



Dunn County Bicycle and Pedestrian Plan



ADOPTED ON date
DUNN COUNTY BOARD OF SUPERVISORS
RESOLUTION # (2018/2019)

Prepared by:

Dunn County Bicycle and Pedestrian Advisory Committee
West Central Wisconsin Regional Planning efforts Commission

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Acknowledgements:

Dunn County Bicycle and Pedestrian Advisory Committee:

Patrick Beilfuss	Don Kuether
Dolores Catlin	Cal Kunkle
Robert Colson, Chair	Lowe Prangy
Randy Eide	John Sworski
Kathryn Gallagher	Addison Vang
Joe Hagaman	Dave Williams
Mike Kneer	John Wesolek
Bill Kryshak	



U.S. Department of Transportation
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Transportation



West Central Wisconsin Regional Planning Commission

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Part 1: Overview of the Plan

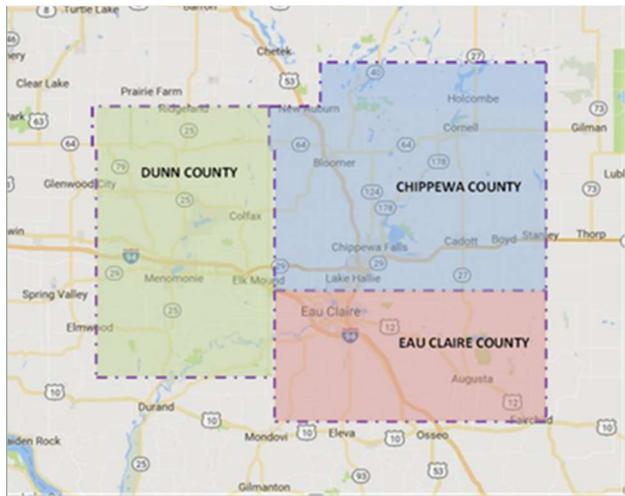
1.1 Plan Background

As more communities are recognizing the benefits of walkability and bike-ability, Dunn County is developing a vision to create a stronger multi-modal surface transportation network that emphasizes walking and bicycling throughout the entire county. In the past, a few municipalities and school districts in the county have focused on pedestrian and bicycle safety and infrastructure within their boundaries. The Dunn County Bicycle and Pedestrian Plan furthers these efforts by formulating a comprehensive guide and strategy to connect current and planned bicycle and pedestrian facilities in and beyond the County as opportunities arise.

The impetus for the Dunn County Bicycle and Pedestrian Plan was the growing popularity of walkable and bike-able communities and bicycle tourism in the west central Wisconsin region from the Twin Cities and surrounding areas. Building on the momentum that was started with the bicycle and pedestrian planning process and infrastructure projects in St. Croix County, Eau Claire County, along with Dunn and Chippewa counties, envisioned a west central Wisconsin bicycle route system that would connect bikeways in the three counties as well as St. Croix County. A Transportation Alternative Program (TAP) planning grant application was submitted in 2015 and the planning process commenced in the fall of 2017 after the grant was awarded.

With the average bicycle tourist cycling 40 to 60 miles per day, the cities of Menomonie, Eau Claire, and Chippewa Falls are within reach of the Twin Cities area, if suitable facilities exist and wayfinding and marketing strategies are

Figure 1-1: Chippewa, Dunn, and Eau Claire Counties Map



employed. The opportunity to ride along the scenic rolling hills on safe, low-traffic roads appeals to cyclists from other regions and can boost tourism revenues. A number of small businesses also are likely to benefit in the communities that dot the way, if they can succeed in welcoming bicyclists and accommodating them with amenities such as lockers and bike parking at restaurants and retail establishments, or by offering common bicycle parts in local stores.

Benefits of Active Transportation

Improving bicycle and pedestrian facilities has important benefits far beyond increased tourism. These improvements can benefit every resident living in the region. Bicycle and pedestrian facilities increase livability in communities by advancing safety, improving the environment, furthering community resiliency, decreasing household expenditures, enriching health, advancing economic development, and increasing real estate property values. It was found that every dollar invested in walking and bicycling programs and infrastructure is estimated to provide up to \$11.80 in return benefits, such as reduced road maintenance or healthcare costs (Marino, 2017). Even those who do not consider themselves bicyclists or pedestrians can benefit from improvements through externalities.

Safety: Communities that are not walk or bike friendly have fewer safe mobility options, especially for vulnerable and disadvantaged populations, such as children and the elderly. Increasing pedestrian and bicycle infrastructure-such as with specialized crosswalks, bike lanes, sidewalks, trails, or traffic calming techniques- alerts drivers to the presence of bicyclists and pedestrians and increases the safety of vulnerable road users. There are also more “eyes on the street” in walkable and bike-able neighborhoods and the increased presence reduces crime and increases safety.

Environment: Walkable and bike-able communities foster fewer car trips, which minimizes air and noise pollution. With fewer motor vehicles on the roads, more roadway and parking space can be used for green space, which improves stormwater management and wildlife habitat.

Economic: Injecting walkability and bike-ability elements into a struggling downtown can help resuscitate the district and produce economic vibrancy as there is more appeal in the area for residents and tourists. This is true even if shoppers choose to drive to the downtown and then continue to stores and restaurants by foot. Research shows that pedestrians spend approximately 65 percent more than drivers.

Household Finances: After a house, vehicle purchases are usually the second most expensive purchase that a household makes. The average household spent \$ 8,469 in 2017 to own and operate a car (AAA, 2017). This expense can be lowered in areas that are designed to reduce the number of trips made by car and increase trips on foot or bicycle.

Increased Health: Simply designing for the comfort of pedestrians and bicyclists is a practical way to encourage people to be more physically active in their daily lives—essential to addressing obesity, diabetes, and heart disease and improving the general physical and mental health of our residents.

Community Resiliency: As people leave their cars to walk or bike, there are more chances for social interaction and to build social capital and resiliency. Additionally, walking or bicycling through a neighborhood helps residents and visitors understand what is unique about their community and develop a “sense of place” or community identity.

Real Estate Taxes: WalkScore, a program which measures the walkability of each address across the county, has shown that a one point increase in walkability for a home correlates to a \$500 to \$3,000 increase in value (Charron, 2017). In addition to making a community more appealing, walkability and trails can result in increased tax revenues.

Purpose

In recent years, there have been numerous bicycle and pedestrian planning efforts at the state and local levels, including the identification of potential Wisconsin routes for the United States Bicycle Route System, established in 2015. The City of Menomonie has completed a number of infrastructure projects, including trails and bicycle and pedestrian bridges. The villages of Boyceville, Colfax, and Elk Mound have been discussing plans to improve pedestrian and bicycle conditions. Some school districts have also created Safe Routes to School plans. While Dunn County has not previously adopted any bicycle and pedestrian plans, consideration for bicyclists and pedestrian design and infrastructure have been expressed in other documents such as the county comprehensive plan and outdoor recreation plan.

The purpose of the Dunn County Bicycle and Pedestrian Plan is to develop a vision to create a stronger multi-modal surface transportation network throughout the entire County; one that focuses on bicycling and walkability, linkages, safety, health, economic opportunities, and breaking down barriers to walking and

biking. The Chippewa, Dunn, and Eau Claire county plans interlink on and off-road systems between the three counties as well as St. Croix County, with the goal of connecting communities and attractions across the region. As such, the Dunn County Bicycle and Pedestrian Plan is a planning document that serves as a guide for enhancing pedestrian and bicycle infrastructure across the county and beyond its borders as opportunities arise. It is a coordinated effort to ensure regional connectivity and encourage intergovernmental cooperation.

1.2 Planning Approach

This planning effort was funded through a 2016 Transportation Alternative Program grant from the Wisconsin Department of Transportation. The grant administration and planning work was led by the West Central Wisconsin Regional Planning Commission (WCWRPC) with input from staff and citizens from each county. Each of the three counties formed an advisory committee and the project kicked off in October of 2017 with a joint meeting of the three county advisory committees.



