Appendix 4: Model Education Program

Model Education Program

The Bicycle/Pedestrian Coordinator for the City of Madison, Arthur Ross, has developed Table 3 which describes an ongoing program of traffic safety starting at the youngest ages and progressing through driver's education. This table identifies developmental ability groups and what each needs to hear, see, and practice. It can be very helpful when developing bicycle safety programs.

Table 3	**Model Education Program**	
Target Audience	Secondary Audience	Educational Goals
Kids 0-4 (preschool)	Parents Day Care Providers Preschool Teachers Motorists Police Officers	Directed at parents: How to safely bike with children in a child seat or bike trailers. Riding toy safety (big wheels, etc.); driveway and sidewalk issues; stay out of street (boundaries); helmets.
Kids 5-7 (Grades K-2)	Parents Preschool Teachers Teachers Motorists Police Officers	General focus on pedestrian safety. How to cross a street safely; mid-block crossing; curb/edge of road as boundary. Look left-right-left for traffic. Visibility issues (e.g. parked car as a visual screen); make own decision when it is safe to cross, do not just follow the leader. *Note: These lessons apply to bicycle safety as well.*
Kids 8-10 (Grades 3-5)	Parents Teachers After School Programs Motorists Police Officers	Beginning bicycling on the street; how to enter the street safely (re-emphasis of previous age group lessons); which side of the road to ride on; checking for traffic from behind before turning or changing roadway position; stop signs; hazard awareness and avoidance; communicating with other road users; helmets. Learning should take place on-bike as much as possible.
Kids 11-14 (Grades 6-9)	Parents Teachers Motorists Police Officers	Continuation of previous age group skills and move on to more advanced skills: emergency stop; rock dodge; instant turn; lane position in traffic when turning; multi-geared bikes (cadence); route selection; bike and helmet selection, fit, and adjustment; how to fix a flat tire; nutrition for bicycling (eating and drinking); teaching bicycling as a life-long activity.

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Target Audience	Secondary Audience	Educational Goals
Kids 15-18 (Grades 10-12)	Parents Teachers Driver's Ed Instructors Motorists Police Officers	There are two tracks to follow at this age group: 1. Continuation of advanced bicycling skills (operating a bicycle in traffic as a vehicle); and 2. In driver's education – teaching how motorists safely interact with bicyclists and pedestrians in traffic.
Adult bicyclists	Motorists Police Officers	Operating a bicycle as a vehicle in traffic; everything listed above.
Motorist	Police Officers	How to safely share the road with bicyclists. Bicyclists' and motorists' rights and responsibilities with each other.
Parents	Day Care Providers Preschool Teachers After School Programs Youth Group Leaders Police Officers	Proper bike and helmet size, fit, and adjustment; encourage parents to ride with their children, observe their abilities, and grant independence/responsibility as each child is ready. Most parents will need all the information listed above for adult bicyclists as well as the specific information for their children's age group.
Police Officers		All of the above as well as the importance of enforcement of both bicycle and motorist violations as part of the overall traffic safety program.

Appendix 5: School Success Story

Success Story:
Omro Middle School's Bike to School Day… and Beyond

Safe Routes Matters: March/April 2012

Omro Middle School, in northeastern Wisconsin, has a history with Bike to School Day – it held its first Bike to School Day event in May 2010. But it didn't stop there. Program coordinator Joe Horvath supplied students with year-round bicycling activities and infrastructure to encourage students to choose an active commuting lifestyle and active hobbies.

Bike to School Day

The Omro School District held their first Bike to School Day event in May 2010, in conjunction with bicycling activities during the school day. More than 20 percent of students biked to school. A bicycle train program kicked off for the event and continued into the 2010-2011 school year.

Bike Fleet

The school developed a cycling program using a fleet of more than 35 bicycles that is available to students during physical education classes, lunch and special events and trips. The bicycle fleet is maintained by the school's "Young Mechanics," who are trained high school and middle school students working in a fully tooled bike shop. In an age when more and more U.S. cities are establishing bike sharing programs, Omro Middle School organizes and runs a bike share program itself, rather than through the support of a civic or adult organization.

Omro Middle School
Young Mechanics Program

Omro Middle School's physical education teacher has trained a crew of young bicycle mechanics. The young bicycle mechanics work out of the school's "Bicycle Shoppe." Their job is to maintain the school's bicycle fleet, which is used during physical education classes, and assist other students with bicycle maintenance issues. The young mechanics earn "bike bucks" for their work in the Bicycle Shoppe, which they can redeem for bicycle parts, tires, and sale bikes.

—Adapted from Safe Routes Matters, March/April 2012

Bicycle Education and Cyclocross

Omro Middle School has begun developing a bicycle education program and a 0.75-mile cyclocross course on the school campus, connecting the existing on-campus limestone surface trail and the school forest. The course is already used by middle school bicycle education curriculum classes, and the goal is to develop a cyclocross program in the 2011-2012 school year. Instruction in cyclocross racing has been offered the past several years during their middle school Career & Hobby Day held each May.

Annual Bicycle Field Trip

Every year, Omro's eighth graders take two weeks of the bicycle curriculum in their physical education class. Near the end of May, approximately 100 students take part in an eighth-grade bicycle field trip with 30 teacher/parent chaperones. Students are divided into teams for a day-long scavenger hunt spanning 30 miles of bicycling.

Students begin by completing a bicycle safety quiz. Then they ride to their first stop, where a law enforcement officer judges how safely they bicycled. Throughout the day, students bike 2-3 miles at a time to these stations, where adult "Station Masters" assign tasks and ask questions involving bicycle rules and safety, math, language arts, social studies, science and art. Each station also has a healthy snack and water. At the end of the day, Omro Middle School awards donated recreational door prizes at a picnic. The school always raffles off a fully equipped bike, as well as smaller prizes for every student.

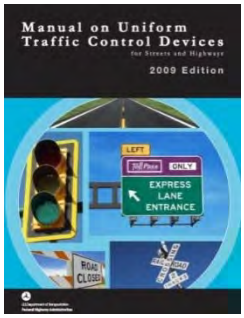
These components lead to a culture committed to year-round bicycling at the school – in fact, three students biked to school every day last year, through all seasons of Wisconsin weather.

"Omro's bicycling programs have established a year-round, enthusiastic bicycling culture that helps students develop a lifelong love for and commitment to bicycling and to physical activity in general," said Lauren Marchetti, director of the National Center for Safe Routes to School. "This culture is made possible by the students and by the program administrators that support them. Joe's heart and commitment to the students typifies what a Safe Routes to School local champion is, and what he or she can accomplish."

****

Appendix 6:
Example Signage & Bike Improvements

The *Manual for Uniform Traffic Control Devices* (MUTCD) is the required manual to use when determining what sign is needed along a road or on private property that is open to the public. Other guides also exist such as NATCO's *Urban Bikeway Design Guide*, and WisDOT's *Wisconsin Bicycle Facility Design Manual*.

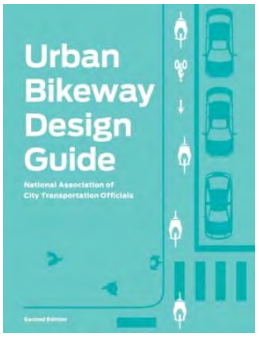


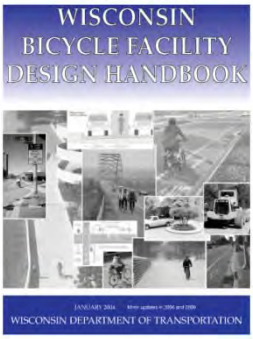
Bike Route Signs

Recommendations:

- Determine if a logo will be used or not (M1-8a is the logo sign). Signs going into other counties may not want to have logos on them (similar to county highways that are named the same in adjacent counties).
- Determine what numbers will be used for each route.
- Coordinate ordering and sign installation per MUTCD requirements with the Juneau County Highway Department.

Sources:





M1-8

M1-8a

Wayfinding Throwback

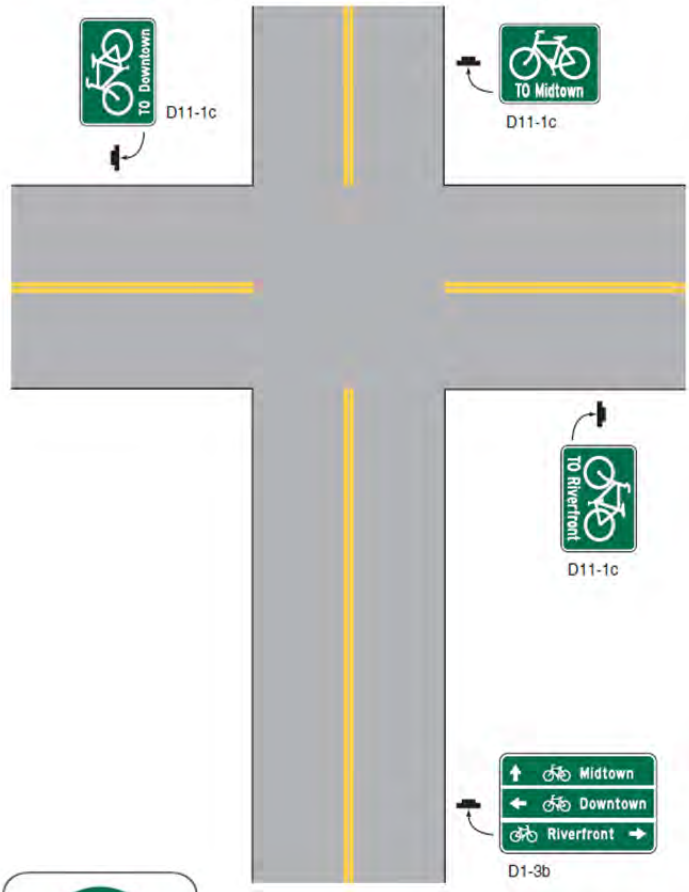
- 1911, a centerline is painted on a Michigan road.
- 1914, the first electric traffic signal is installed in Cleveland.
- 1915, the first STOP sign appears in Detroit.
- 1918, Wisconsin is the first state to erect official route signs as part of its maintenance functions.
- 1920, the first 3-color traffic signal is installed in Detroit.

Possible Bike Loop Route Signs

Recommendations:

- Determine if a Bike Loop Route is temporary (less than 2 years) or long term (2 years or longer). If it is a temporary route, then consider not signing it.
- For long term loop routes, consider using "D1-3b" signs to show each route turn before an intersection (see Figure 9B-6). No need to install "D11-1c" signs, unless you want the rider to verify that they are on the correct route – particularly useful if the intersection is in a busier place (like in a city or village).
- Coordinate ordering and sign installation per MUTCD requirements, and any volunteer assistance, with the Juneau County Highway Department.

Figure 9B-6. Example of Bicycle Guide Signing



Note: Bicycles are allowed on most streets, so don't use "Begin" or "End" signs above a bike route sign. Motorists may interpret their use as bicycles are only allowed on bike routes.

D11-1

M1-8

This "M1-8" sign may be used instead of the "D11-1" sign if route numbers are used.


M5-1 M6-2 M6-1

D1-3

This "D1-3" sign may be used for park wayfinding.

See MUCTD for guidance.

R4-11


W11-1*

W16-1P*

In situations where there is a need to warn motorists to watch for bicyclists traveling along the highway, the SHARE THE ROAD (W16-1P) plaque may be used in conjunction with the W11-1 sign.

Place this sign assembly (below) on:

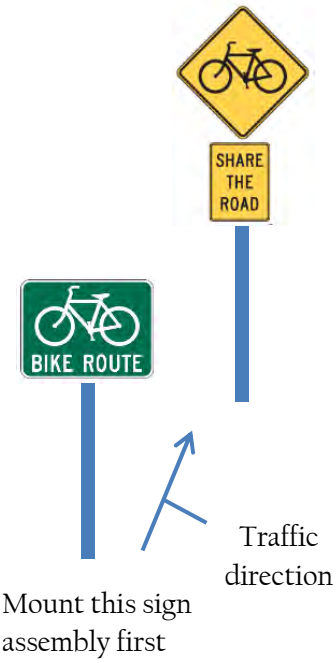
- Roads that enter Antigo. Consult WisDOT for state highways, or the Highway Commissioner for county highways.

Place this sign assembly (below) in line with painted sharrows on:

- Roads where on-street parking is used.
- Business districts.

After the last block where a ***Bike Route*** sign is installed, place the ***Share The Road*** assembly at the start of the next block/road intersection.

If bike route ends at a 4-way intersection, then 3 ***Share The Road*** assemblies should be used – similar to how county highways are signed.



Section 2A.04 Excessive Use of Signs (From MUTCD 2009)

Guidance:

- *Regulatory and warning signs should be used conservatively because these signs, if used to excess, tend to lose their effectiveness. If used, route signs and directional guide signs should be used frequently because their use promotes efficient operations by keeping road users informed of their location.*

NCWRPC Note: Since the green bike route signs (D11-1, and m series) below are guide signs, then frequent use is justified per the above guidance (2A.04). Frequent use is defined below in the NACTO text.

- "...every 2 to 3 blocks along bicycle facilities, unless another type of sign is used (e.g., within 150 ft of a turn or decision sign). Should be placed soon after turns to confirm destination(s). **Pavement markings can also act as confirmation that a bicyclist is on a preferred route."**
  (From NACTO Urban Bikeway Design Guide)

Rural Roads

On quiet country roads, little improvement is necessary to create excellent bicycling routes (fig. 2-9). Examples include town roads and many county trunk highways. State trunk highways and some county trunk highways, however, tend to have more traffic and a higher percentage of trucks. As a result, they are often improved with the addition of paved shoulders (sec. 2.6).

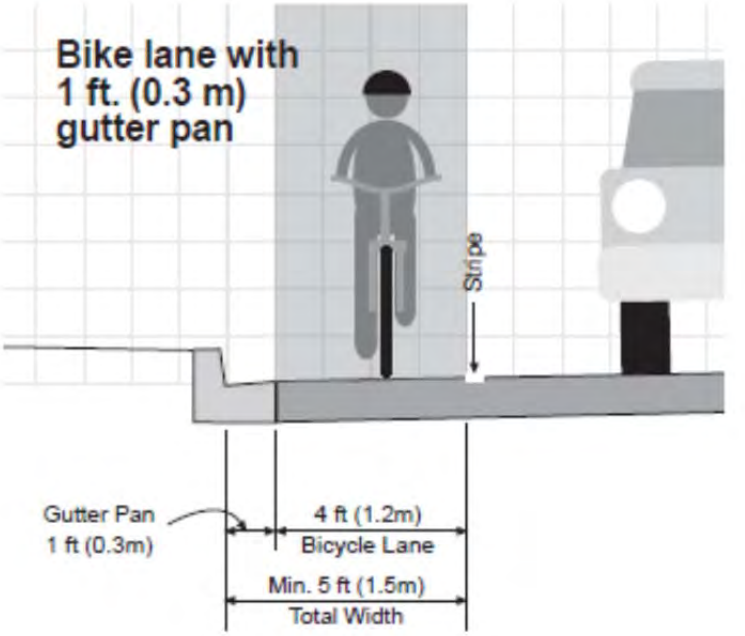
Figure 2-9: Many low-volume country roads need few improvements in order to serve bicyclists well.

No improvements beyond a bike route sign are needed on asphalt paved or seal coated rural roads with traffic volumes less than 500 AADT (annual average daily traffic).

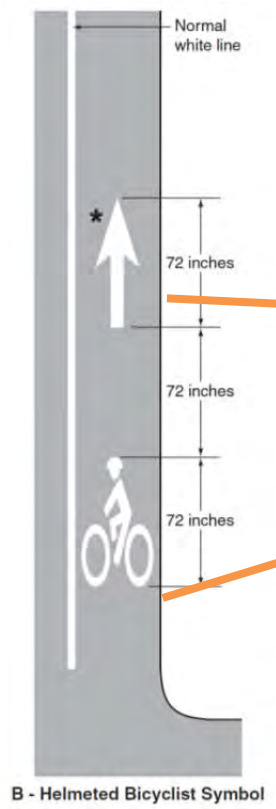
Dust should be controlled on gravel rural roads that are signed as bicycle routes.