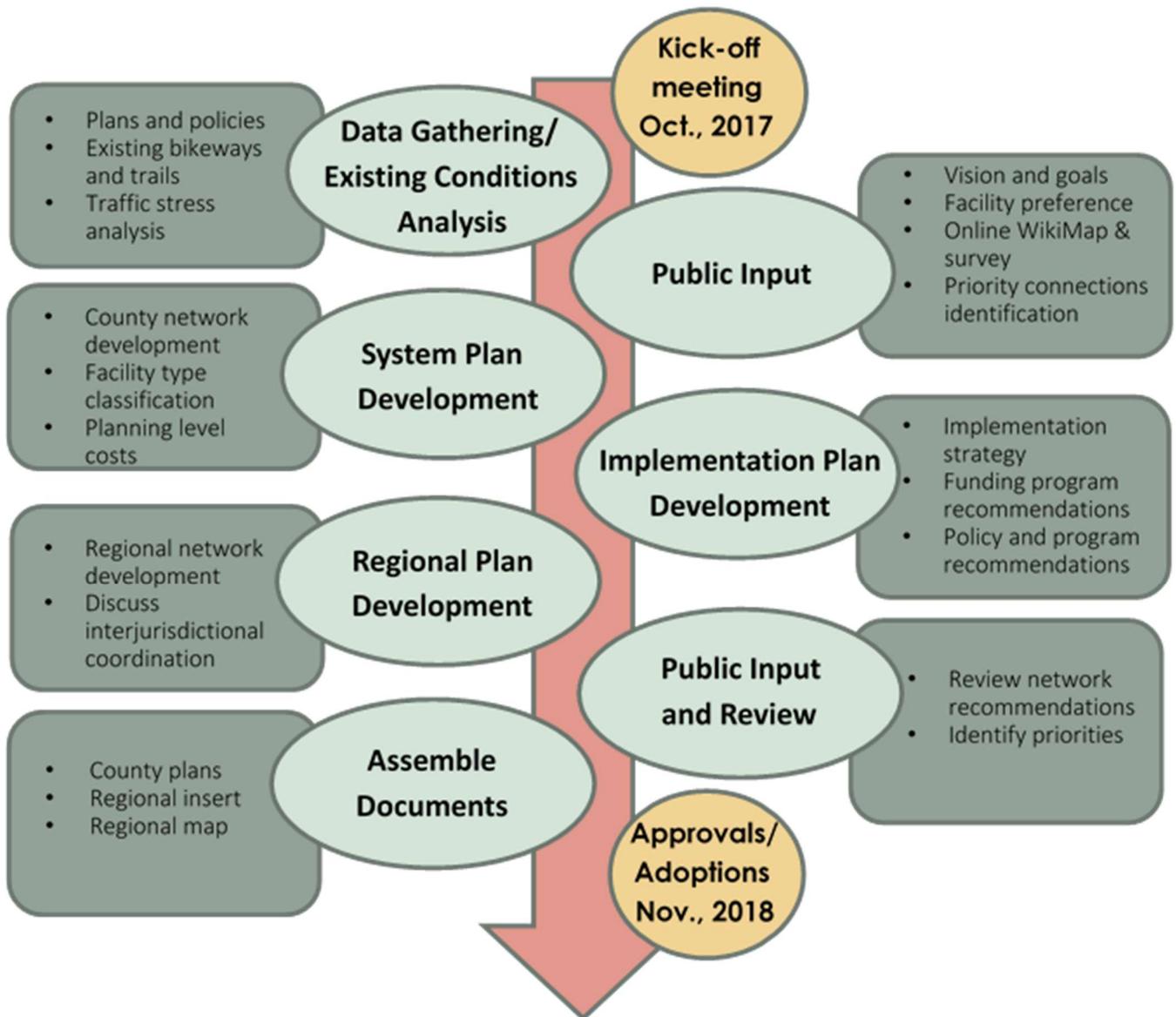
Some members of the Dunn County advisory committee discuss their goals for the plan.

The three-county bicycle and pedestrian advisory committees met separately three times throughout 2018 and had a joint meeting in October of 2018. The Dunn County advisory committee, overseen by the County planning staff, developed the plan goals and objects and provided valuable input for the development of the County bicycle route system plan, policy and program. These meetings were open to the public and information about the project was available on the project website. See Figure 1-2 for details on the planning process.

Public Engagement and Participation

The public had additional opportunities to participate through surveys, an online mapping activity, and two open houses. The two open houses near the beginning and end of the planning process were held in the City of Menomonie. The results of these activities are outlined in Part 2.

Figure 1-2: Plan Process



1.3 Vision, Goals, and Objectives for the Plan

At the beginning of the planning process, the county advisory committee began crafting a vision and a set of goals and objectives for the plan, with the purpose of shaping appropriate recommendations. The public was given an opportunity to review the vision and goals through a public information meeting as well as through the project website.

GOAL 1: Increase safety and comfort for all road users.

OBJECTIVE A: Work with local governments, schools, advocacy and enthusiasts groups to create an educational campaign for school children and adults to increase awareness and understanding of traffic laws regarding pedestrians and bicyclists.

OBJECTIVE B: Increase enforcement of existing traffic laws.

OBJECTIVE C: Improve traffic infrastructure with appropriate treatments that decrease the risks to vulnerable road users.

GOALS 2: Promote existing pedestrian and bicycle infrastructure and facilities to Dunn County residents and visitors.

OBJECTIVE A: Support county-wide broadband initiatives to provide better access for residents and businesses to pedestrian and bicycle information, as well as to assist pedestrians and bicyclists with navigation.

OBJECTIVE B: Create an online platform for government, pedestrian and bicycle groups, residents, and visitors to share information, including maps, events, meetings, conditions, concerns, and local amenities(including accommodations, repair shops and stations, bathrooms, and drinking fountains).

OBJECTIVE C: Increase “wayfinding” efforts, including expanded access to bicycle and pedestrian maps and the installation of wayfinding signage on local routes.

GOAL 3: Build support for implementation among local governments, school districts, businesses, and clubs for pedestrian and bicycle infrastructure and policies.

OBJECTIVE A: Create a registry for walking and bicycle groups in the county.

OBJECTIVE B: Start a county bicycle and pedestrian advisory group.

OBJECTIVE C: Distribute model policies for local government units regarding pedestrians and bicyclists.

GOAL 4: Double the number of people walking or bicycling to work in Dunn County.

OBJECTIVE A: Research the feasibility of local “park and walk lots” to increase physical activity for adults who live too far to walk or bike to work.

OBJECTIVE B: Create a “Walking School Bus” program to increase the number of children walking to school through decreased parental concerns about safety.

OBJECTIVE C: Improve local bicycle and pedestrian data, including trail counts and the number of children walking to school.

GOAL 5: Increase connectivity for bicycling and pedestrians.

OBJECTIVE A: Increase the length and number of trails in Dunn County.

OBJECTIVE B: Increase the length and number of on-road facilities in Dunn County.

OBJECTIVE C: Work to close gaps as identified by the county bicycle and pedestrian plan’s gap analysis.

This plan also seeks to further the goals and objectives laid out in the 2010 Dunn County Comprehensive Plan’s transportation element to “promote and support efficient transportation systems” by “integrat[ing] pedestrians and bicycles into the county road system as much as possible.”

Dunn County’s Sustainability Action Plan, adopted in 2008, recognized the importance of sustainability as a primary mode of operation for its daily activities. The county acknowledged its desire to move in a more sustainable direction, where a clean and healthy environment determines the quality of life. The bicycle and pedestrian plan furthers the principals espoused in the Sustainability Action Plan including reducing dependence upon fossil fuel and activities that harm life-sustaining ecosystems.

1.4 Terminology

To avoid confusion and promote consistency, a common set of terms were set early in the planning process to describe different bicycle and pedestrian facilities. The following terms are used throughout this document:

- **General Terms**
 - *Bikeway*: Any type of bicycle facility (including trails), but typically used in reference to bikeways within street or road right-of-way. Includes bike lanes, paved shoulders, signed bike routes, and sidepaths.
 - *Trail*: A term that is often used to distinguish bikeways that are primarily located in independent rights-of-way, separated from motor traffic. May be primarily recreational in nature but also serve a transportation function.
- **Facility Specific Terms**
 - *Path or Shared Use Path*: Often synonymous with the word “trail,” a shared use path is a separated facility, typically in an independent right-of-way such as a greenbelt or abandoned railroad.
 - *Sidepath*: A separated path along a roadway that serves people bicycling and walking. Sometimes referred to as a path, but the term “sidepath” is used to distinguish the context and likelihood that interactions with motor vehicles at driveways and intersections will be more common. May also serve skateboarders, rollerblades, and other non-motorized users as determined by individual municipal ordinances.
 - *Bike Routes*: A signed on-road route that is preferred for bicycling due to access to destinations and low traffic conditions. Does not necessarily have a delineated or exclusive space for bicycling.
 - *Bike Lane*: A striped lane (typically only in urban areas) for the exclusive use of bicyclists.

- *Paved Shoulders:* Paved area at the edges of rural roadways typically separated by striped line. A paved shoulder is suitable for bicyclists if it is at least 4 feet in width, but may be wider in higher traffic volume corridors.

1.5 Key Themes

Understanding Who Bikes and Walks in Dunn County

Because one of the overarching objectives of the plan is to increase ridership, it is important to understand that there is a wide range of abilities and comfort levels for pedestrians and bicyclists. This plan carefully considers those ranges and recommendations are based on expanding abilities and knowledge as well as meeting comfort levels in order to increase ridership.

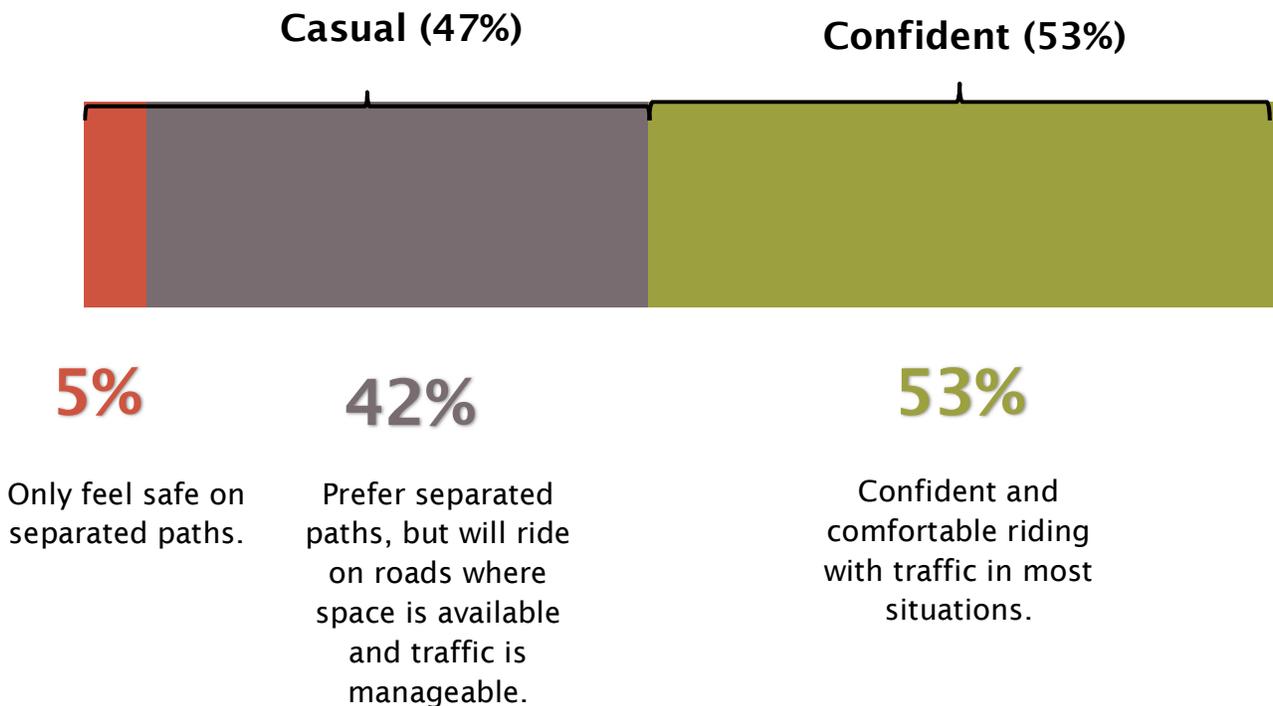
At some point we are all pedestrians, whether that involves walking miles on a nature trail, walking across a parking lot, or using a wheelchair to get around. While the abilities of pedestrians are diverse, their needs are relatively homogeneous as they move at similar speeds. Pedestrians are best served with facilities that are separated from traffic, such as sidewalks, sidepaths, and trails. Safety accommodations are needed in situations where motor vehicle traffic and pedestrians interact, such as at street crossings or drop off/pick up areas.

Bicyclists have a broad range of comfort levels when interacting with motor vehicles, as first identified by analysis by Roger Geller at the Portland Office of Transportation (Geller). He found that a small percentage of bicyclists are very confident and will ride in most traffic situations. The next range of bicyclists prefers separated paths but will navigate roads with slow and/or lower volume traffic, given the appropriate amount of space. The third group of bicyclists only feels safe on separated trails and is uncomfortable interacting with motor vehicle traffic. The last group generally does not ride bicycles and has no plans to start. The middle two groups of bicyclists are sometimes referred to as “casual bicyclists” and they comprise the greatest portion the population.

Figure 1-3 shows a breakdown of the types of bicyclists who attended the Dunn County Bicycle and Pedestrian Plan open house event. This small sample is not representative of the entire county but illustrates the types of bicyclists who provided input for the plan. Notice that no open house participants considered themselves to be non-riders.

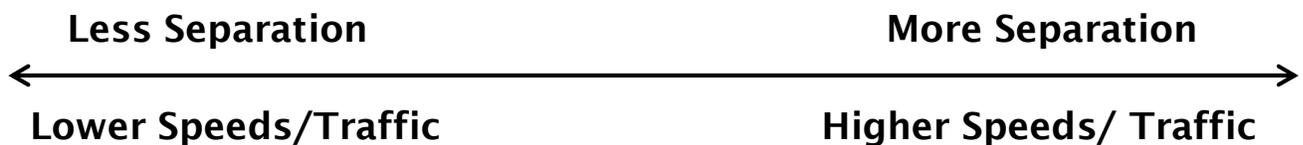
Most of the bicycling public is concerned about interacting with motor vehicles. As such, research demonstrates that casual bicyclists are not riding frequently, especially on roads that often have little separation from motor traffic (Dill & McNeil, 2016). This suggests that separation from motor traffic is the key to increasing the frequency of bicycle trips.

Figure 1-3: Dunn County Bicyclist Comfort Scale



Different levels of separation are appropriate at different levels of traffic stress, as well as visibility which becomes a larger factor on the rural roads in Dunn County. At lower speeds and traffic counts, such as residential roads and many town roads, no separation may be necessary for the majority of riders to be comfortable riding the road. As the speeds, traffic counts, and lanes increase facilities such as designated bike lanes, separated/barricaded bike lanes, and finally trails are appropriate, as Figure 1-4 below illustrates.

Figure 1-4: Bicycle Stress Scale



Bicycle Route Network Plan

A countywide bicycle route network plan is the centerpiece of the Dunn County Bicycle and Pedestrian Plan. The network will be a system of on-road bicycle routes and pedestrian and bicycle trails. The network plan focuses on making connections between communities across the county as well increasing bicyclist safety and increasing bicycle ridership by meeting the comfort levels of those riders who prefer separated paths but will ride on roads where space is available and traffic is manageable. Roads with low traffic volumes and high visibility were selected whenever possible for on-road bicycle routes. When roads that fit these criteria are not available to allow for a reasonably direct connection to a desired destination, infrastructure improvements are recommended.

Several items should be noted about the bicycle route network plan:

- 1.) The bicycle route network plan map, Map 1-1, is a series of signage and infrastructure improvement recommendations. *Currently some of the on-road routes cannot be considered safe for even experienced riders without the recommended modifications.* As bicycle route improvements are likely to be completed with road construction projects, completion of the network plan will likely take many years. Therefore, the map is ***not*** meant to be marketed as ready for the public as a rider guide and doing

so would likely create confusion at the very least. It is a plan for the improvements needed to create a final comprehensive network.

Roughly 42 percent of the routes only need bicycle route signage and/or wayfinding; many could be signed within a short timeframe. These routes are not all connected, but the plan anticipates additional improvements to segments to provide connectivity.

The County could create an online map that shows the bicycle routes that have been signed (and do not need other improvements) for public distribution, if desired. As infrastructure improvements are completed, as recommended by the bicycle route network plan, the county could add the segments to hardcopies and online rider guide maps.

- 2.) Due to the distances between connections, challenging topography, and speeds traveled on rural roads, the on-road routes designated in this plan are meant for adult bicycle riders. Furthermore, riders should be aware that during certain times of days, such as during rush hours, traffic could be higher than other times of day. Also, given the agricultural nature of Dunn County, bicyclists should also be aware of farm equipment on the roads, which may occupy the entire motor vehicle travel lane and any existing shoulder.
- 3.) It should also be noted that while a road may not be designated within this plan as a bicycle route, bicycles will still be allowed on any road or street that does not expressly prohibit bicycles as allowed by state law.
- 4.) As this is a countywide plan, the bicycle route network plan mainly focuses on connecting communities and places of interest for bicyclists, who can travel longer distances in a shorter amount of time when compared to pedestrians. Pedestrian routes are usually more prominent in neighborhood or community bicycle and pedestrian plans which can identify amenities within the distance that the average pedestrian would be willing to walk. Nonetheless, many of the on-road routes identified in the bicycle route network plan are routes on which a pedestrian would likely feel comfortable due to low traffic or wide paved shoulders. Recommended trails in the plan would be suitable to both pedestrians and bicyclists. To improve pedestrian conditions in the County a number of programs are recommended in Part 3 of this plan.