Asphalt Road with curb

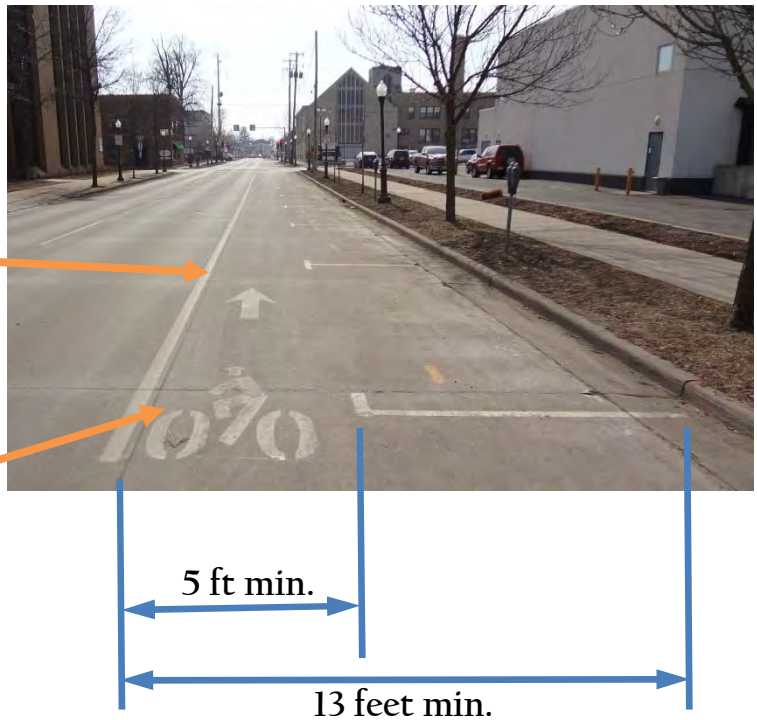
On a curbed asphalt street without parking, the standard clear width of a bicycle lane is 4 feet, as measured from the inside of the stripe to the joint line with the gutter pan. Depending on whether a 1 foot or 2 foot gutter pan is used, the total width from curb fact to the inside of the bike lane stripe would either be 5 or 6 feet total.

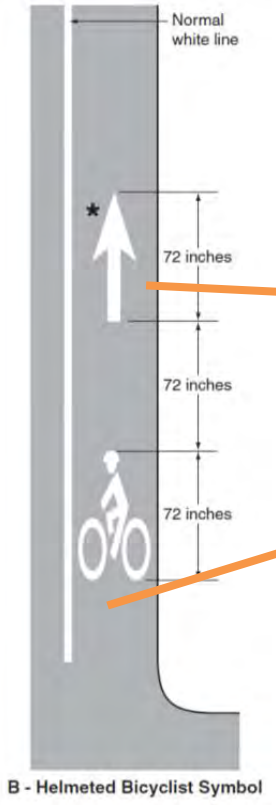


Road with parking and curb

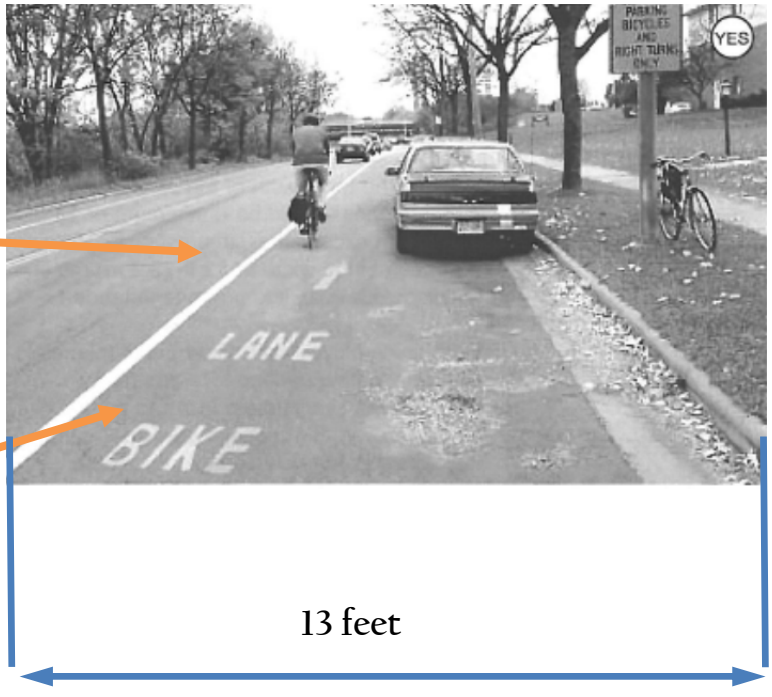


Sample bike lane next to **painted** on-street parking.





Sample bike lane next to **non-painted** parking lane.



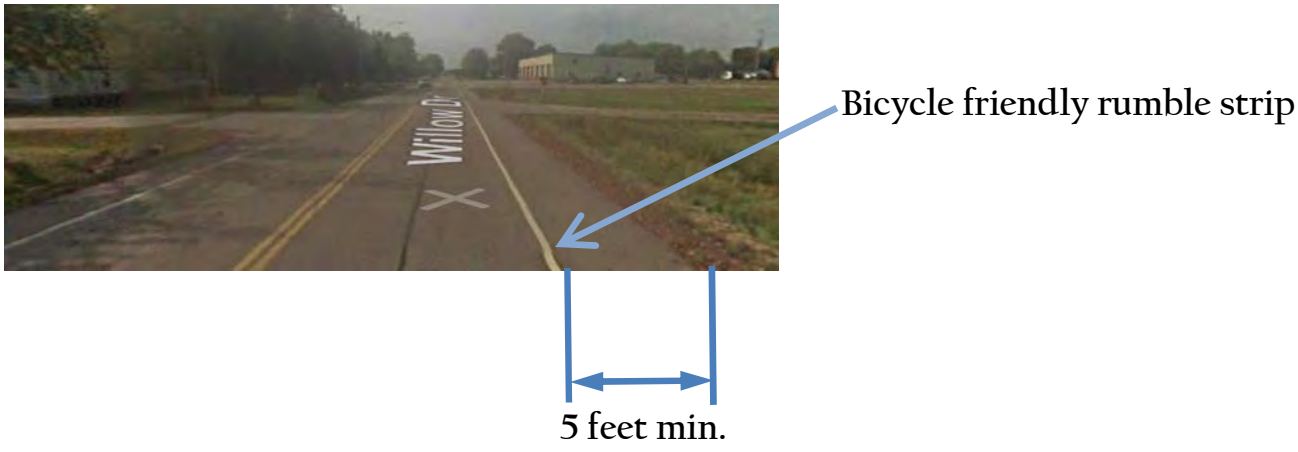
Urban or Paved Shoulder

Where on-street parking is necessary to keep, but where that parking may not be used consistently, an ***urban shoulder*** is suggested to be painted to encompass up to 7 feet of the whole parking lane. This area may be used to park cars and ride a bike in when cars are not there.

NOTE: Do not paint bike lane markings on the shoulder.

Sample ***urban shoulder*** where parking is allowed:

Sample ***paved shoulder*** where parking is allowed:



Recommendations:

- Along higher volume roads, a 5-foot or wider paved shoulder provides safe space for bicyclists. A bicycle friendly rumble strip on the white line helps remind motorists to stay in their lane, and provides an audible que to bicyclists when motorists are not paying attention. Also, trucks and cars can pull off the road to adjust their vehicles.
- If traffic is riding over the white line, then install bicycle safe rumble strips on the white lines.
- Contact your WisDOT Bicycle Coordinator to verify what size shoulder a specific road should have based upon expected bicycle and pedestrian traffic.

Appendix 7: Urban Area Maps

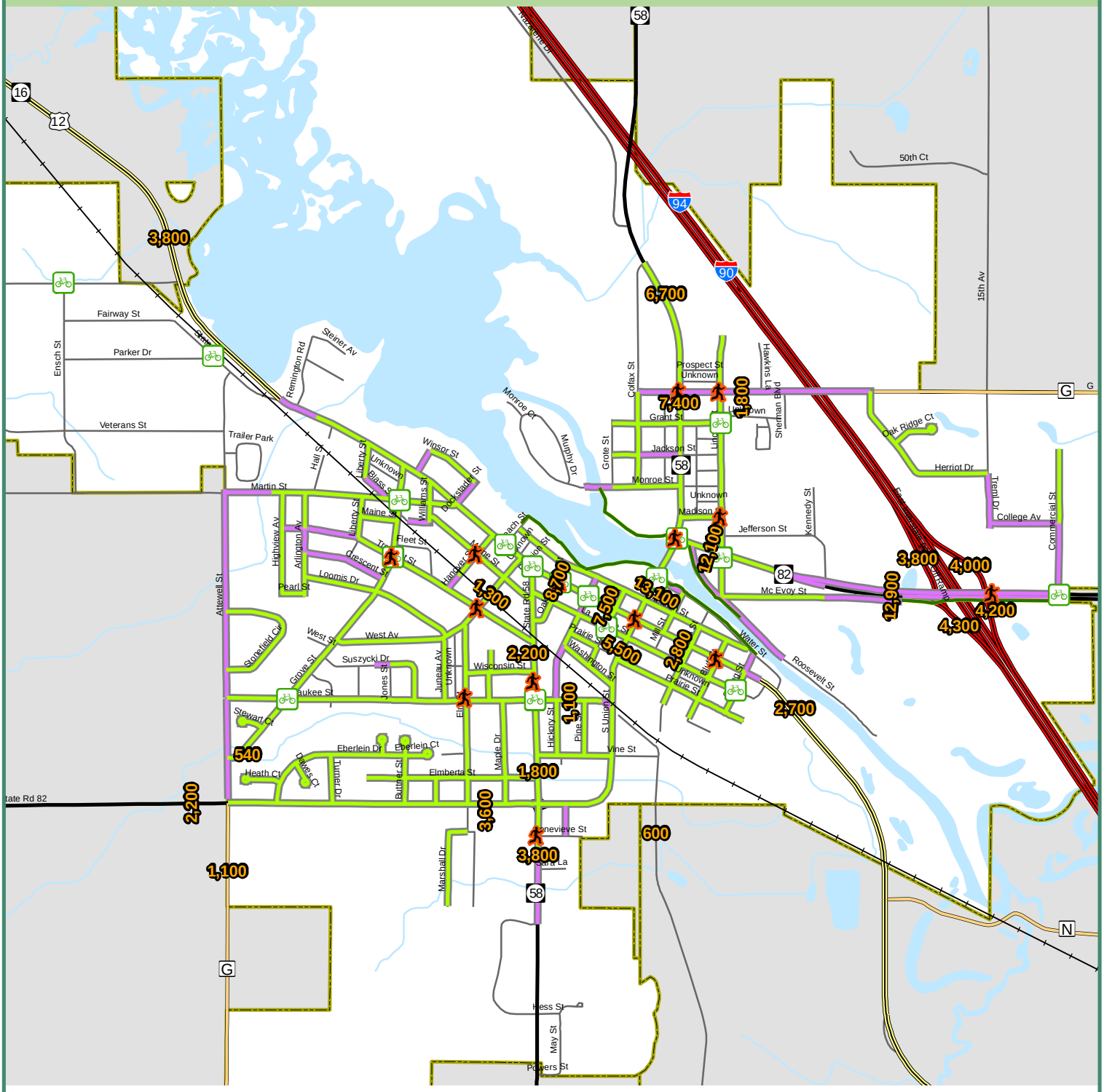
Existing Data maps

&

Proposed Improvement maps

City of Mauston

Existing Data



Legend

- Interstate
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Water

Sidewalk Location

- Both Sides
- One Side
- Bike & Ped Path

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 400 Traffic Counts

N

0 0.2 0.4 0.8 Miles

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Source: WI DNR, NCWRPC, Juneau Co.

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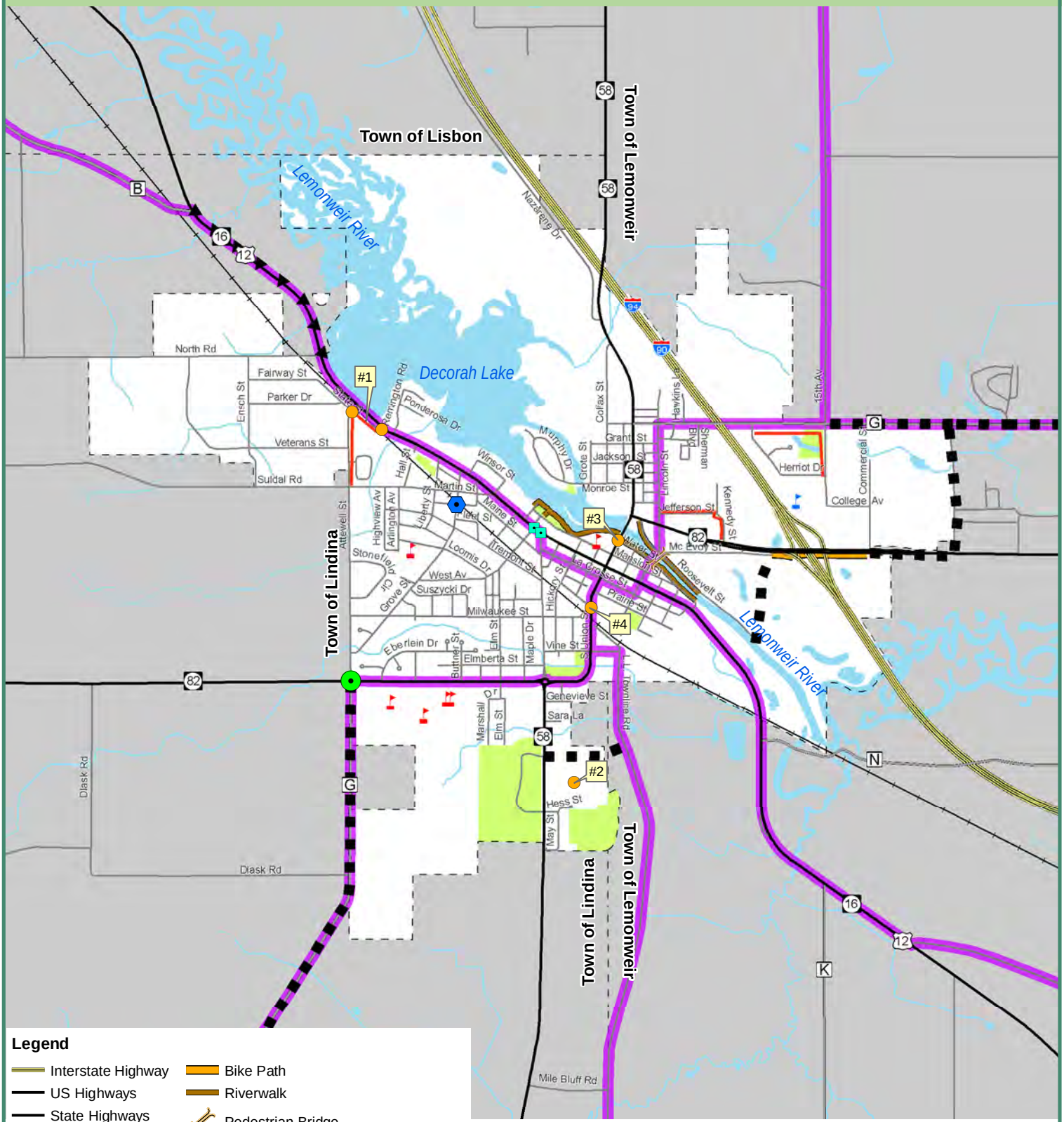
North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan Street, Suite 210, Wausau, Wisconsin 54403
(715) 849-5510 www.ncwrpc.org

City of Mauston

Proposed Improvements



Legend

- Interstate Highway
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Park Boundary
- Schools
- Tech College
- Bike Path
- Riverwalk
- Pedestrian Bridge
- Proposed Improvements
- Proposed Pedestrian Island
- Proposed Roundabout
- Proposed Sidewalk Across Railroad
- Proposed Off Street Bike Path
- Proposed Rumble Strip and Shoulder
- Proposed Sidewalk
- Proposed Bike Routes

(See Map 8 for Proposed Route Notice)

N

0 0.425 0.85 Miles

Source: WI DNR, NCWRPC, Juneau Co.