Connecting the Entire County

The Bicycle Route Network Plan seeks to connect cities, villages, unincorporated communities, and attractions across the County with bicycle routes beyond the urban areas. Many connections have also been designated to join communities across county lines.

As the City of Menomonie already has a bicycle and pedestrian plan, the Bicycle Routes Network Plan focuses on proposing bicycle routes connecting to existing routes and trails as well as routes and trails proposed by the City and not on creating new routes through the urbanized area. Furthermore, the county routes include connections through the smaller municipalities of Boyceville, Colfax, Downing, Elk Mound, Knapp, Ridgeland, and Wheeler, as well as the unincorporated communities, but internal local networks are not designated. These communities are encouraged to develop local bike facilities and amenities (signage, parking, information kiosks, etc.) to feed and support the recommended regional routes through their community. Design guidelines for these facilities can be found in Part 3.

1.6 Key Recommendations and Strategies

Part 2 outlines current conditions and focuses on the development of a bicycle route network plan and route infrastructure recommendations. Part 3 focuses on the implementation strategy and policy and program recommendations. A brief overview is given below.

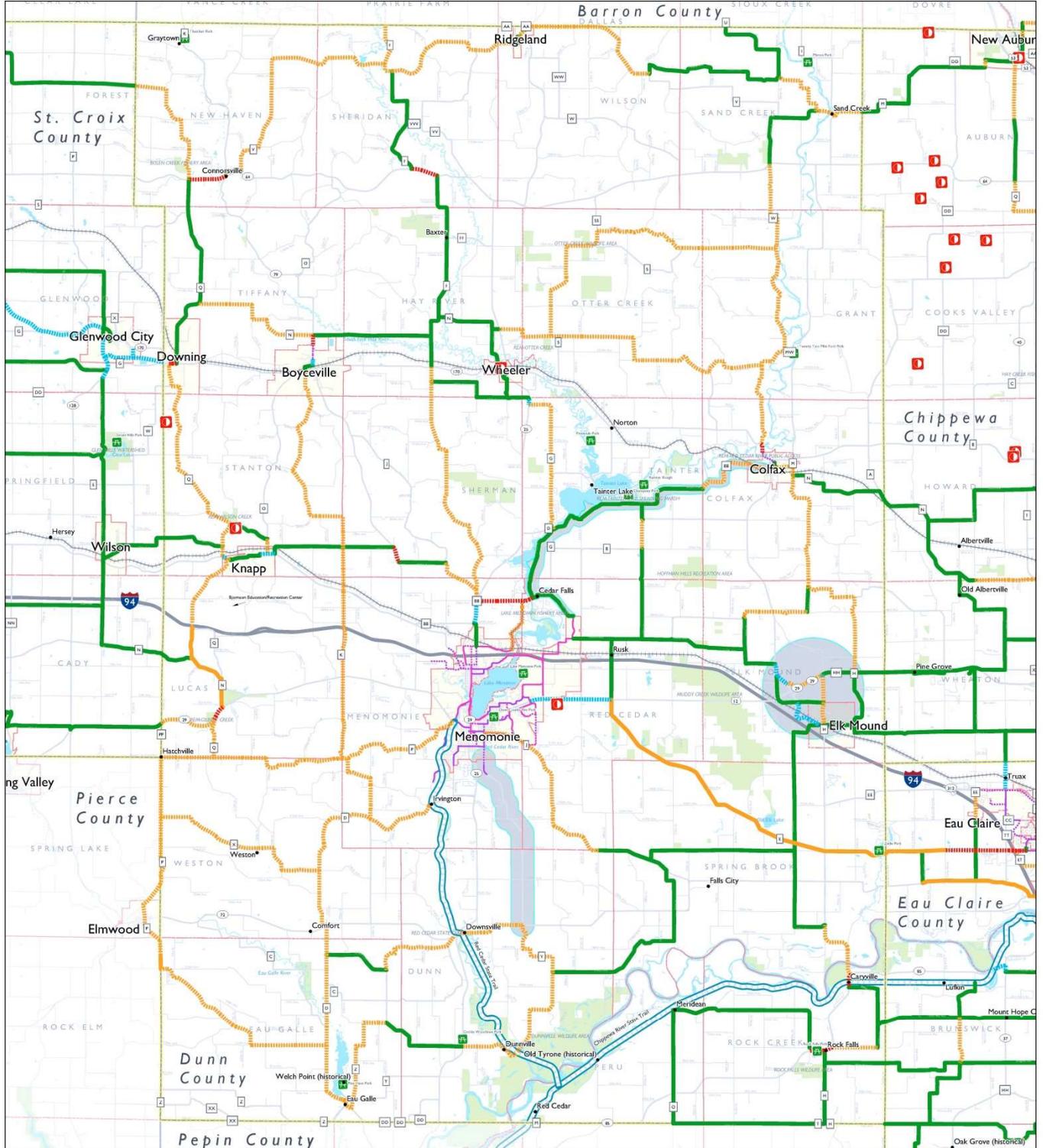
Bicycle Route Network Plan

As illustrated in Map 1-1, the Bicycle Route Network Plan is a vision for a 365-mile network of existing and proposed on-road bikeways and trails that was developed based on stakeholder input and quantitative analysis, defined further in Part 2. The planned network is intended for adult bicycle riders and to increase the ridership of casual bicyclists. Bicycle route and trail recommendations for the network prioritize separation from motor vehicle traffic, such as side paths and wide paved shoulders.

Summary of System Plan Recommendations

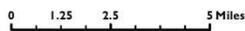
Part 2 also defines the bikeway and trail recommendations for the Bicycle Route Network Plan, as seen in Map 1-1, which are based on a number of factors, including expected user type (casual or confident bicyclists), traffic volumes, sightlines and speeds, and physical constraints, such as available widths and ditches. The Bicycle Route Network Plan recommends approximately 211 miles of new bikeways and trails in addition to minor enhancements (signs and occasional spot improvements).

Map 1-1: Dunn County Bicycle Route Network Plan with Recommended Improvements



REGIONAL BICYCLE & PEDESTRIAN PLAN

DUNN COUNTY, WI



Data Sources: U.S. Census, Wisconsin Department of Administration, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, WCWRCPC
Last Update: November, 2018



- County Park
- Sand mines and processing plants
- DNR Managed Properties
- Area of Further Study

City of Menomonee Routes/Trails

- Existing Bike Routes
- Proposed Bike Routes
- Existing Municipal Trail
- Proposed Trails in Other Plans
- State Trails

Project Recommendations

- Minor Improvements Needed
- Existing 4 Foot Shoulder
- 4 Foot Shoulder Needed
- Existing 7 Foot Shoulder
- 7 Foot Shoulder Needed
- Existing Off-Road Trail
- Off-Road Trail Needed

Planning, Budgeting, and Right of Way Acquisition

This plan represents the vision for walkability and bike-ability of Dunn County, the towns, municipalities, and advocates who participated in the development of this plan. The proposed bicycle route network is the framework for which the county, towns, and municipalities can plan and budget for future investments, incorporate proposed recommendations into capital improvement plans, and coordinate specific projects into scheduled road projects.

Note that the recommendations proposed by this plan are preliminary planning level investigation and are not implementation level engineering plans. Therefore, the feasibility of recommendations still needs to be confirmed. Additionally, prior to implementation, more study and property owner outreach is needed.

The process from plan to implementation involves many steps and the process can take several years and vary between jurisdictions but will typically follow a jurisdiction's roadway project development. Steps will likely include:

1. Developing a long-range plan that identifies comprehensive bikeway and trail network needs (this plan).
2. Identification of individual projects within the plan (at a minimum, identifying boundaries for each individual project and a time horizon for construction).
3. Budgeting for the project in a multi-year capital improvement plan or otherwise allocating funding for projects (such as by applying for and receiving grant funding).
4. Producing a preliminary engineering assessment to confirm feasibility, refine the alignment, assess basic impacts, and determine right of way needs.
5. Acquire right-of-way, complete engineering construction documents and accept contractor bids.
6. Construction, traffic control, and project completion.

Public involvement and communication is essential for steps 1, 2, 3 and 4, while outreach to individual property owners affect by the project usually occurs as early as step 2, and as late as step 4.

Funding Strategy

Successful implementation of the recommendations in this plan necessitates broad partnerships and continued collaborative conversations on funding strategies. Grant programs, such as the Wisconsin Transportation Alternatives Program (TAP), are seen as one of the prime ways to finance bicycle and pedestrian infrastructure projects and are discussed in Part 3. However, these grant programs are limited and competitive, and also require a local match of funding. In order to finance the recommendations of this plan in a timely manner, county and community funding sources need to be established.

County Funding Strategy

This plan recommends the following steps to be considered by the Dunn County Board, in order to facilitate the implementation of this Plan:

1. It is anticipated that the County Board will support the implementation of the plan by resolution, establish a committee to oversee the implementation of the plan-such as a bicycle and pedestrian advisory committee, and pledge to contribute to its implementation within county jurisdiction by pursuing grants, local contributions or including recommended bicycle facilities in road projects as opportunities arise.
2. The County may choose to assist municipalities with resources to implement and fund “minimal improvements” recommendations. Examples may be providing the local match to a grant or installing bicycle signage along town roads.
3. It is anticipated that the County will fund recommendations for the bicycle route system through the same funding source as the larger roadway projects as opportunities arise. While it is recognized that funding roadways has become more difficult over the past few years, as state aids have declined and prices have soared, building bikeway improvements in coordination with other roadway projects is still the most cost-effective means of implementation.
4. It is anticipated that the Dunn County Board will establish an annual budget line item (separate from the County Road and Bridge funds) for bicycle and pedestrian infrastructure improvements, identifying

projects to be funded each year through an established process and setting an annual budget level.

Municipal Funding Strategy

This plan recommends the following to be considered by the city councils and village and town boards in order to facilitate the implementation of this Plan:

1. It is anticipated that the Dunn County municipalities will support the implementation of the plan, potentially by resolution, and pledge to contribute to its implementation within their municipal jurisdictions by pursuing grants or local contributions as opportunities arise.
2. Municipal officials will consult the plan before deciding on transportation investments.
3. As many of the proposed bikeways are within the jurisdiction of the municipalities, especially the towns,—the vast majority of which only need minor improvements,—it is anticipated that the cities, villages, and towns will be responsible for the implementation and the securing of funds for these bikeways. Appendix D has mileage of proposed bikeways and planning level cost estimates of each project in each town or municipality.

In addition to traditional funding sources, Part 3 provides possible funding options available to the communities.

Policy Recommendations and Model Policies

This plan approaches walkability and bike-ability in a comprehensive manner. Local policies, programs, and enforcement regarding and encouraging walking and bicycling are essential to the success of this plan and increased usage of proposed infrastructure improvements. The recommendations for policies and programs are further outlined in Part 3 of the plan.

The following recommendations are based on the goals and intended outcomes articulated by the advisory committee and the public during the extensive 16-month process.

Coordination and Communications

- Training and Continuing Education for Agency Staff
- Increased Public Outreach
- Bicycle Friendly and Walk Friendly Community Status

Education and Awareness

- Media and Public Service Announcements
- Safety Training and Education
- Defensive Driving, Biking, and Walking Curriculum
- Bike to Work Week
- Mailed Education Materials

Child Encouragement and Safety

- Safe Routes to School Plans
- On-The-Bike Training for Children and Youth
- Bike and Walk to School Day
- Daily Mile

In addition to providing program recommendations, design guidelines and a wayfinding framework are provided in Part 3.5 and Part 3.6 respectively.

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Part 2: Bicycle Route Network Plan

A number of sources were consulted in the development of Part 2 of the Dunn County Bicycle and Pedestrian Plan, including demographic and crash data sources, previous planning efforts, and public input. This information, along with credible rural biking guidelines, was used to develop the County Bicycle Route Network Plan.

2.1 Dunn County Background and Demographic Profile

Location

Dunn County covers over 863 square miles and is located in west central Wisconsin. The county seat, the City of Menomonie, lies 64 miles east of St. Paul, Minnesota and roughly 30 miles west of Eau Claire, Wisconsin. The county is adjacent to Barron County, Chippewa County, Eau Claire County, Pepin County, Pierce County, Polk County, and Saint Croix County. The county lies entirely within the Lower Chippewa River Basin. The topography in the county in the eastern areas is flat, wide-open fields and rough hilly terrain in the western and northern areas, according to the *Dunn County Outdoor Recreation Plan, 2017*.

Population Change

In 2015, Dunn County had an estimated population of 44,159 people. This was an 11 percent increase from 2000, or 4,300 people. During the same time, the state of Wisconsin grew 7 percent, according to the U.S. Census Bureau.

Population Age

Dunn County's population is younger than the State as a whole, largely due to the significant number of university students at the University of Wisconsin-Stout. The median age is 34.1 years, compared to 39.0 years for the state. While the college-age cohort remains fairly constant, the age composition of the remaining population is changing rapidly, as the population pyramids on the previous page suggests. In 2015, 14 percent of the population was 65 years of age or older. By 2030, this age group is projected to comprise 23 percent of the population. At the same time, the number of working aged adults (ages 25 to 64) is expected to decrease from 46.9 percent of the population to 40.5 percent.

Figure 2-1 Dunn County Population Pyramid, 2000-2015

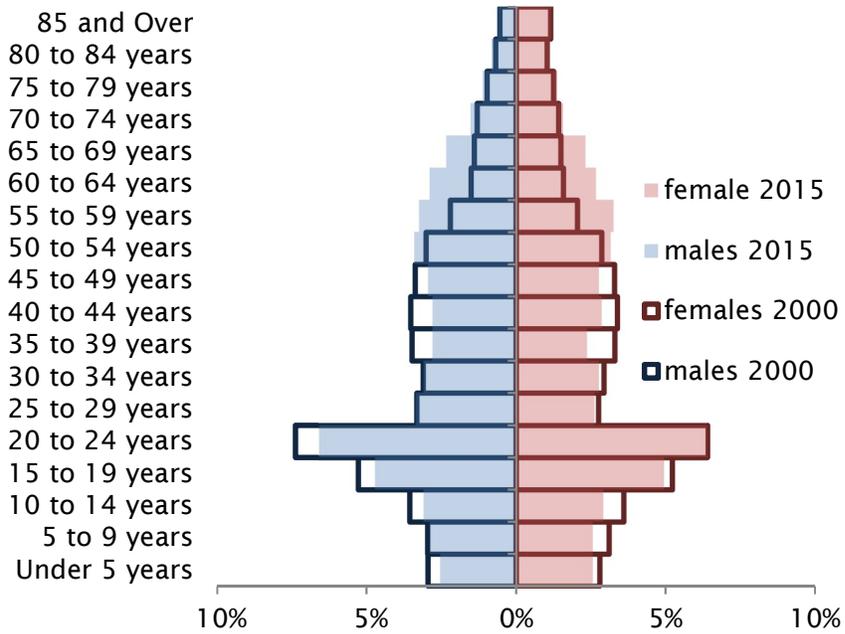
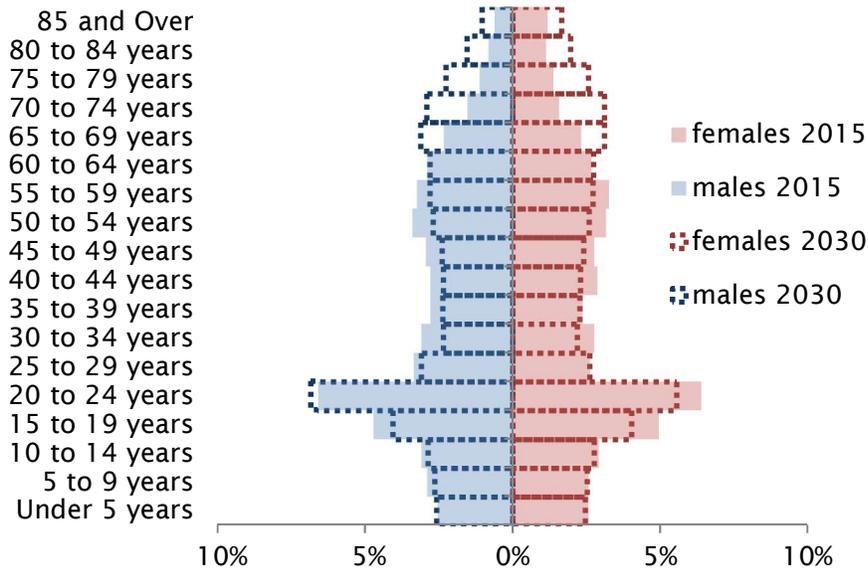


Figure 2-2 Dunn County Population Pyramid, 2015 & 2030 Projection



Source: American Community Survey 2011- 2015 & WI DOA 2013

The population is split evenly in terms of residents living in the rural portion of towns compared to residents living in the incorporated areas. In 2000, 52.19 percent of the county population lived in the unincorporated areas. In 2015, 53.0 percent of the population lived in the towns. Over 25 percent of population lives in the City of Menomonie, the only city in the county.