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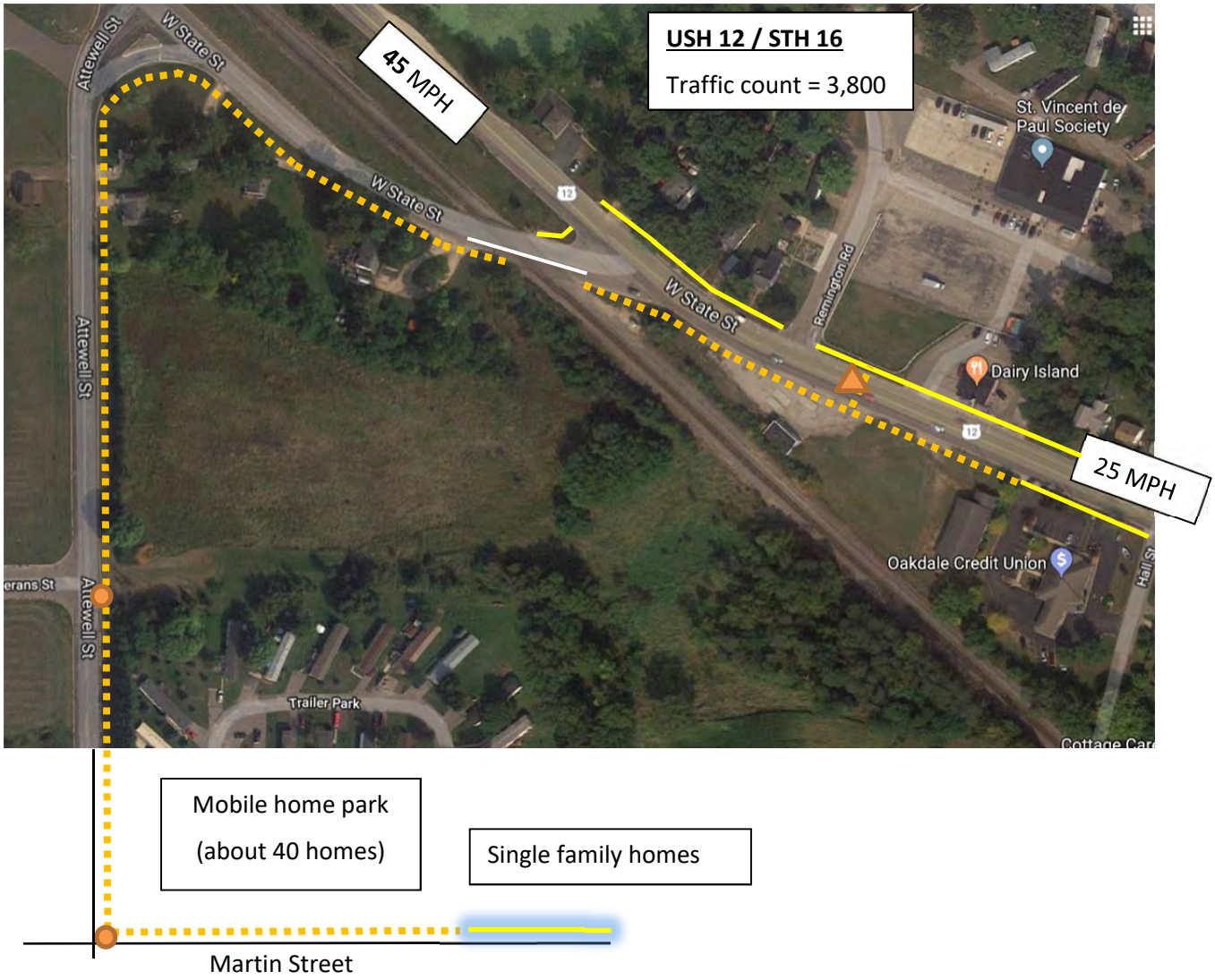
Mauston #1

Recommendation: Improve pedestrian access across USH 12 / STH 16 just south of W. State Street. Use existing paved shoulder to extend sidewalk across railroad tracks into industrial park along W. State Street, and continue south along Attewell St, past mobile home park, and connect with existing sidewalk on Martin Street.



= Existing sidewalk

= Proposed white line to delineate shoulder for walking across railroad tracks.

= Proposed sidewalk

= Proposed curb ramp

= Proposed pedestrian island

Mauston #2

Recommendations:

1. Construct raised sidewalks through parking lot that are wide enough so that parked cars don't hang over sidewalk.
2. Extend City sidewalks down to the Hess St neighborhood.

= Existing sidewalk

= Proposed sidewalk

= Proposed combination of at-grade sidewalk (no curb) and painted crosswalks

= Proposed curb ramp

= Proposed pedestrian island

Mauston #3

Recommendation: Improve crosswalk across the 4-lanes of N. Union St by installing a rectangular rapid flash beacon (RRFB) with push button actuator.

= Proposed rectangular rapid flash beacon (RRFB) with push button actuator.

= Mauston's Riverwalk (a major travel and recreational trail).

Mauston #4

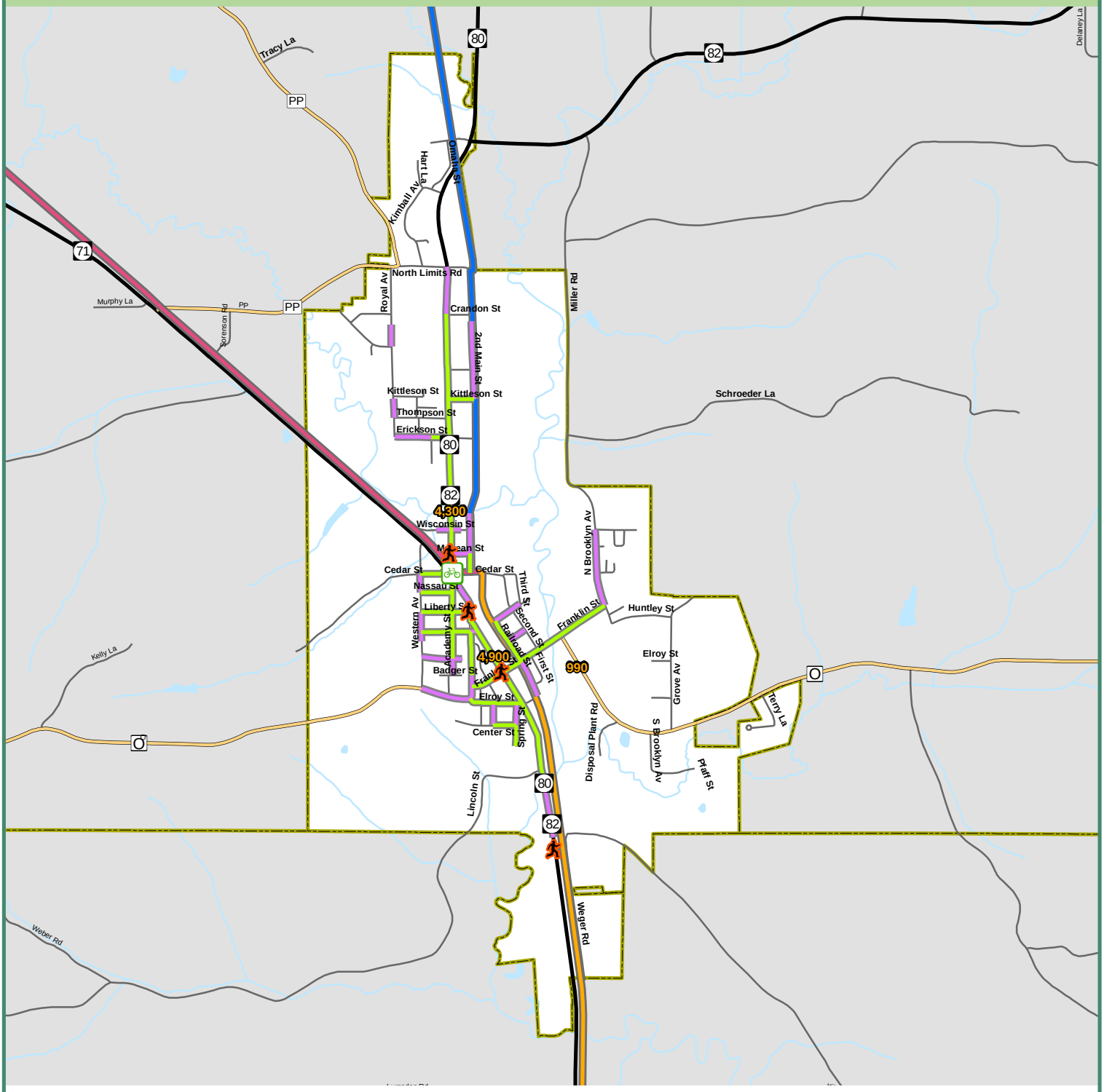
Recommendation: Paint stop lines perpendicular to the travel lane, not perpendicular to the crosswalk.

= Existing stop line.

= Proposed stop line.

City of Elroy

Existing Data



Legend

- Interstate
- US Highways
- State Highways
- County Highways
- Local Roads
- Water

Sidewalk Location

- Both Sides
- One Side

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 400 Traffic Counts

Trails

- "400" State Trail
- Elroy-Sparta State Trail
- Omaha Trail

N

0 0.225 0.45 0.9 Miles

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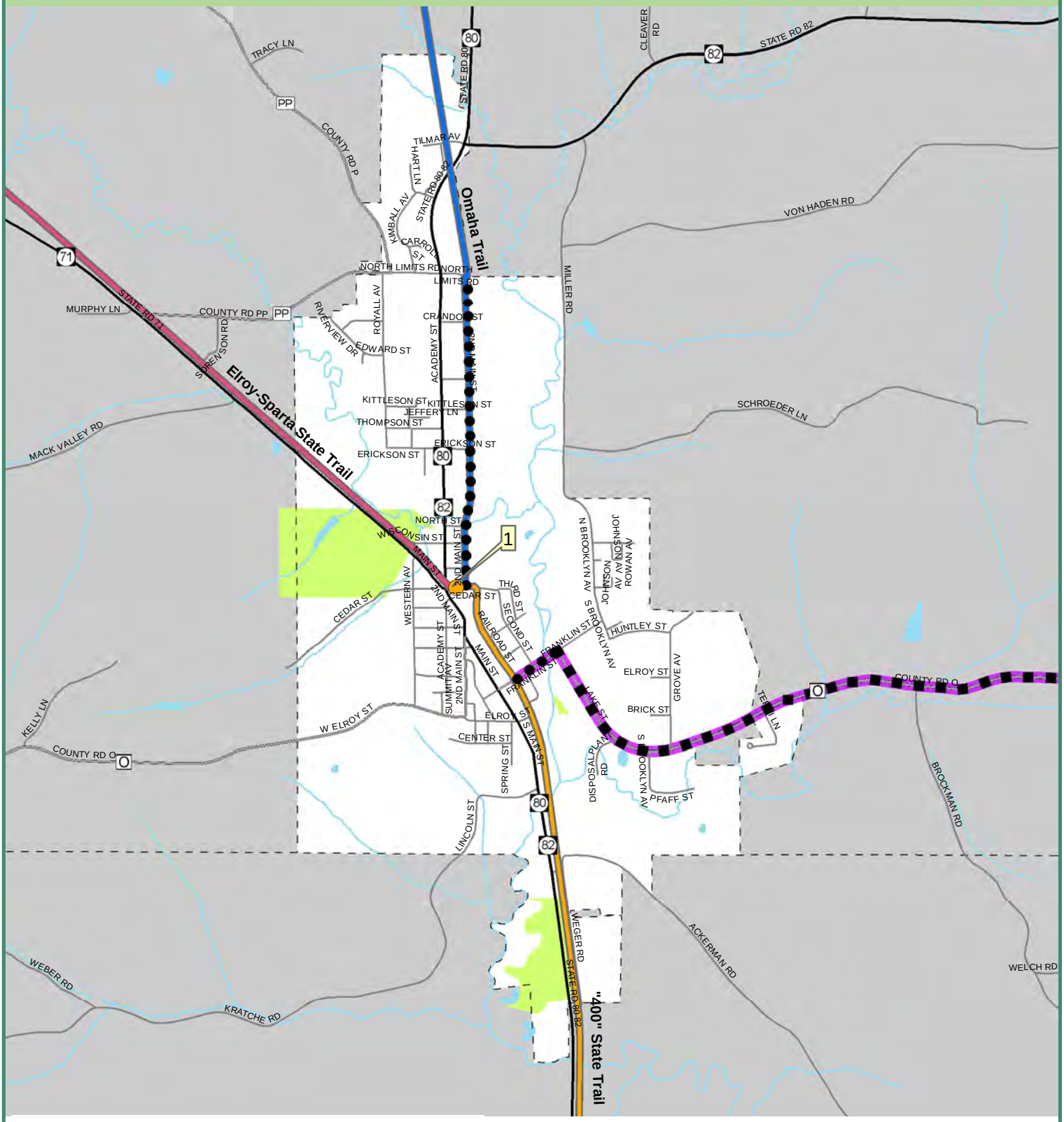
City of Elroy

Proposed Improvements



Legend

- Interstate Highway
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Parks
- Proposed Improvements
- Paint "sharrows" on road
- Proposed Off Street Bike Path
- Proposed Bike Routes

Existing Trails

- "400" State Trail
- Elroy-Sparta State Trail
- Omaha Trail

(See Map 8 for Proposed Route Notice)

N

0 0.225 0.45 Miles

Source: WI DNR, NCWRPC, Juneau Co.

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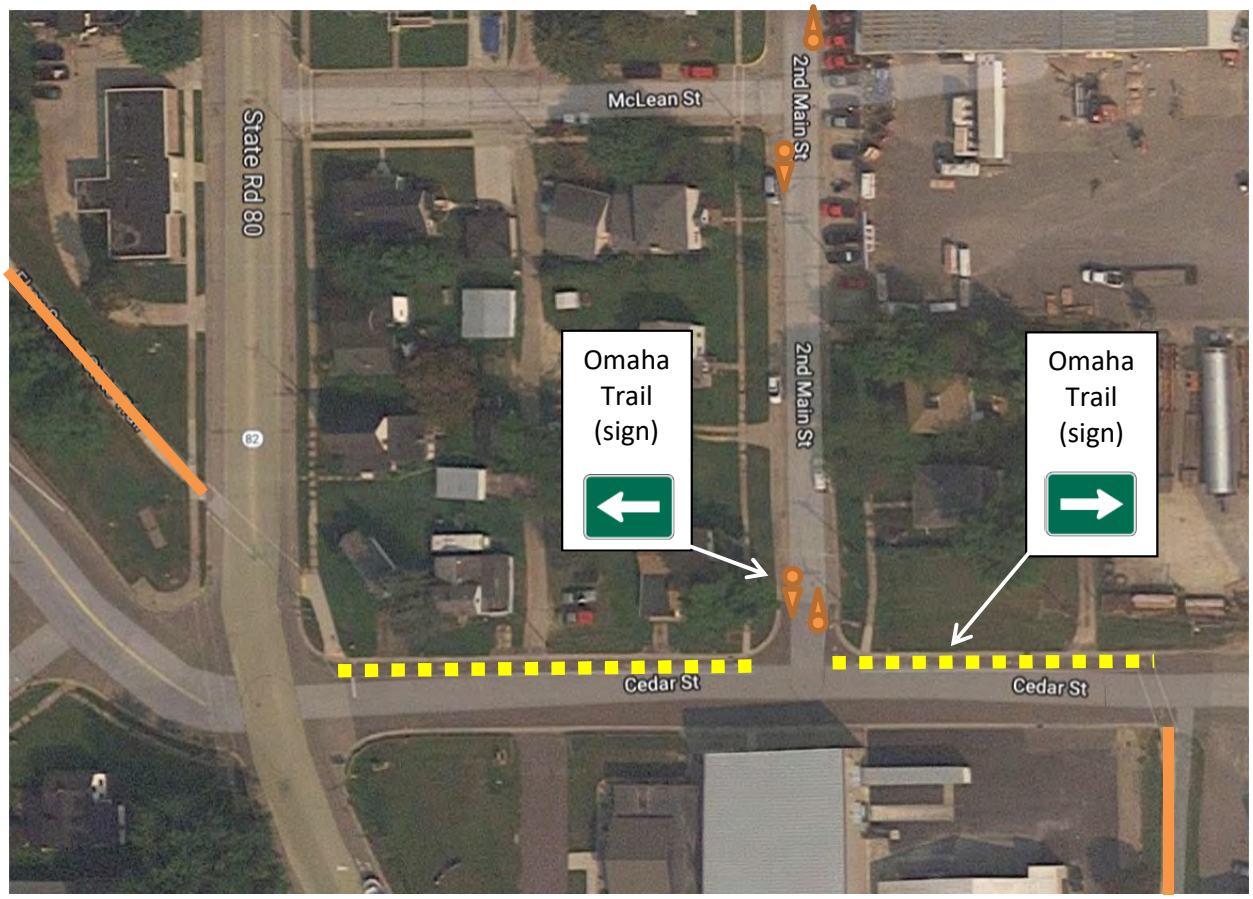
Elroy #1

Recommendation: Provide two-way bike lane on Cedar Street for Elroy-Sparta State Trail to use. Also delineate and sign Omaha Trail's road route.