Education, Income, and Poverty

In 2015, 92.7 percent of county residents had attained a high school degree or higher, which was 1.7 percentage points higher than the state average. This was also a 6.1 percentage point increase for the county since 2000. The percentage of residents with a bachelor's degree or higher also increased from 21.1 percent in 2000 to 25.6 percent in 2015.

The county median household income was \$49,788 in 2015. This was lower than the state median income of \$53,357. When adjusted for inflation, the median household income has decreased 11.4 percent since 2000. Over 15 percent of the residents lived below the federal poverty line, compared to 13.0 percent of all Wisconsinites in 2015.

County Health

In 2016, according to County Health Rankings and Roadmaps, produced by the University of Wisconsin Population Health Institute, 32 percent of the Dunn County adult population was considered obese. This was higher than the national average of 29.6 percent, according to the CDC. Obesity related conditions include heart disease, Type 2 diabetes and certain types of cancer. The estimated annual medical cost of obesity in the U.S. was \$147 billion in 2008 dollars, according to the CDC.

There is no doubt that inactivity is linked to obesity. In Dunn County, according to the UW-Population Health Institute report, 22 percent of adults were physically inactive while only 46 percent lived reasonably close to a location with opportunities for physical activity, such as a trail or fitness center.

Employment

There were 23,794 residents employed in Dunn County in 2015, up 1,400 residents from 2000. While the number of employed individuals has increased statewide, labor force participation rates- which is the percentage of adults, aged 16 years or older, who were employed or job hunting-have been falling across Wisconsin,

including in Dunn County. From 2000 to 2015, there was nearly a five percentage point drop from 70.5 percent to 66.0 percent.

The unemployment rate has fallen to 4.0 percent in Dunn County in 2015 and has likely continued to decrease since that time. Unemployment rates are slightly higher than rates observed in 2000 in Dunn County.

Healthcare and education were the largest industry employers, employing nearly 26 percent of Dunn County residents. This was followed by manufacturing, which employed 16.3 percent of the population, and retail trade which employed 13.2 percent of the population.

Commute Mode Share

Nationwide, walking and bicycling are estimated to account for almost 12 percent of all trips (Federal Highway Administration, 2010). However, at the county level, trip data, as collected by the Census Bureau, is only available for work trips, meaning that trips to school, retail districts, recreational areas, or to visit friends or neighbors are not included.

As the pie chart in Figure 2-3 illustrates, in 2015, the vast majority of workers drove to work alone or carpooled in Dunn County. The average commuting time to work for Dunn County residents was 22.8 minutes. Twenty-two percent of commute times were less than 10 minutes while 30.9 percent of the commute times were less than 10 miles.

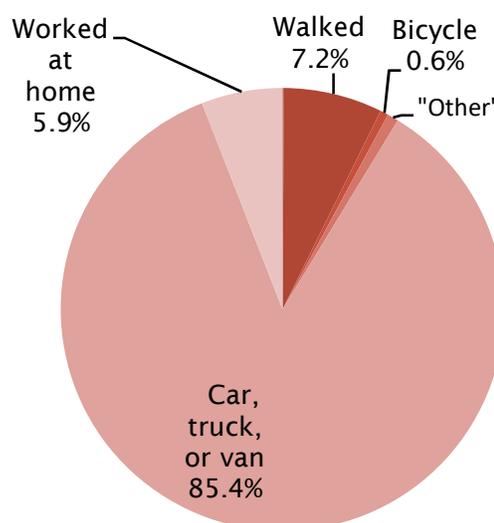
In the United States, nearly 86 percent of workers, aged 16 and older, use private motorized transportation for the longest section of their commutes, including those who carpooled. In Wisconsin, 89.0 percent of

Table 2-1 Top Ten Counties for Workers Walking to Work

County	2015	Rank
Ashland County	7.9%	1
Dunn County	7.2%	2
Grant County	6.7%	3
Portage County	6.0%	4
Dane County	5.6%	5
Barron County	5.5%	6
Pierce County	5.5%	6
Pepin County	5.4%	7
Clark County	5.0%	8
Lafayette County	5.0%	8

Source: American Community Survey, 2011-2015

Figure 2-3 Means of Transportation, Workers 16 + 2015



Source: American Community Survey, 2011-2015

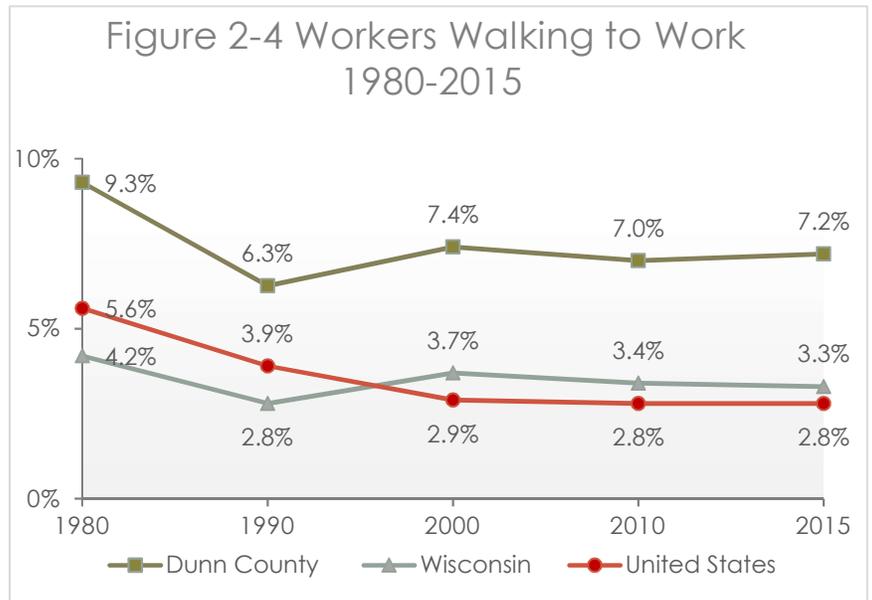
workers use private motorized transportation. The three percentage point difference mainly comes from the lack of public transportation available or utilized by Wisconsin workers. Nationwide, 5.1 percent of the nation’s employees use public transportation while only 1.9 percent of Wisconsin employees use this format of transportation.

In Dunn County 0.1 percent of workers utilized public transportation. At the same time 6 percent worked from home, while 0.6 percent biked. Over seven percent of workers walked to work, meaning that Dunn had the second highest percentage of workers walking to work out of the 72 counties in Wisconsin, as shown by the table on the previous page.

Characteristics of Walkers and Pedestrians

Rates of walking decline from 2010 to 2015 in Chippewa County and Eau Claire Counties, as well as the state and the nation. Eau Claire saw the largest percentage point decline, at 1.5 points as fuel prices decreased significantly in 2014 and were still low in 2015. Nonetheless, Dunn County saw a slight uptick in the percentage of people walking to work.

The overall decline in the rates of walking to work may be due to data collection. Previously data on the means of transportation to work was collected in the month of April. In the American Community Survey, the data is collected at various times during the year, skewing the data in areas with extreme weather variations from year to year. For example, 2010 was the wettest summer ever on record, when the average rainfall was about 7.5 inches



Source: American Community Survey, 2011-2015

above average according to the National Centers for Environmental Information, which may have affected workers decisions on transportation methods.

In 2015, 7.2 percent of Dunn County residents walked to work while only 0.6 percent biked to work. Dunn had the second highest percentage of workers walking to work among 72 Wisconsin counties. Most of the facilities for commuting to work or school by foot or bicycle exist in the incorporated places. Only 16.3 percent of active transportation users lived in the towns. Overall, the City of Menomonie had the most active transportation commuters, with roughly 1,253 commuters walking to work. In fact 17.3 percent of all workers 16 years of age or older walked, biked, or took public transportation within the City. To put that in perspective, in the City of Eau Claire, 4.5 percent of workers used these forms of transportation, while 14.7 percent did so in the City of Milwaukee.