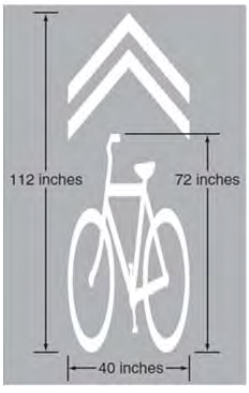


= Elroy-Sparta State Trail.

= Proposed 10-foot wide, two-way bike lane painted onto the road, with reflective delineators mounted to parking stops that are placed on the painted bike lane line.

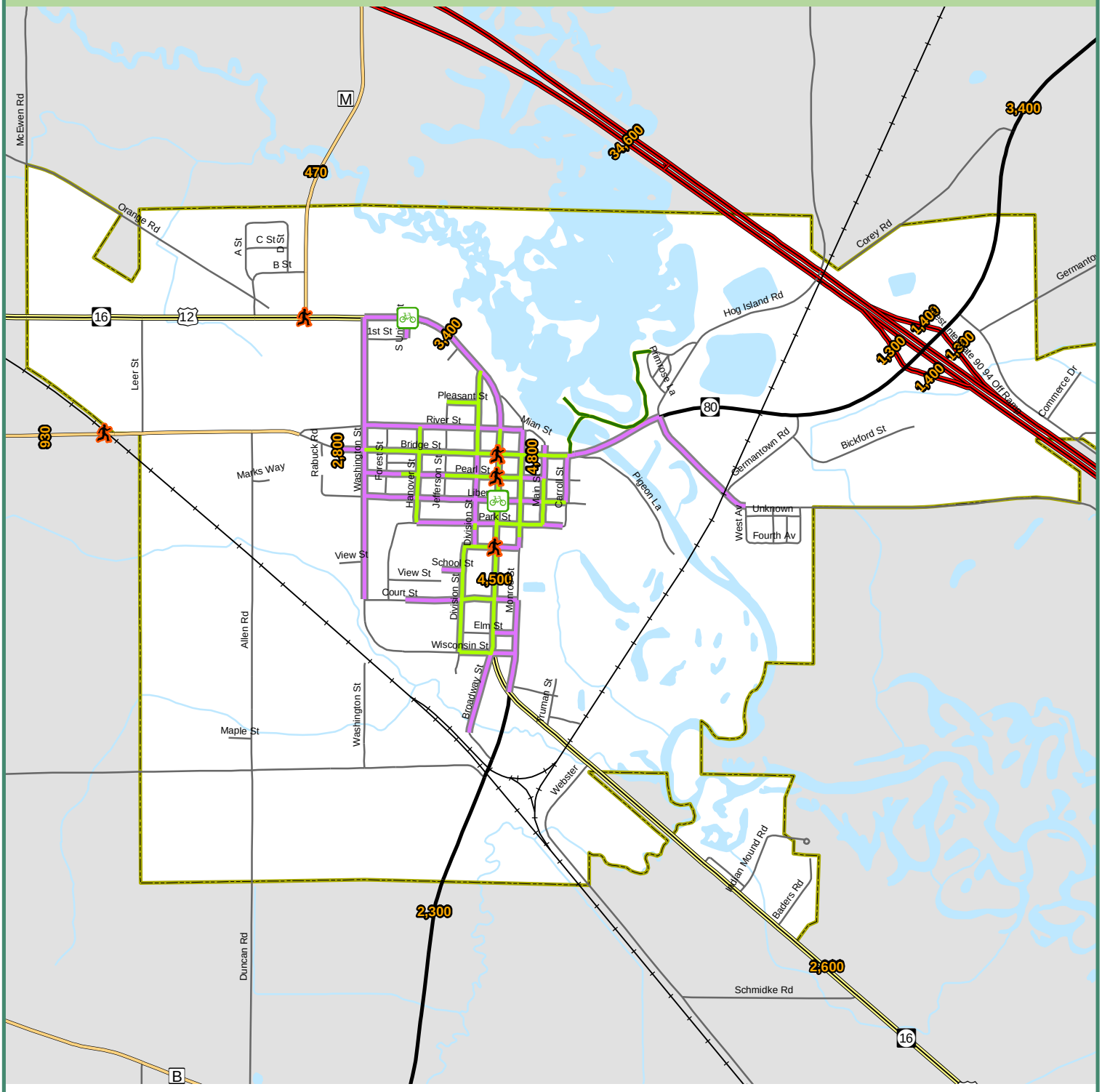
= **Shared Lane Marking** (sharrow), with **<u>Omaha Trail</u>** sign mounted to post next to each shared lane marking.

Shared Lane Marking
"Sharrow"



City of New Lisbon

Existing Data



Legend

- Interstate
- US Highways
- State Highways
- County Highways
- Local Roads
- Water
- Railroad

Sidewalk Location

- Both Sides
- One Side
- Bike & Ped Path

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 400 Traffic Counts

N

0 0.175 0.35 0.7 Miles

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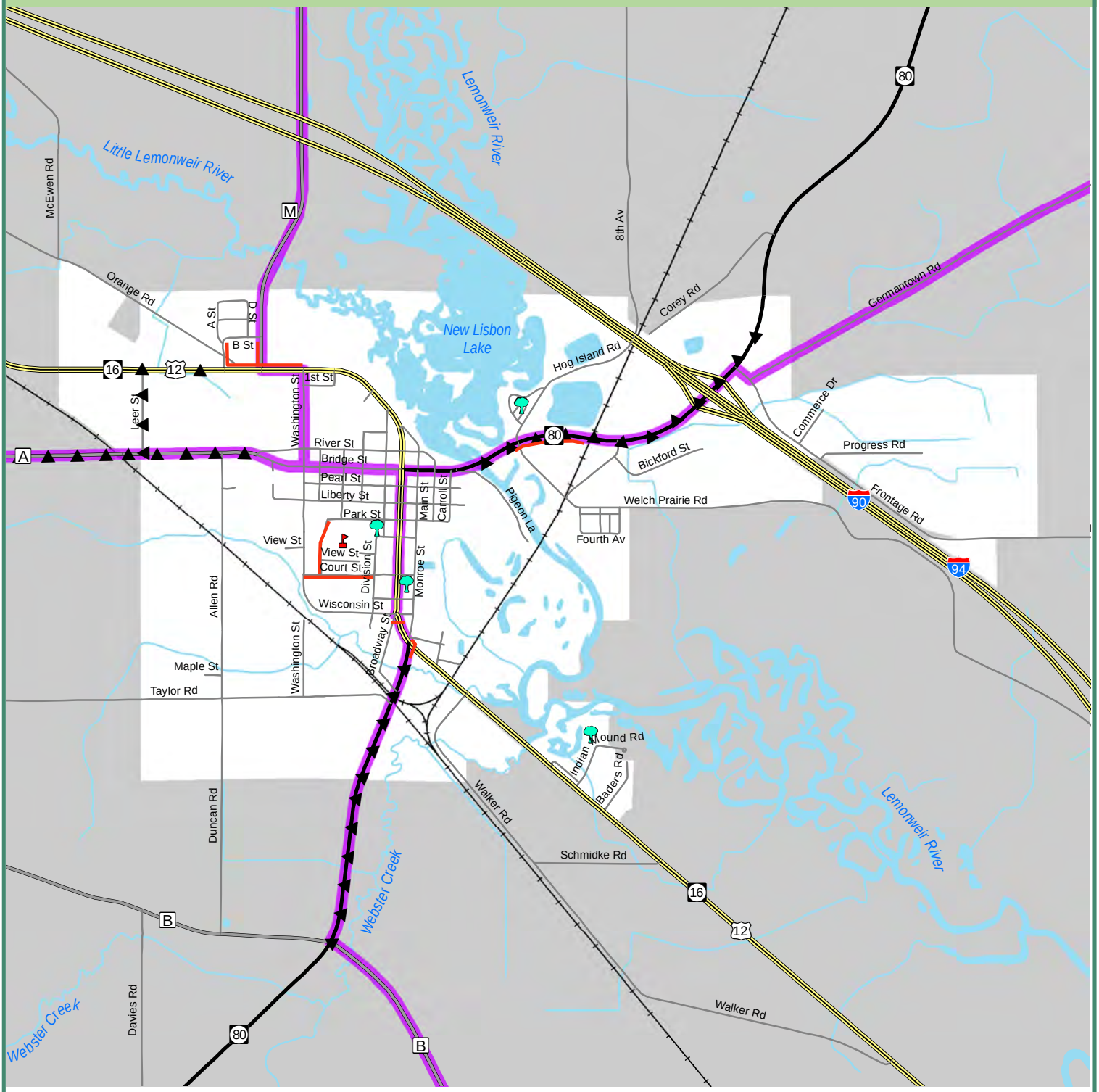
City of New Lisbon

Proposed Improvements



Legend

- U.S. Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Water
- School
- Park
- Proposed Rumble Strip and Shoulder
- Proposed Sidewalk
- Proposed Bike Routes

(See Map 8 for Proposed Route Notice)

N

0 0.125 0.25 0.5 0.75 Miles

Source: WI DNR, NCWRPC, Juneau Co.

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New Lisbon #1 – Un-mapped Recommendation

The City of New Lisbon Code of Ordinances includes the following items that are relevant to bicycling and walking within the City.

Under Section 229-3, bicyclists are granted the same rights and responsibilities applicable to a motorized vehicle driver when driving on roadways. Section 229-5 covers general regulations for bicycle. Generally, these regulations fall under either requirements or actions that are prohibited. Below is an overview of prohibited actions:

Prohibited Actions

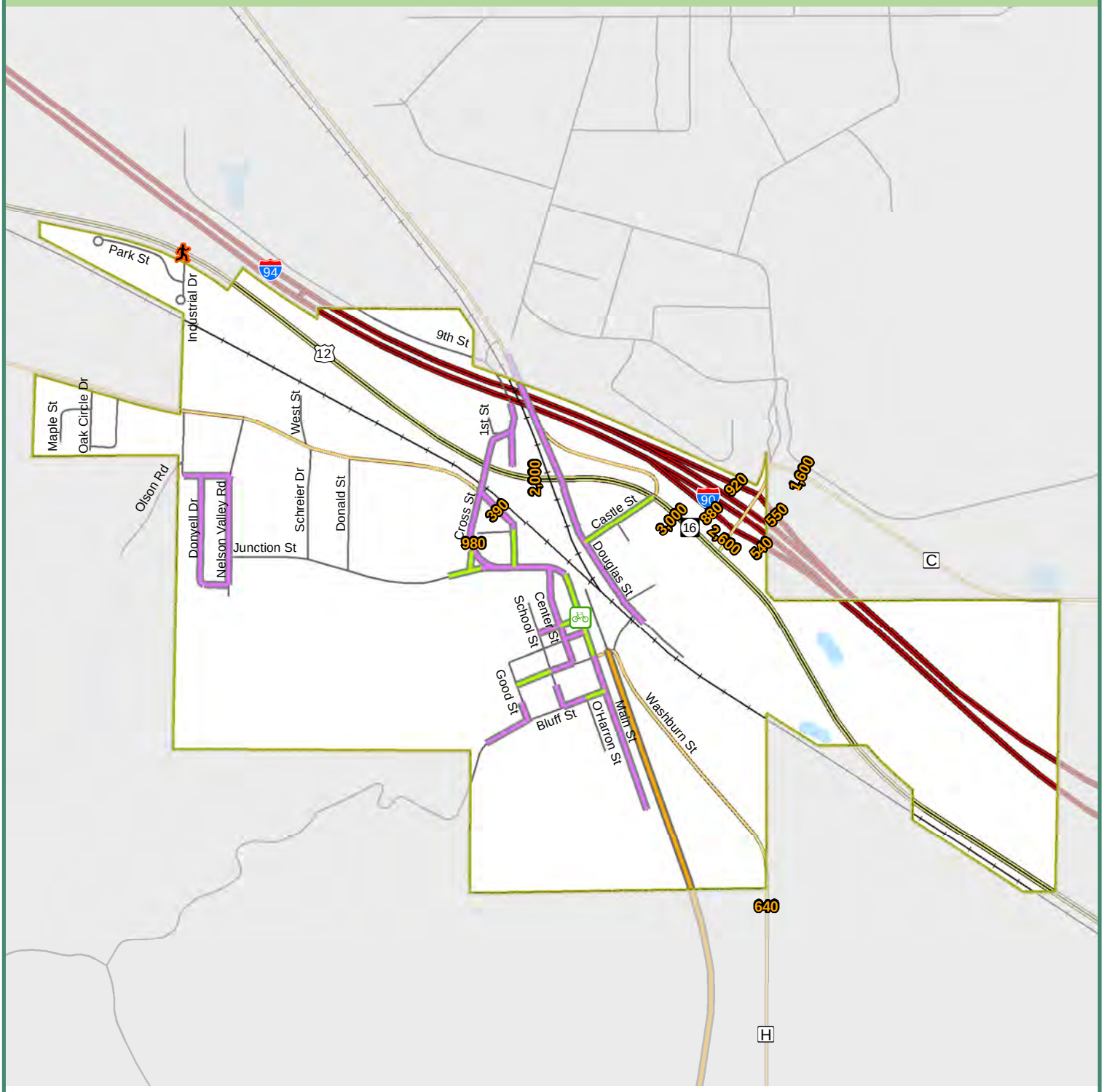
- Bicyclists shall not carry more persons than their bicycle is designed to handle
- While riding, carrying packages, bundles, or articles that prevents the safe operation of a bicycle is prohibited
- Removing both hands or feet from the handlebars/pedals is prohibited
- Parking in front of or adjacent to commercial establishments

Recommendation: Consider revising the City of New Lisbon's Code of Ordinances, Section 229-5, to allow bicycles to be parked in front of or adjacent to commercial establishments as long as they are parked in bike racks.

Appendix 3 has a sheet showing where to install bike racks in downtowns on sidewalks, and another sheet showing what type of bike racks to acquire.

Village of Camp Douglas

Existing Data



Legend

- Minor Civil Division
- Interstate
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Water

Sidewalk Location

- Both Sides
- One Side

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 400 Traffic Counts

Trails

- Omaha Trail

N

0 0.125 0.25 0.5 Miles

Source: WI DNR, NCWRPC, Juneau Co.

Prepared By:
North Central Wisconsin Regional Planning Commission
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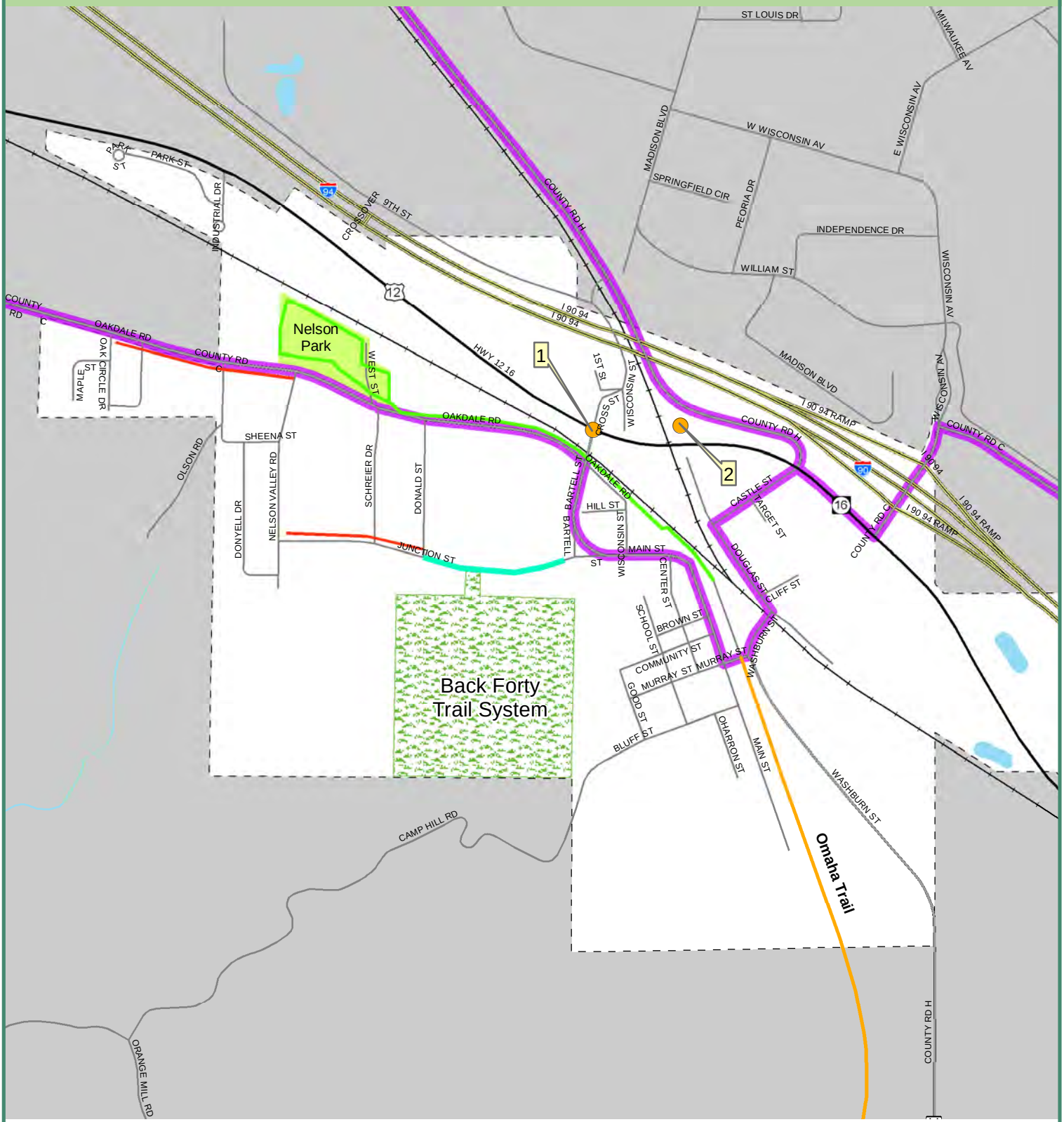
Village of Camp Douglas

Proposed Improvements



Legend

- Interstate Highway
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Parks
- Omaha Trail
- Proposed Improvements
- Proposed 10' bike/ped path
- Proposed Sidewalk
- Proposed 5' shoulders & 10' lanes, both sides
- Proposed Bike Routes

(See Map 8 for Proposed Route Notice)

N

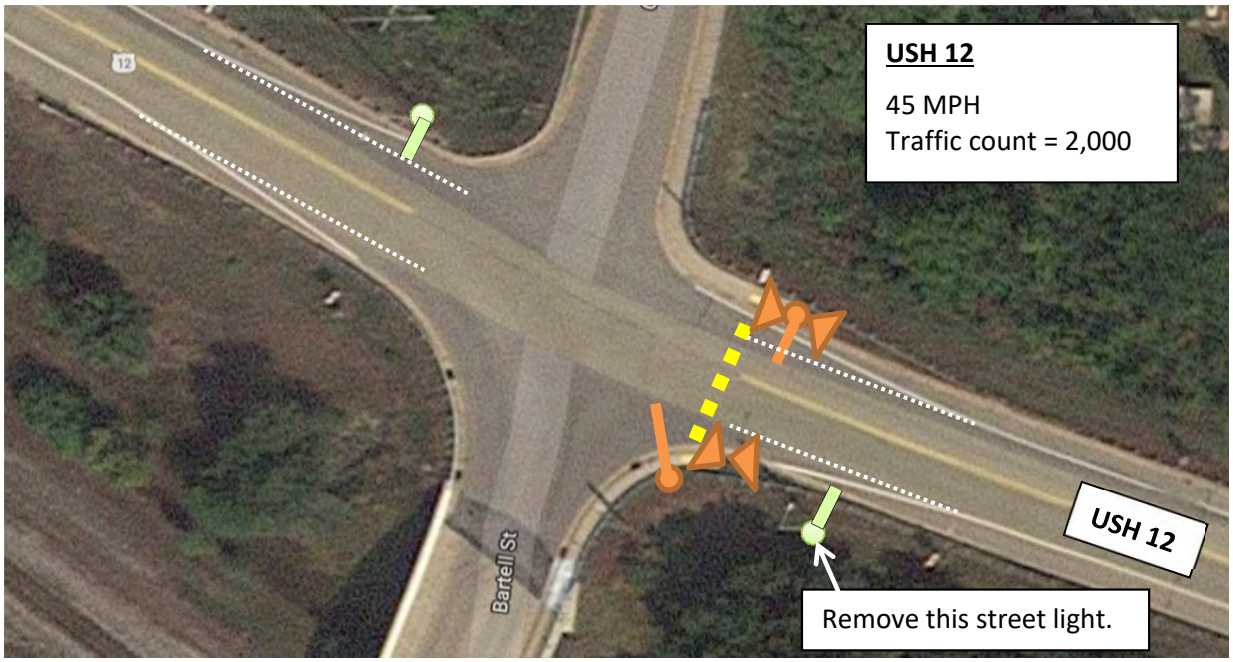
0 0.1 0.2 Miles

Source: WI DNR, NCWRPC, Juneau Co.

Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan Street, Suite 210, Wausau, Wisconsin 54403
(715) 849-5510 www.ncwrpc.org

Camp Douglas #1

Recommendation: Improve Bartell St crosswalk across USH 12 by improving lighting and painting a high visibility crosswalk (e.x. Continental, Zebra, or Ladder styles).



= Existing street light

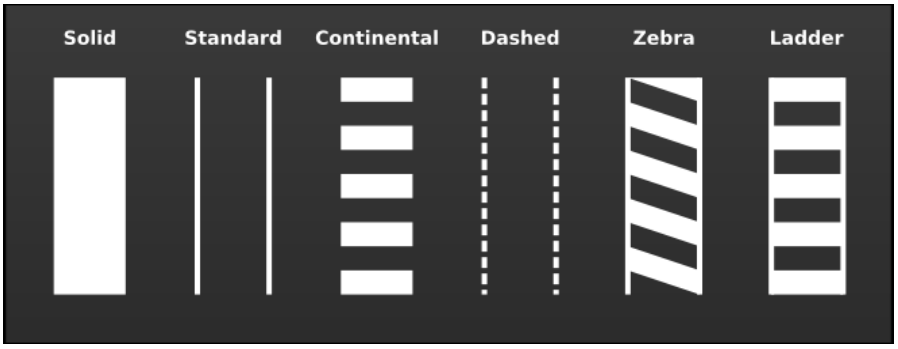
= Proposed new street light location. This will provide light on each side of a pedestrian to make them more visible.

= Proposed painted crosswalk

= Extend urban shoulder white line to be parallel to travel lane.

= Proposed rectangular rapid flash beacon (RRFB) with push button actuator. Additional RRFBs may be needed in advance of this intersection along USH 12 that remotely activate simultaneously with the intersection RRFBs. Ask WisDOT and the Highway Dept to review this intersection.

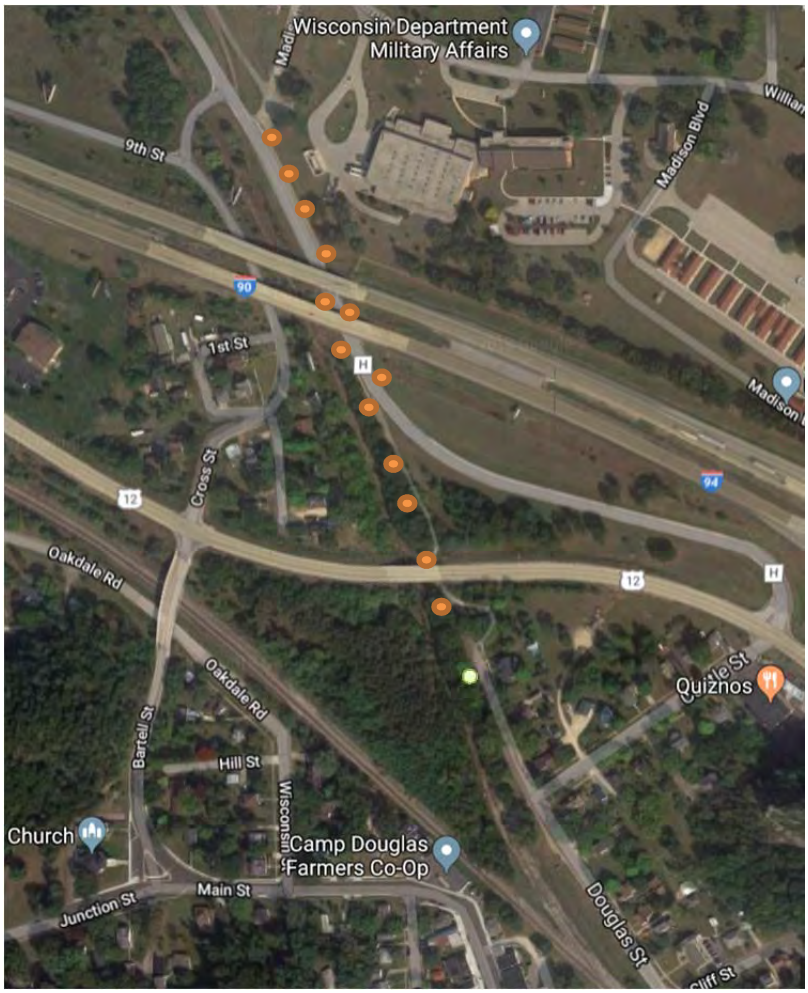
Crosswalk Styles



Source: FHWA

Camp Douglas #2

Recommendation: Add lighting to sidewalk that connects Douglas Street north to Madison Blvd on the military base.



= Existing street light

= Proposed new street light location, including under bridges.

Camp Douglas #3 – Un-mapped Recommendation

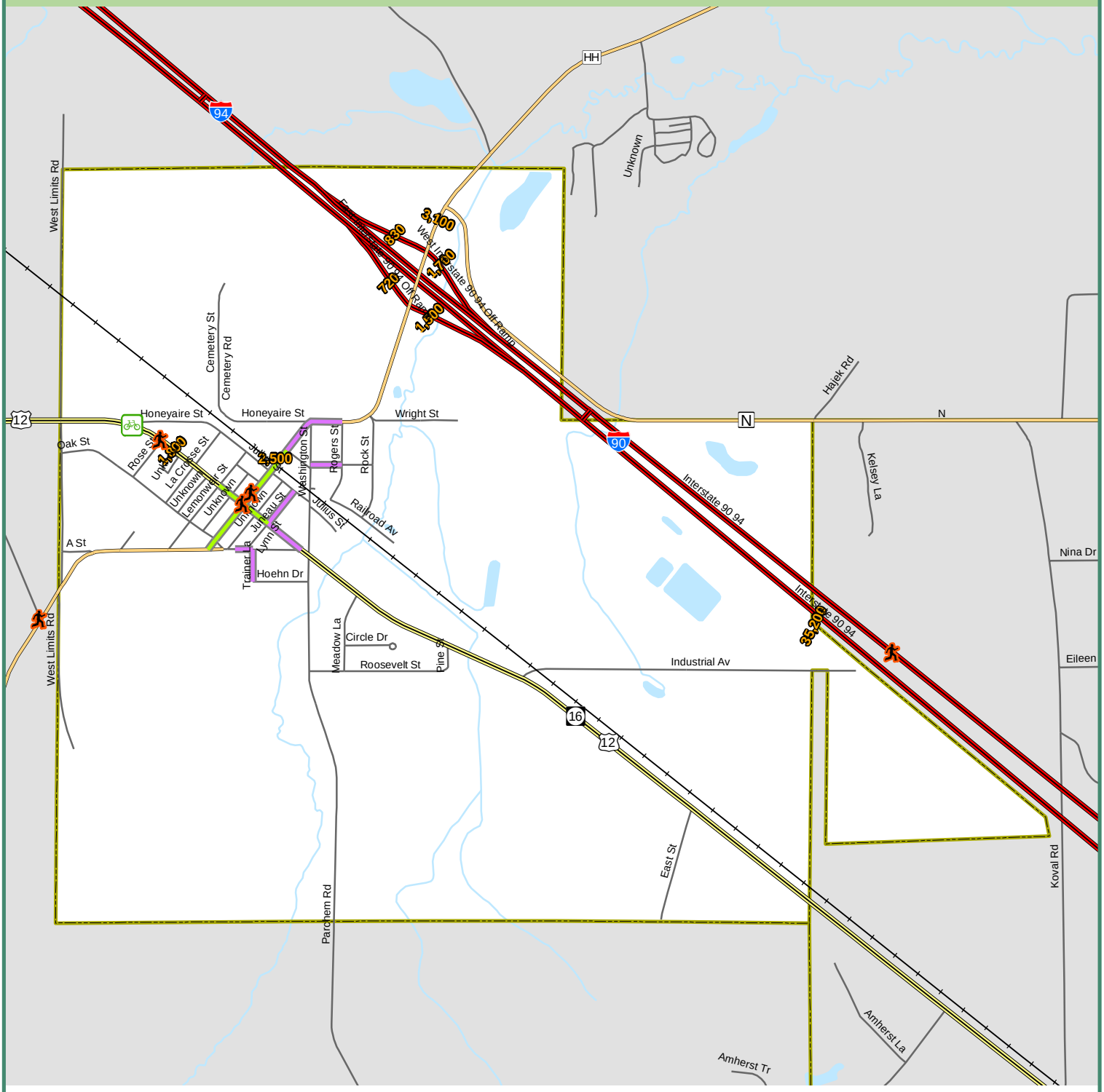
The Village of Camp Douglas has a forty acre parcel that has hiking/biking trails on it called the Back Forty Trail System. A member of the Advisory Group toured the Back Forty trails, and noted that only expert bicyclists could ride those trails due to their level of difficulty.

Recommendation 1: Improve Back Forty trails so they become more accessible for most bicyclists in Camp Douglas.

Recommendation 2: Install wayfinding signs to direct Omaha Trail users to the Back Forty trails.

Village of Lyndon Station

Existing Data



Legend

- Interstate
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Water

Sidewalk Location

- Both Sides
- One Side

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 400 Traffic Counts

N

0 0.15 0.3 0.6 Miles

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Source: WI DNR, NCWRPC, Juneau Co.