Several “college towns” showed high rates of walking to work, including Ithaca, NY and Athens, OH where about 42.0 percent and 37.0 percent of workers walked to work, respectively (McKenzie, 2014). The City of Eau Claire is home to the University of Wisconsin-Eau Claire as well as the Chippewa Valley Technical College while the University of Wisconsin-Stout is located in the City of Menomonie. Both of these cities have higher than average rates of walking to work when compared to the adults, aged 16 years or older, who were employed or job hunting, but Menomonie’s rate is significantly higher than Eau Claire’s. The worker walking rates between the cities likely differ for two reasons. First, Menomonie is relatively compact compared to Eau Claire so boasts a higher walk score. Second, Menomonie has a higher concentration of post-secondary students than Eau Claire when compared to the rest of the population.

Of workers aged 16 and older, those between the ages of 16 and 19 were more likely than any other age group to walk to work. This is followed, not surprisingly, by the 20 to 24 year age group. While Wisconsin has a higher percentage of young workers who walk compared to the United States, younger workers walking to work is particularly pronounced in Dunn and Eau Claire counties. The median age of a worker in Dunn County was 39.3 years. The median age of workers who walked to work was 21.9 years while the median age of a worker who drove to work alone was 40.3 years. In Wisconsin, the median age of a worker was 42.7 years and the median age of a worker who walked to work was 30.8 which was nearly nine years older than Dunn County.

As Table 2-2 shows, those in the service occupations were most likely to walk compared to any other occupation grouping. This was particularly pronounced in Dunn County where 12.1 percent of employees in service occupations walked to work.

Table 2-2 Percentage of Occupation Walking to Work, 2015			
Occupational Category	Total Employees in Occupation	# of Employees Walking to Work by Occupation	% of Employees Walking to Work by Occupation
Management, business, science, and arts occupations	6,834	454	6.6%
Service occupations	3,925	475	12.1%
Sales and office occupations	4,826	427	8.8%
Natural resources, construction, and maintenance occupations	2,164	76	3.5%
Production, transportation, and material moving occupations	4,231	155	3.7%
Military specific occupations	6	0	0.0%
Total	21,986	1,587	7.2%

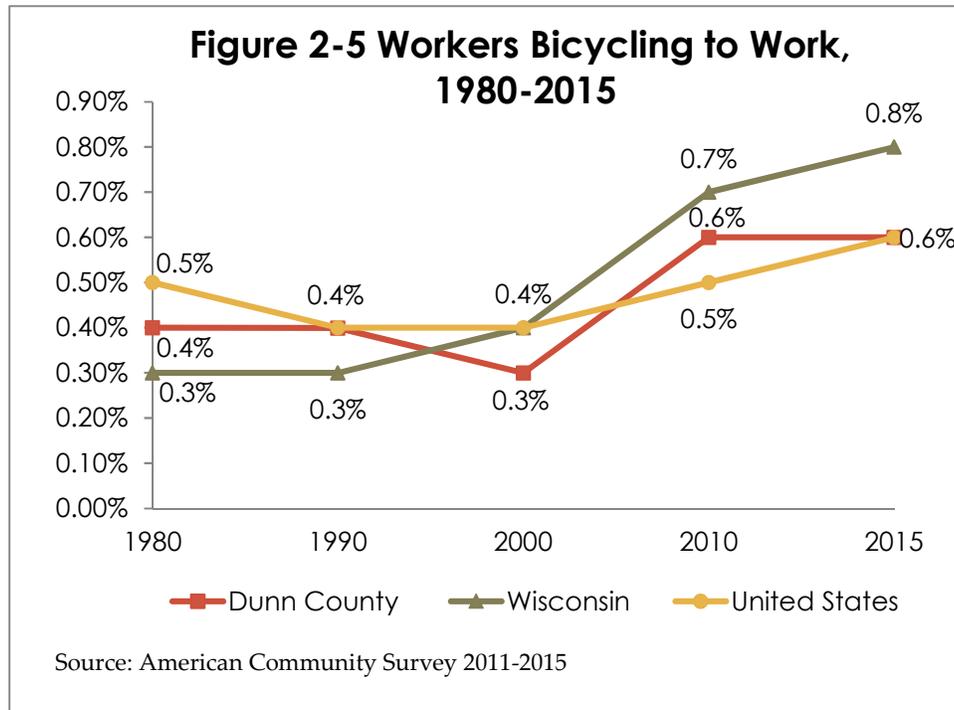
Source: American Community Survey, 2011-2015

Of the walking Dunn County workers, 28.6 percent had 2 vehicles available in their household. Over 30.3 percent had 3 or more vehicles available in their household. A household with two vehicles may have a young worker who does not have priority over use of the family car; likewise, siblings may have to share the third car and may, therefore, be forced to walk on some occasions. There are many other reasons, such as physical cognitive disability, that may prevent a worker from being able to drive. Still, some workers are choosing to walk to work despite having a vehicle readily available for their use. Only 5.4 percent of walking commuters walked because there was no vehicle available in their household.

In Dunn County, 17.4 percent of workers live below 150 percent the Federal Poverty Line (FPL). 9.2 percent of workers living below 150 percent of the FPL walked to work. Of the total number of employees in the county who walked to work in Dunn County, 37.4 percent are below 150 percent of the FPL.

Bicycling to Work

As the figure below shows, across the country the rates of bicycling are increasing and have been since the 1990s. In 2015, .6 percent of workers biked to work in the United States compared to .4 percent in 1990. This represents a fast-growing segment of the population, and a portion of this increase could reasonably be contributed to the efforts of many communities to expand and improve bicycle



facilities. Nonetheless, there are still over four times as many workers who choose to walk to work rather than bike. In Wisconsin, .8 percent of workers chose to bicycle to their place of employment in 2015, up from .3 percent in 1980.

In Dunn County, 0.4 percent of workers rode to work in 1980 while 0.6 percent did in 2015. While Dunn County had a particularly high rate of commuters walking to work, the County averaged the same percentage of bicyclists as the nation and was slightly behind the State with 0.8 percent of employees biking to work.

2.2 Overview of Relevant Plans and Policies

A number of existing local, regional, state, and national plans were reviewed during this planning process. This section overviews many of the relevant plans found, including rural bicycle route planning guides and surrounding counties.

Municipal Conditions and Plans

Municipal comprehensive plans, outdoor recreation plans, Safe Routes to School plans, and bicycle and pedestrian plans were studied for existing and proposed trails and bikeways. Each plan was examined to determine if the following elements were included:

- Trail inventory
- On-Street Bikeway Inventory
- Sidewalk Inventory
- Future Plans for Bikeways
- Future Plan Map

Table 2-3 shows which plans were found to have these elements. Few municipal plans make mention of bicycle and pedestrian facilities beyond the Wisconsin DOT bicycle maps or the Red Cedar Trail. Some the municipalities have only short trails or proposed bicycle trails or routes, with the exception of the City of Menomonie.

City of Menomonie

The City of Menomonie is a Bronze Level Bicycle Friendly community, as is the University of Wisconsin-Stout campus. With more than 16 miles of off-street bicycle and pedestrian trails, Menomonie has the most extensive network of pedestrian and bikeway facilities in the county. This includes the Lake Menomin Loop, a mostly off-road, 8.3 mile bicycle route that includes a pedestrian/bicycle crossing of the Red Cedar River just south of the I-94 east bound lane. The Loggers Loop is a signed 22 mile route which includes both on-road and off-road portions around the city. This loop utilizes the bicycle and pedestrian bridge over I-94 which replaced an old railroad bridge. See map in Appendix A. More information can be found at www.menomonie-wi.gov.

Table 2-3: Community Plans Pertaining to Bicycling and Walking*

Plan Name	Trail Inventory	On-Street Bikeway Inventory	Sidewalk Inventory	Future Plans	Future Plan Map
<i>Towns</i>					
Colfax Comprehensive Plan					
Eau Galle Comprehensive Plan					
Elk Mound Comprehensive Plan					
Grant Comprehensive Plan					
Hay River Comprehensive Plan					
Lucas Comprehensive Plan					
Menomonie Comprehensive Plan					
New Haven Comprehensive Plan					
Otter Creek Comprehensive Plan					
Peru Comprehensive Plan					
Red Cedar Comprehensive Plan					
Rock Creek Comprehensive Plan					
Sand Creek Comprehensive Plan					
Sheridan Comprehensive Plan					
Spring Brook Comprehensive Plan					
Stanton Comprehensive Plan					
Tainter Comprehensive Plan					
Weston Comprehensive Plan					
Wilson Comprehensive Plan					
<i>Villages and Cities</i>					
Boyceville Comprehensive Plan	X		X	X	X
Boyceville Safe Routes to School Plan	X		X	X	X
Colfax Comprehensive Plan	X	X	X	X	X
Knapp Comprehensive Plan					
Menomonie Comprehensive Plan	X	X	X		
Menomonie Bicycle and Pedestrian Route & Trail Plan Map	X	X		X	X
Menomonie Pedestrian Corridor and Safe Routes to School Plan	X		X	X	X
Menomonie Outdoor Recreation Plan	X	X		X	X

*The Comprehensive Plans of the towns of Dunn, Sherman, and Tiffany and the Villages of Downing, Elk Mound, Ridgeland and Wheeler were not found.