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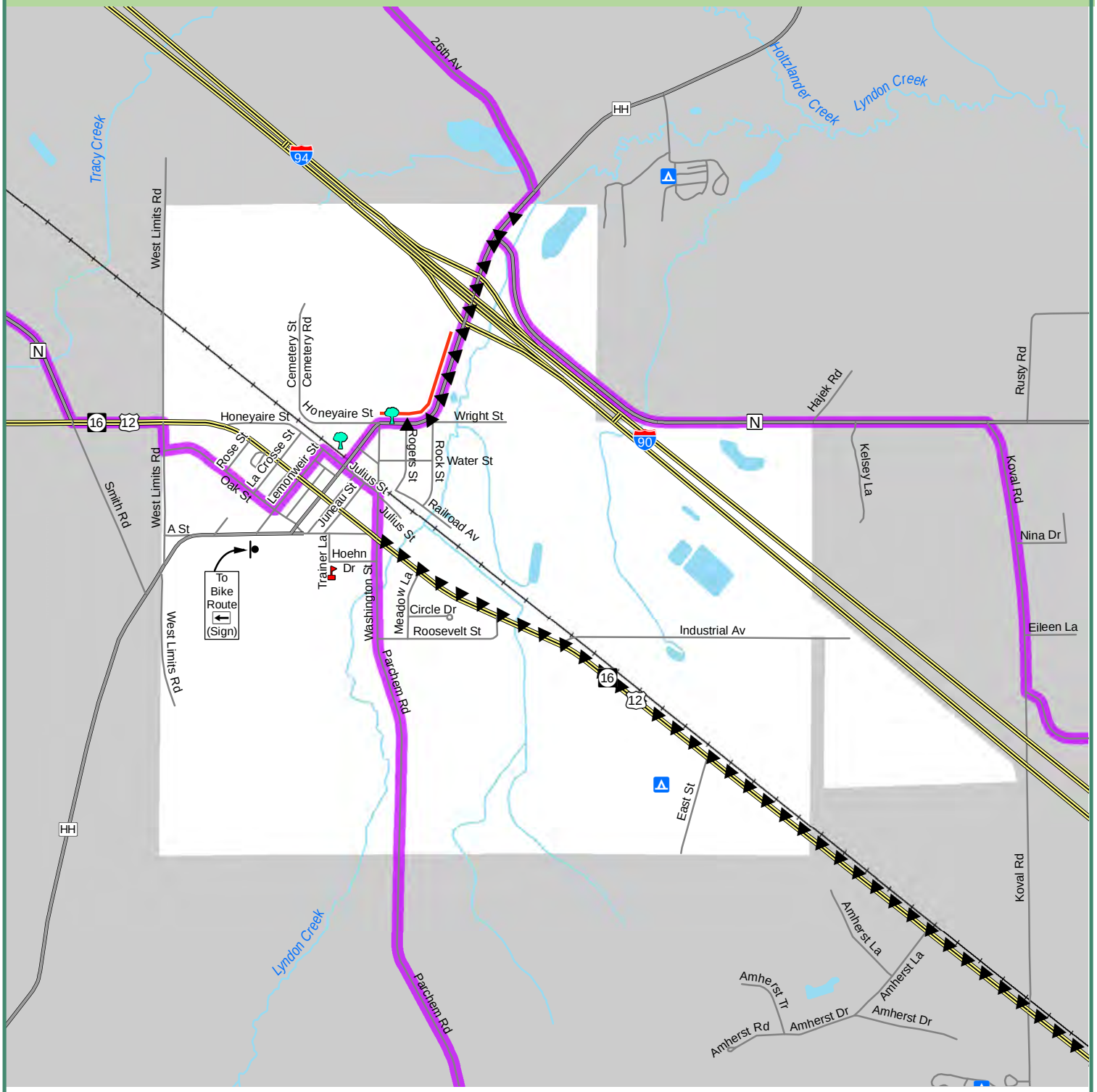
Village of Lyndon Station

Proposed Improvements



Legend

- U.S. Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Water
- School
- Campgrounds
- Village Park
- Proposed Sidewalk
- Proposed Rumble Strip and Paved Shoulders
- Proposed Bike Routes

(See Map 8 for Proposed Route Notice)

N

0 0.1 0.2 0.4 0.6 Miles

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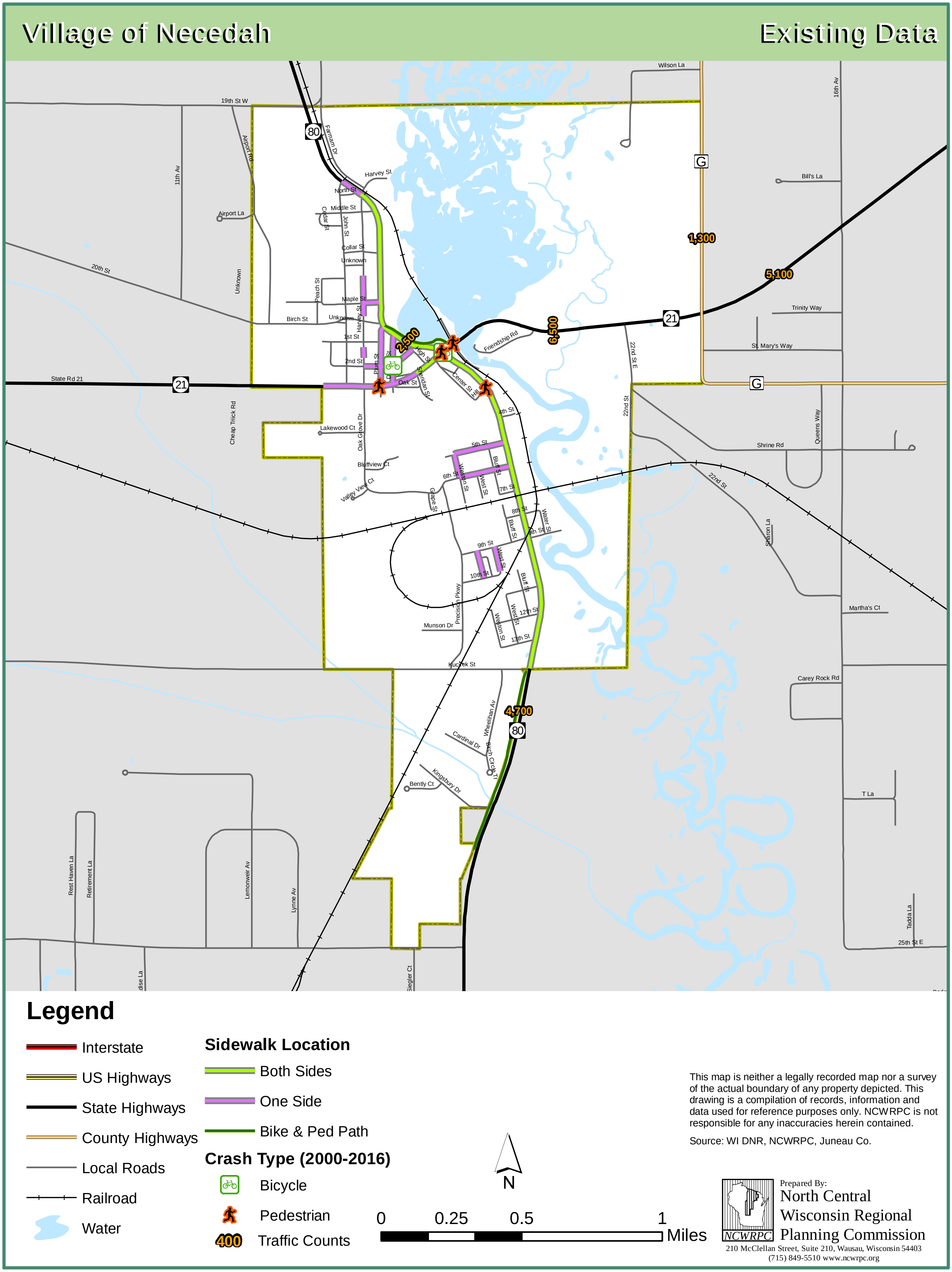
Lyndon Station #1 – Un-mapped Recommendation

The Village of Lyndon Station has listed developing a potential mountain bike facility at the Village Recycling Center as a potential project in the 2015 Village of Lyndon Station Economic Development Plan. Another recommendation in that 2015 Plan is to provide specific pedestrian and bicycle improvements within the downtown.

Recommendation 1:
Seek mountain bike enthusiasts and a mountain bike facility planner to design and construct a suitable mountain bike facility at the Village Recycling Center.

Recommendation 2:

Long term: Create and implement a downtown redevelopment plan that would include wider sidewalks, bike lanes, curb bump-outs, and bicycle parking in front of businesses (without replacing motor vehicle parking spots) when CTH HH and USH 16/STH 12 are re-constructed.



Village of Necedah
Existing Data
Wilson La
19th St W
Farnam Dr
Airport Rd
11th Av
16th Av
Harvey St
North St
Middle St
Airport La
Cedar St
John St
Collar St
Unknown
20th St
Bill's La
1,300
5,100
Peach St
Maple St
Birch St
Harvey St
1st St
2nd St
Plum St
High St
Sheridan St
Oak St
2,500
6,500
Friendship Rd
Trinity Way
St. Mary's Way
22nd St E
State Rd 21
Center St
Hill
4th St
Cheap Trick Rd
Lakewood Ct
Oak Grove Dr
Queens Way
Shrine Rd
5th St
Bluff St
Bluffview Ct
6th St
Weston St
West St
7th St
Valley View Ct
Grape St
22nd St
8th St
Water St
9th St
Sharon La
10th St
Precision Pkwy
12th St
13th St
Munson Dr
Martha's Ct
Kuchek St
Carey Rock Rd
4,700
Wheelihan Av
Cardinal Dr
Birch Circle Tr
Kingsbury Dr
Bently Ct
T La
Rest Haven La
Retirement La
Lemonweir Av
Lynne Av
Tadda La
25th St E
Siegler Ct
Legend
Interstate
US Highways
State Highways
County Highways
Local Roads
Railroad
Water
Sidewalk Location
Both Sides
One Side
Bike & Ped Path
Crash Type (2000-2016)
Bicycle
Pedestrian
400 Traffic Counts
N
0
0.25
0.5
1
Miles
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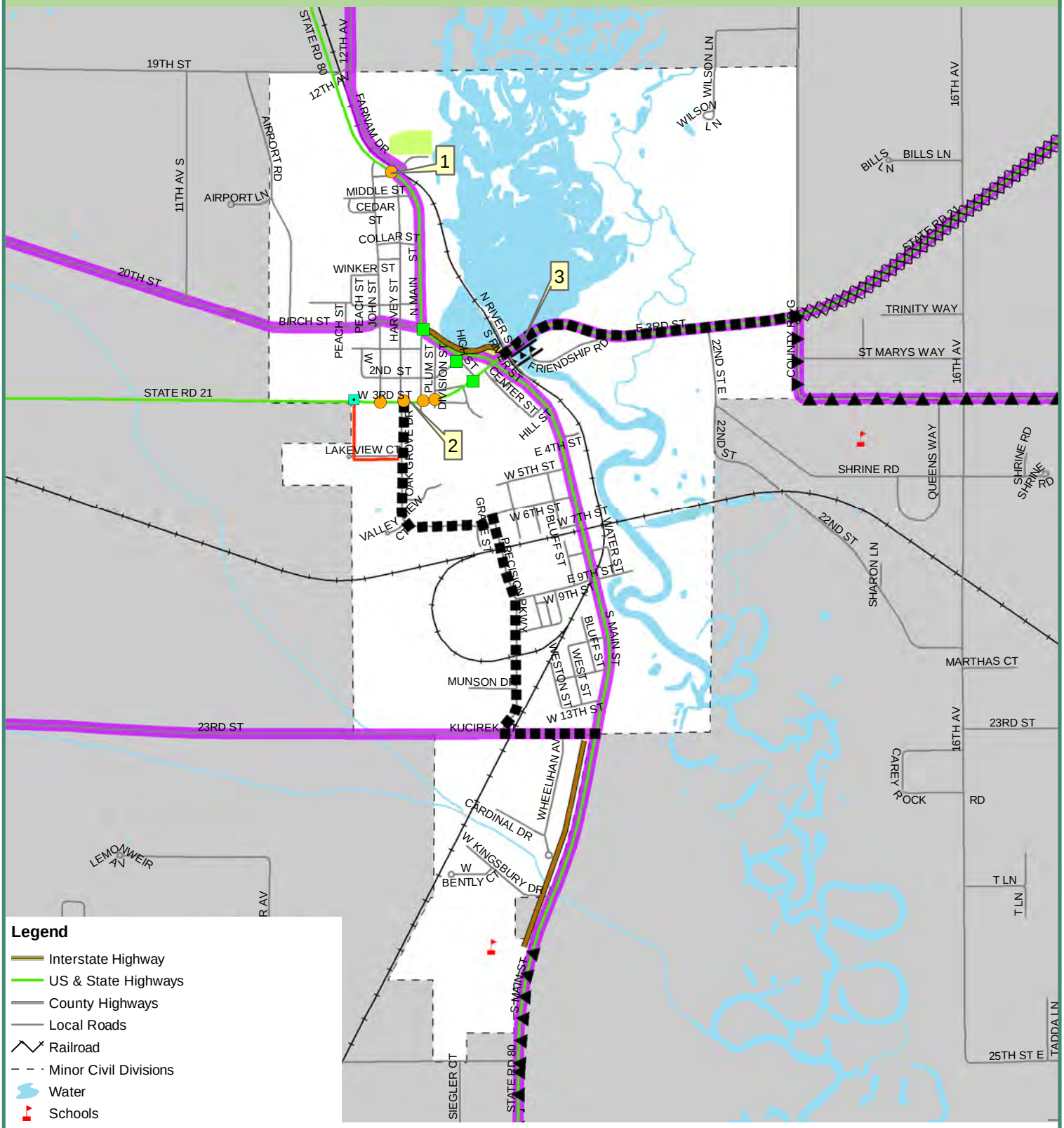
Village of Necedah

Proposed Improvements



Legend

- Interstate Highway
- US & State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Schools
- Proposed Snowmobile and ATV Crossing
- Proposed Off Street Bike Path
- Proposed 8 Foot Paved Shoulders
- Proposed Rumble Strip and Paved Shoulders
- Proposed Bike Routes **(See Map 8 for Proposed Route Notice)**
- Existing Bike/Ped Path
- Proposed Improvements
- Proposed Pedestrian Island
- Proposed Crosswalk

N

0 0.375 0.75 Miles

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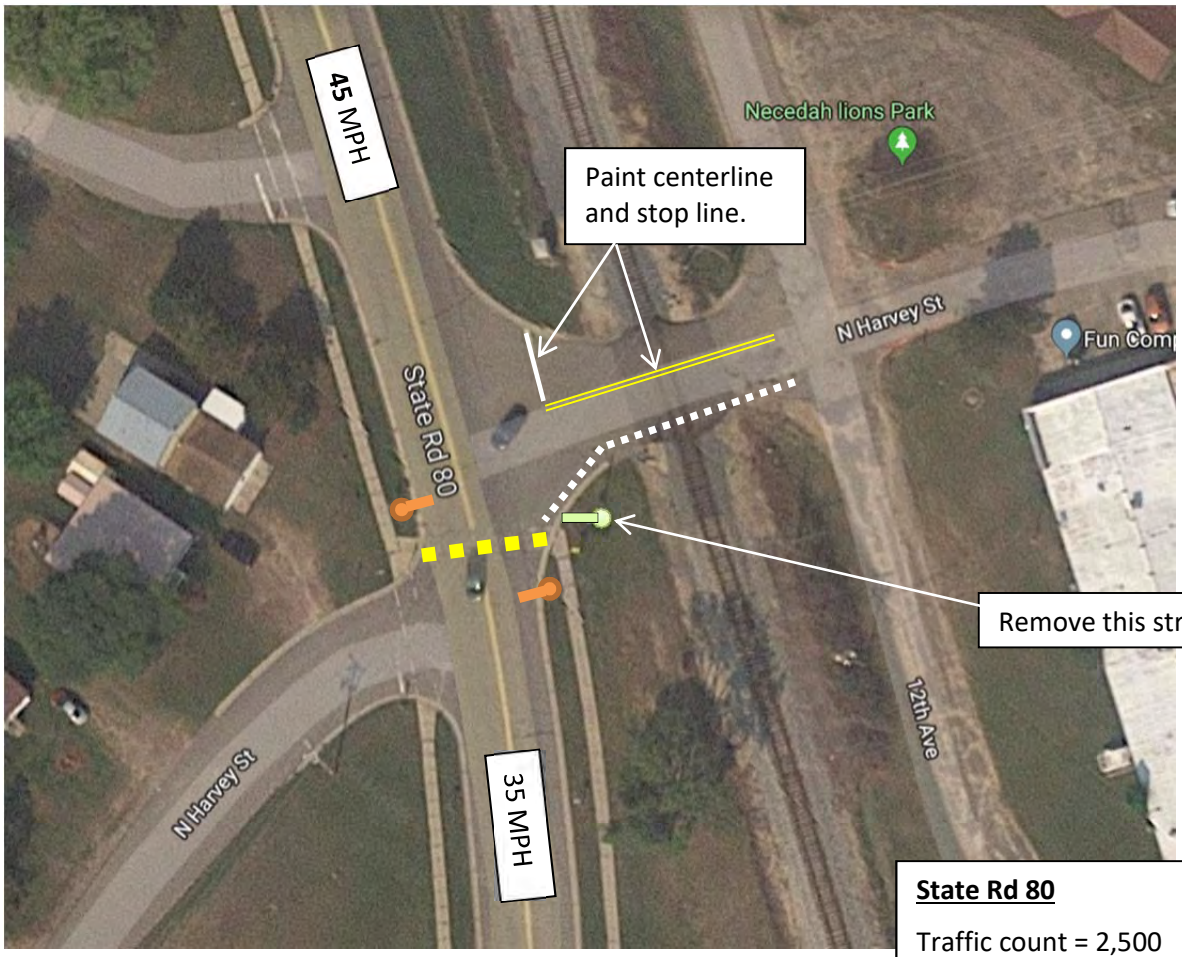
Necedah #1

Recommendation: Improve North Harvey St crosswalk across State Rd 80 by improving lighting, and painting a high visibility crosswalk (e.x. Continental, Zebra, or Ladder styles) across State Rd 80. High pedestrian traffic events will receive more delineation devices from the Village at those times.



= Existing street light.

= Proposed new street light location. This will provide light on each side of a pedestrian to make them more visible.

= Proposed painted crosswalk.

= Proposed painted white line to delineate 5-foot or wider walk area.

Crosswalk Styles

Source: FHWA

Necedah #2

Recommendation: Improve pedestrian access across STH 21 at 3rd Street, John Street, N. Harvey Street, Plum Street, and N. Division Street.

- Reduce curb radii on streets that intersect STH 21. The smallest practical actual curb radii should be chosen based on how the effective curb radius accommodates the design vehicle (seek specific guidance from WisDOT).
- Improve lighting at intersections to make pedestrians more visible.
- Paint high visibility crosswalks (e.x. Continental, Zebra, or Ladder styles) across STH 21.
- Install sidewalk per graphic below.

= Existing street light.

= Proposed new street light location. This will provide light on each side of a pedestrian to make them more visible.

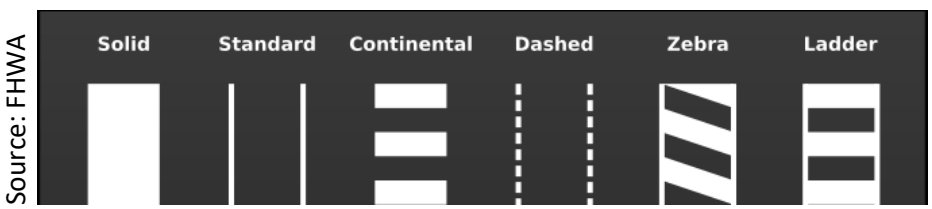
= Existing sidewalk

= Proposed sidewalk

= Proposed painted crosswalk.

= Proposed pedestrian island

Crosswalk Styles

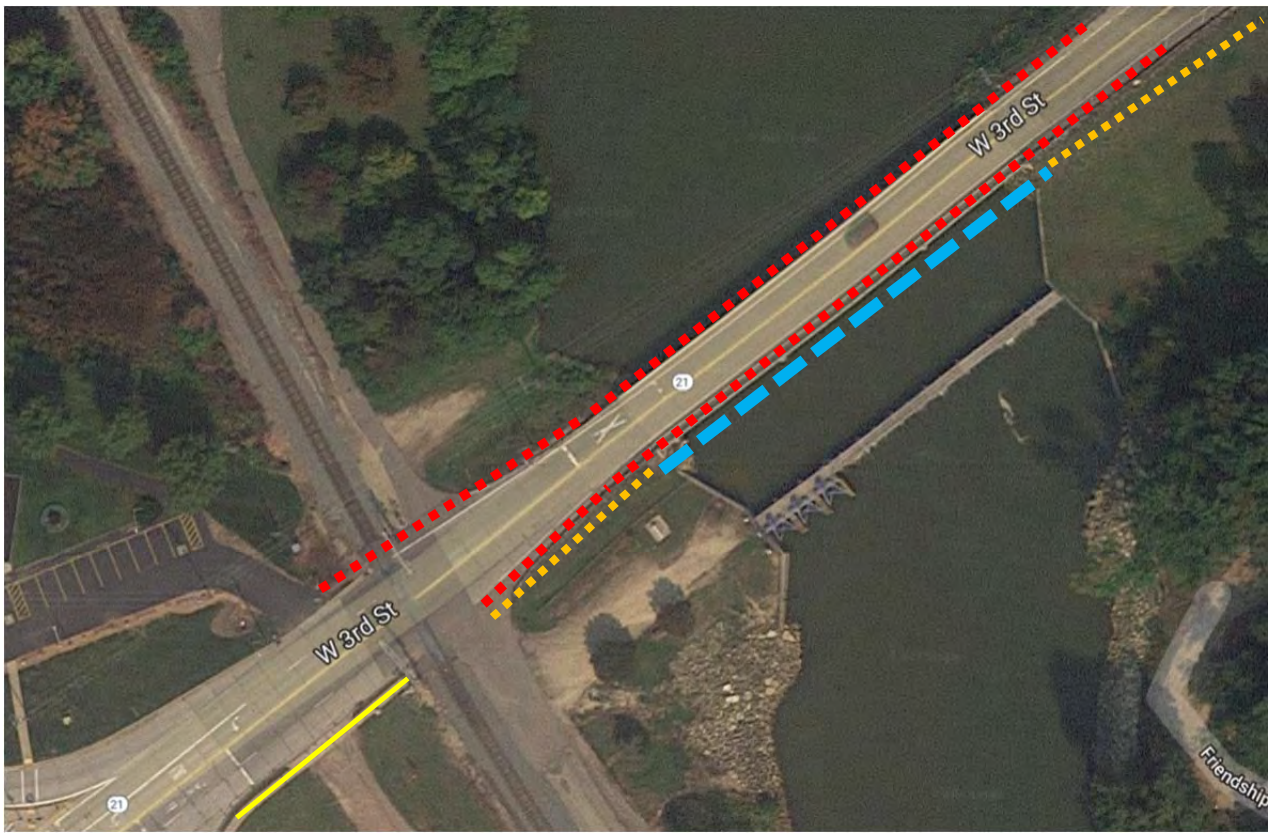


Source: FHWA

Necedah #3

Recommendation: Improve pedestrian access across Yellow River.

- Install path and a bridge per graphic below.



= Potential bridge, or bridge lane separated by a Jersey barrier, for bicyclists, pedestrians, ATVs, UTVs, and snowmobiles.

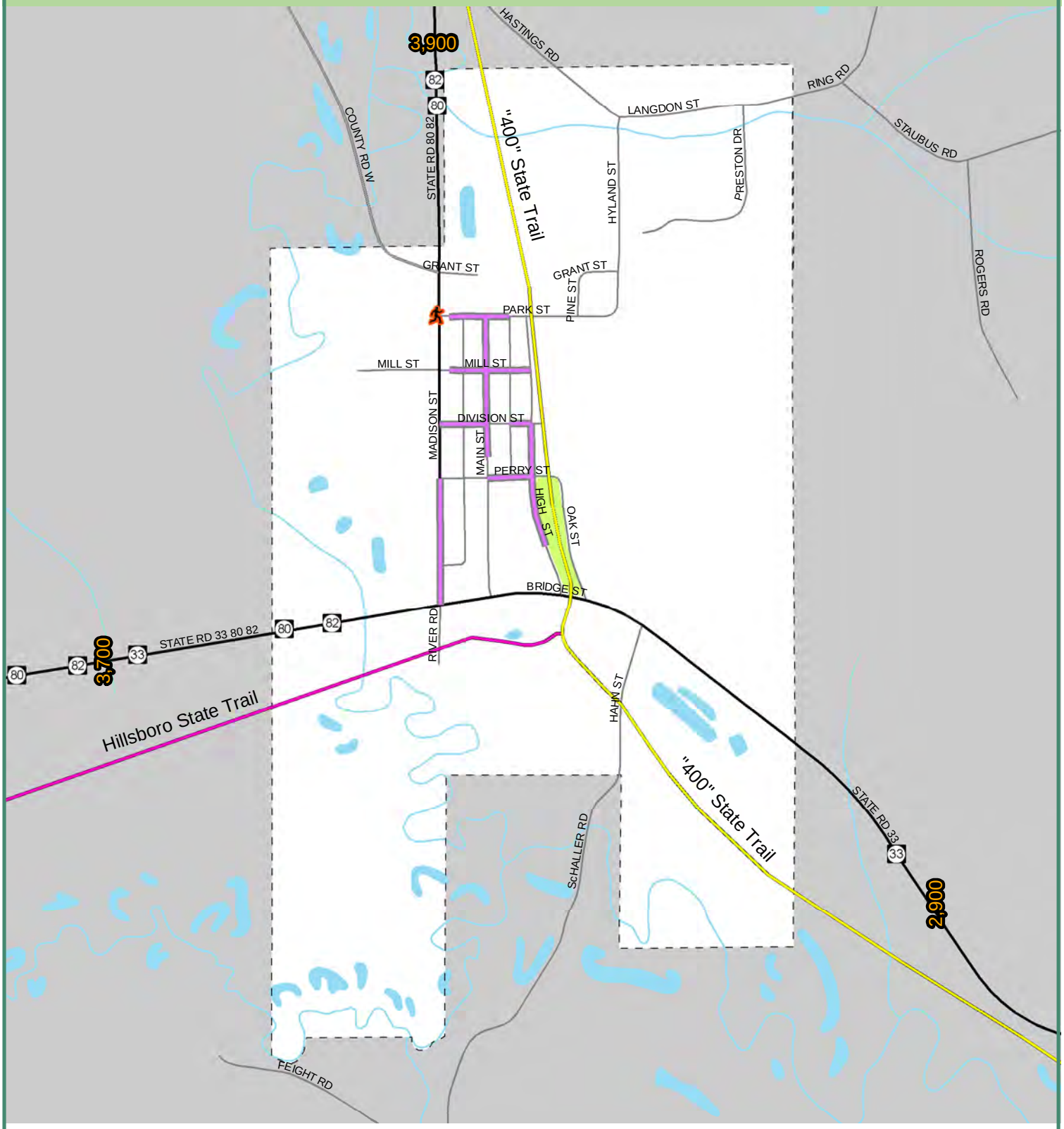
= Existing sidewalk

= Proposed 10-foot wide asphalt path
(for bicyclists, pedestrians, ATVs, UTVs, & snowmobiles.)

= Proposed 6-foot or wider paved shoulder
(for winter pedestrians, and year-round "enthusiastic & confident" bicyclists.)

Village of Union Center

Existing Data



Legend

- Interstate Highway
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Parks
- Hillsboro State Trail
- "400" State Trail

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 3,700 Traffic Count

Sidewalks

- Both Sides
- One Side

N

0 0.15 0.3 Miles

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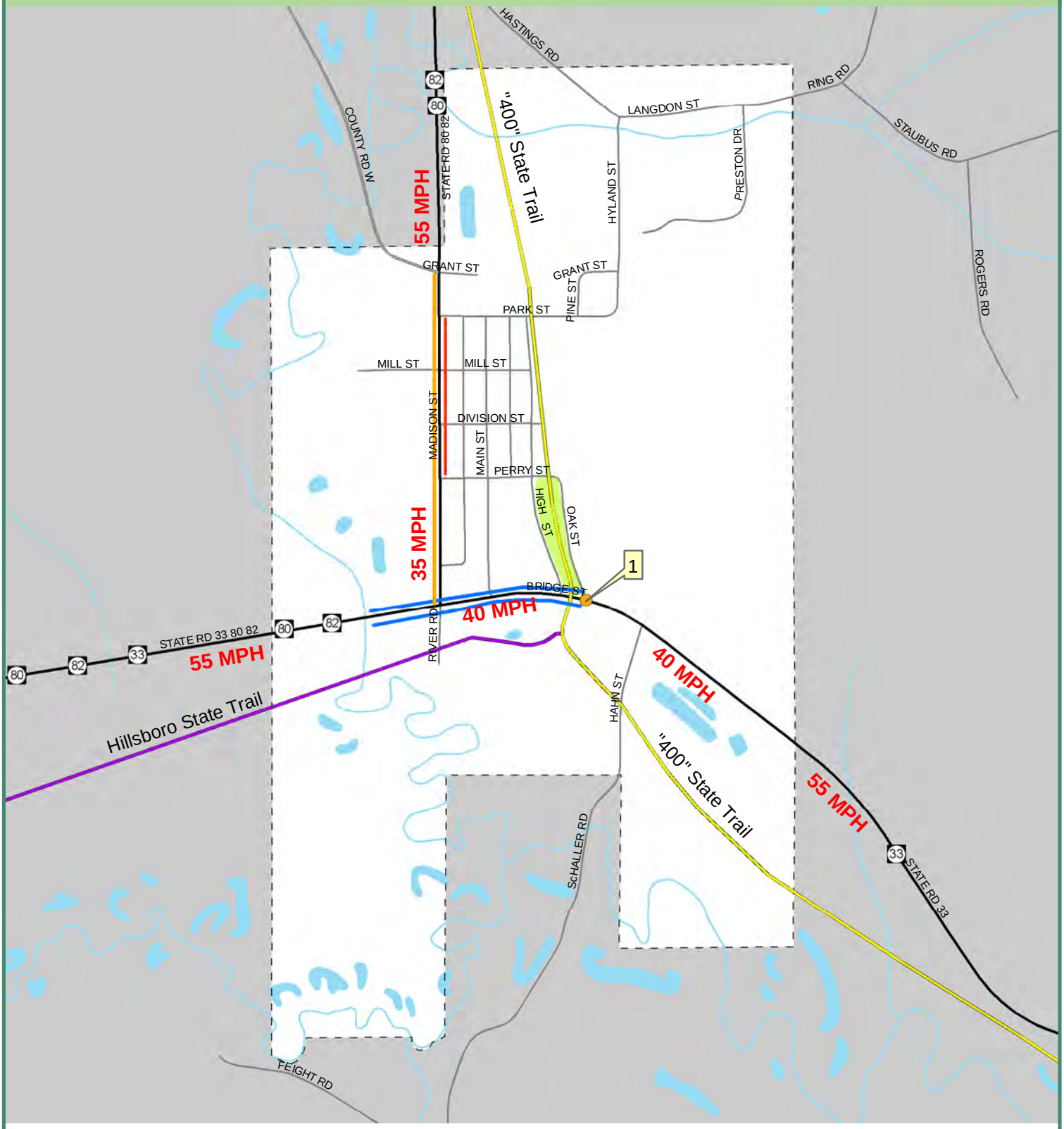
Village of Union Center

Proposed Improvements



Legend

- Interstate Highway
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Parks
- Hillsboro State Trail
- "400" State Trail
- Proposed Sidewalk
- Proposed 11' Lanes
- Proposed 7' Paved Shoulder
- Proposed Improvements

N

0 0.15 0.3 Miles

Source: WI DNR, NCWRPC, Juneau Co.

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Union Center #1

Recommendation: Improve Oak St crosswalk across STH 33 by improving lighting, maintaining a high visibility crosswalk (e.x. Continental, Zebra, or Ladder styles), and replacement of existing pedestrian beacons with microwave pedestrian detector activated rectangular rapid flash beacons (RRFB) at the crosswalk.

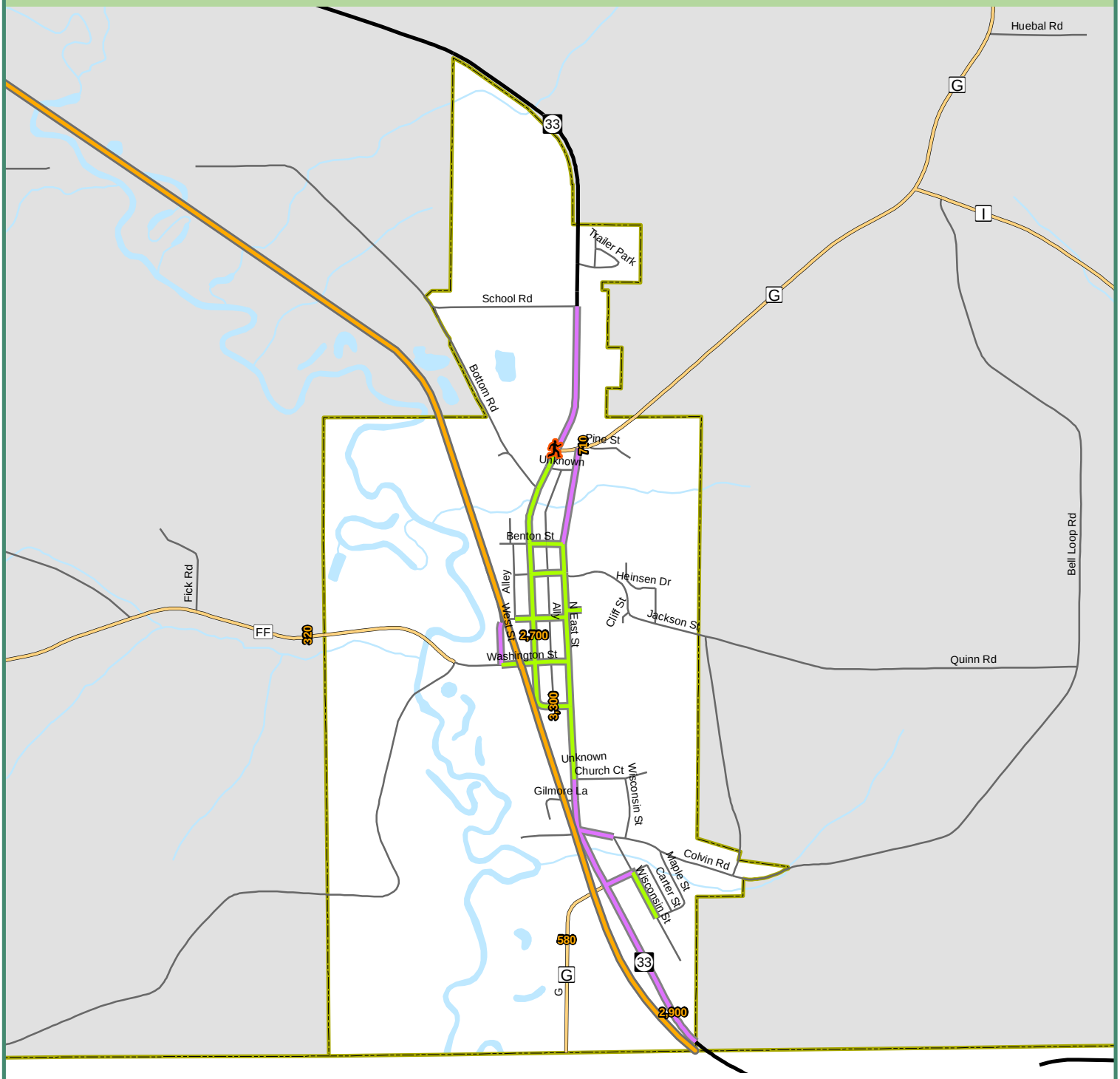
= Existing street light

= Proposed new street light location. This will provide light on each side of a pedestrian to make them more visible.

= Proposed microwave pedestrian activated RRFB at crosswalk and at Hillsboro State Trail crossing.

Village of Wonewoc

Existing Data



Legend

- Interstate
- US Highways
- State Highways
- County Highways
- Local Roads
- Water

Sidewalk Location

- Both Sides
- One Side

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 400 Traffic Counts

Trails

- "400" State Trail

N

0 0.15 0.3 0.6 Miles

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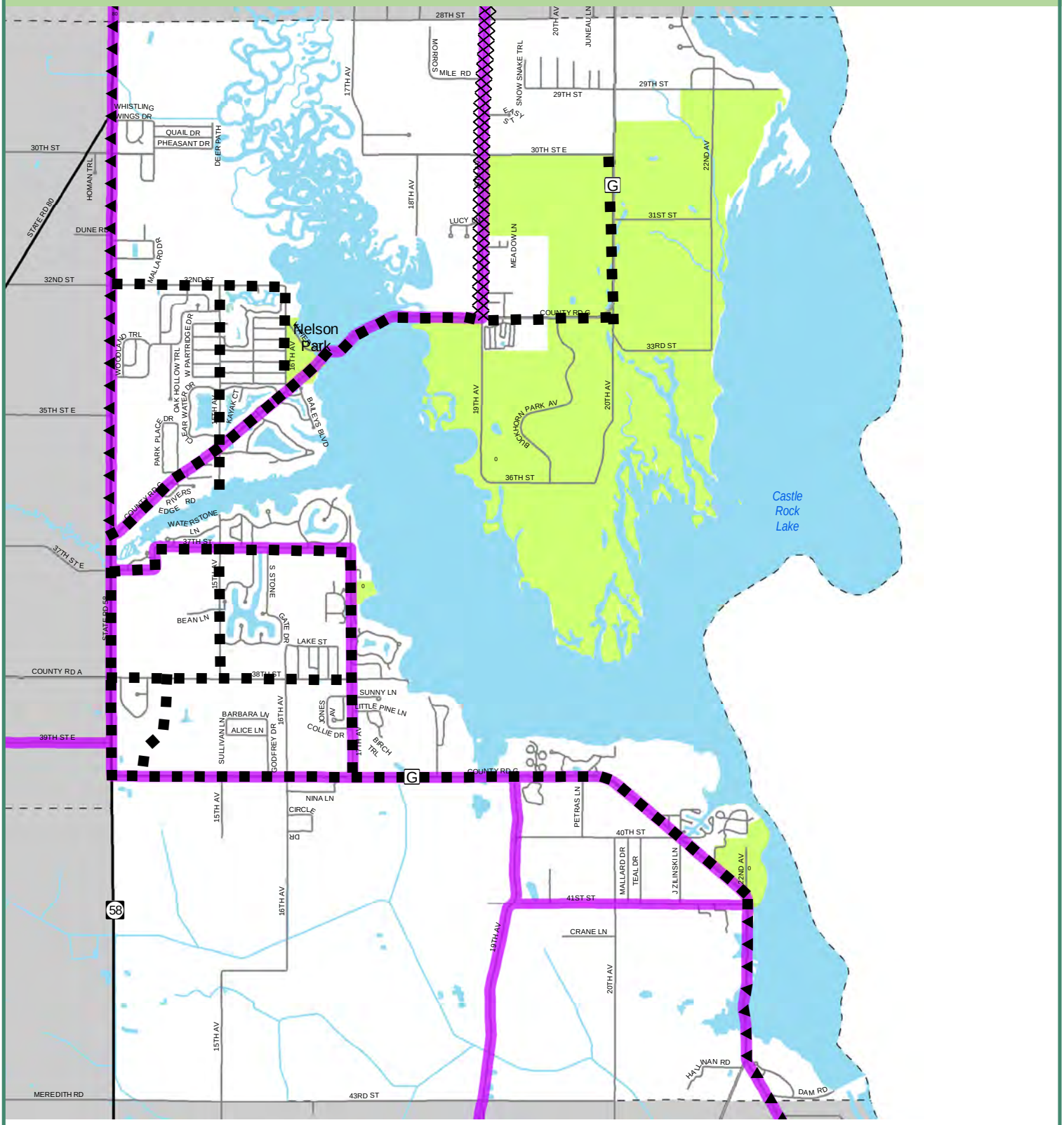
Town of Germantown — Proposed Improvements



Legend

- Interstate Highway
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Parks
- Proposed Chip Seal or Pave
- Proposed Off Street Bike Path
- Proposed 8 Foot Paved Shoulders
- Proposed Rumble Strip and Paved Shoulders
- Proposed Bike Routes

(See Map 8 for Proposed Route Notice)

N

0 0.5 1 Miles

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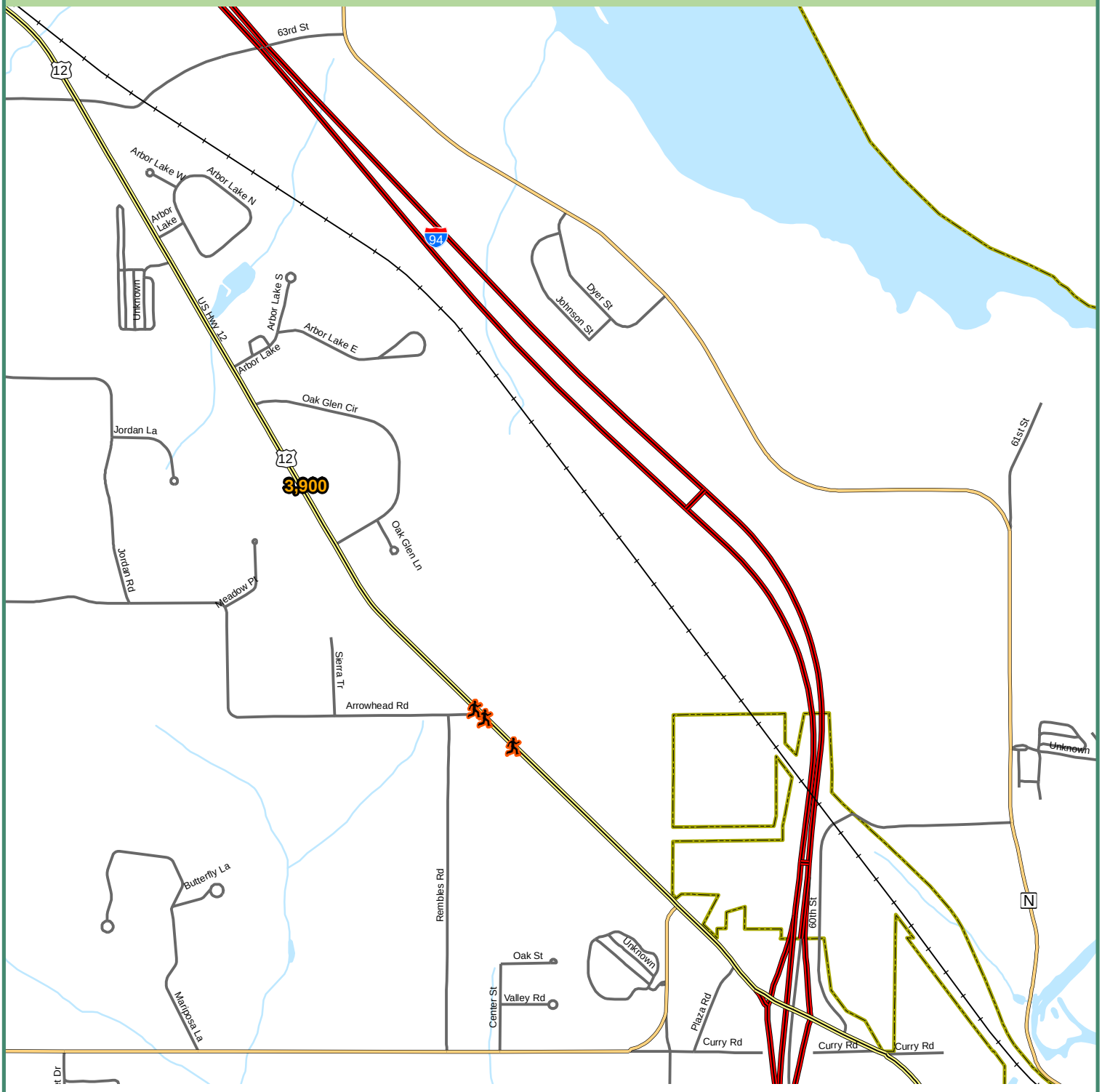
Town of Lyndon Area

Existing Data



Legend

- Interstate
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Water

Crash Type (2000-2016)

- Bicycle
- Pedestrian
- 400 Traffic Counts

N

0 0.175 0.35 0.7 Miles

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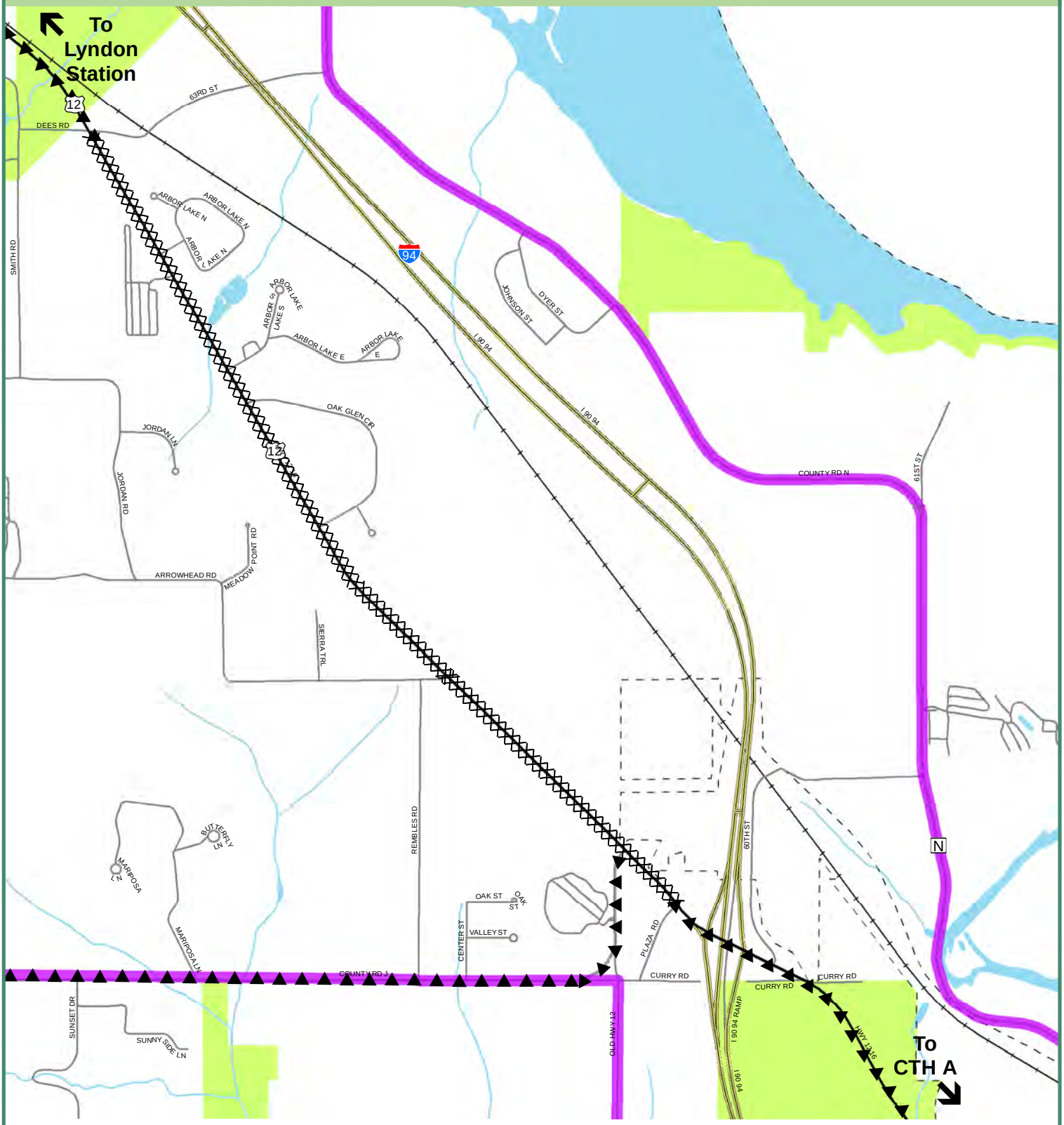
Town of Lyndon Area

Proposed Improvements



Legend

- Interstate Highway
- US Highways
- State Highways
- County Highways
- Local Roads
- Railroad
- Minor Civil Divisions
- Water
- Parks
- Proposed 8 Foot Paved Shoulders
- Proposed Rumble Strip and Paved Shoulders
- Proposed Bike Routes

(See Map 8 for Proposed Route Notice)

N

0 0.2 0.4 Miles

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