Village of Boyceville

The Village of Boyceville has reached the planning stages of bicycle routes and trails. In the 2008 Safe Routes to School Plan and the 2009 Village of Boyceville Comprehensive Plan, a trail was proposed along busy State Highway 79, north of the Tiffany Creek Elementary School to Marlette Road which if extended to County Highway N in the Town of Tiffany would provide a needed direct bicycle route into Boyceville. The Village also proposed an extension of Hedlund Street north to County Highway N which would likely eliminate the need for a trail through the Town of Tiffany-see Picture 2-8. A trail was also proposed along Tiffany Creek. See maps in Appendix B for more detail. The *2017 Dunn County Outdoor Recreation Plan* stated that Boyceville planned to make trail improvements at the Anderson Hill subdivision on the south side of the village from 2018 through 2021.

Village of Colfax

The Village of Colfax has a proposed “bike route/trail” in its 2014 Comprehensive Plan, that parallels the railroad east to west and joins to the existing Dunn County bicycle loops. Another proposed trail follows State Highway 170 and then Eighteenmile Creek. As shown in later sections, this would be an important trail connection for this plan’s bicycle route network to avoid higher traffic counts on the intersections of State Highway 40 and 170. According to the *Dunn County Outdoor Recreation Plan*, the walking path along Eighteenmile Creek is scheduled for 2019, while a walking path from Iverson Park to the school is scheduled for 2019. See Appendix C for more detail.

Village of Elk Mound

The Village of Elk Mound has expressed interest in connecting its parks with trails. This project is scheduled for 2021 in the *2017 Dunn County Outdoor Recreation Plan*.

County Plans

The *2010-2030 Dunn County Comprehensive Plan* inventories the Red Cedar State Trail, the City of Menomonie’s bike system, and a “variety of semipublic trails which accommodate walking, bicycling, and cross-country skiing throughout the county.” The plan’s goals include “integrat[ing] pedestrians and bicycles into the county road system as much as possible” and “research[ing] areas to locate additional Park and Ride lots including bicycles.”

The 2017 *Dunn County Outdoor Recreation Plan* included the *Dunn County Comprehensive Bicycle and Pedestrian Pathways Plan*, 2008 routes and the Lake Menomin Park mountain bike trails. Among the recommendations included for these facilities was to “consider acquiring land adjacent to existing County recreational facilities to ... provide trail connections” and to “consider acquiring land to create linear connections (trails) to existing parks, create a buffer and protect the resource through coordination and cooperation with organizations.” The Dunn County Park’s online map can be found at:

<https://dunnco.maps.arcgis.com/apps/webappviewer/index.html?id=4f1d6a823bd74e76bb7e63acb77163da>

The *Dunn County Comprehensive Bicycle and Pedestrian Pathways Plan* was the County’s first bicycle and pedestrian plan. However, it was not adopted by the Dunn County board. The bicycle route network included routes that were examined during this planning process and included in this plan’s bicycle route network.

In addition to planning efforts in the area, the Menomonie Chamber also hosts a number of bicycle loop maps, on their tourism website, that span the county and range in difficulty. There are eleven total recreational loops, but not all are signed.

Dunn County borders eight other counties: Barron County, Chippewa County, Eau Claire County, Pepin County, Pierce County, Polk County and St. Croix County. Two of the counties, Chippewa and Eau Claire counties, are writing Bicycle and Pedestrian Plans concurrently with Dunn County to create the West Central Wisconsin Regional Bicycle Route Network plan with the assistance of the West Central Wisconsin Regional Planning Commission.

Barron County, Pepin County, Pierce County, and Polk County do not currently have bicycle and pedestrian plans. Their respective comprehensive plans describe some trails within their borders, but do not include any proposed or established bicycle routes beyond those included in the Wisconsin DOT bicycle maps.

The Barron County 2010 Comprehensive Plan mentions that the Barron County Soil and Water Conservation Department prepared a map showing bike routes using mostly paved town roads. The routes are not currently signed as bike routes, and some of them extend into neighboring counties. These routes are not officially adopted or sanctioned by Barron County.

County-Wide Existing Bikeways and Trails

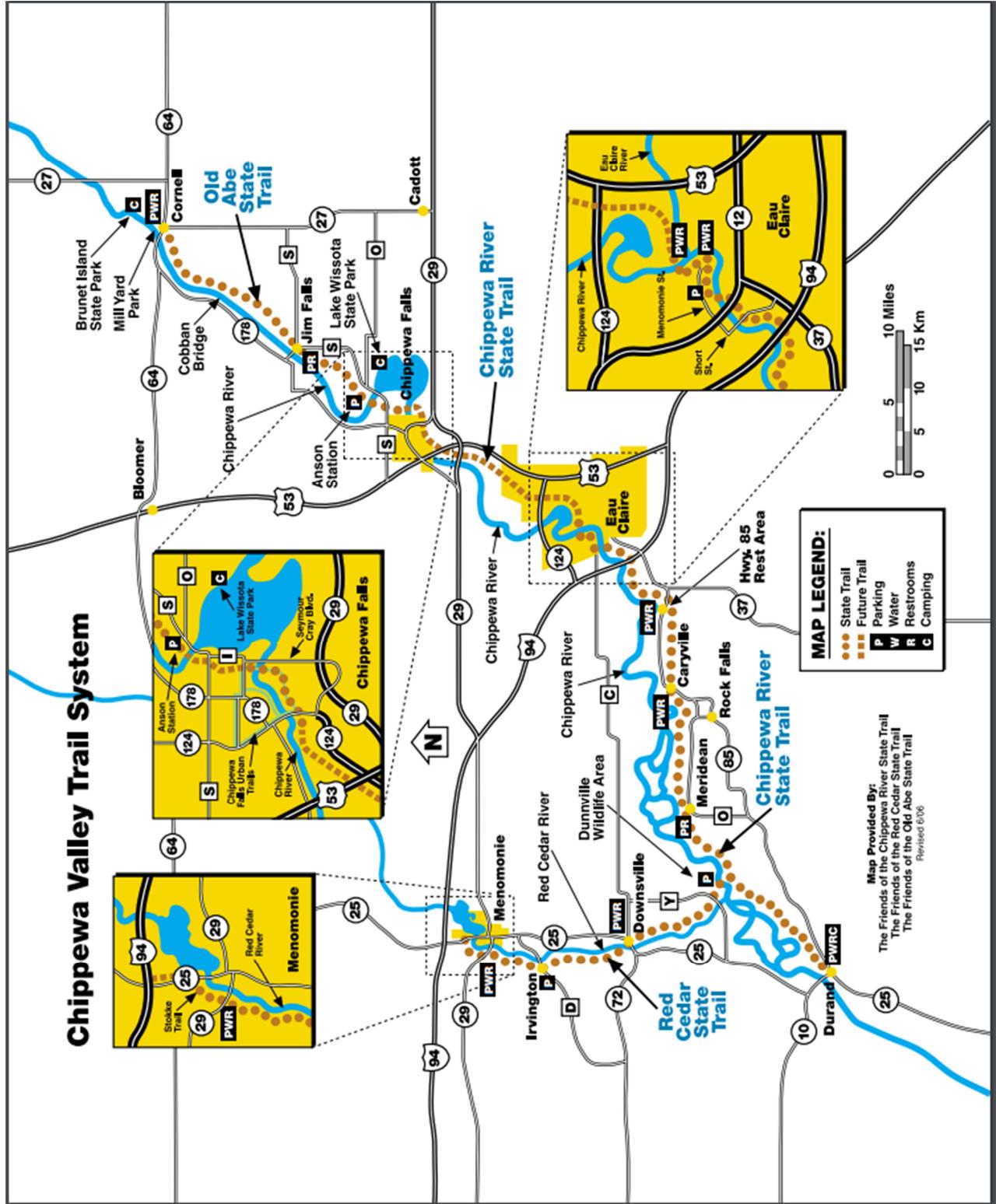
As discussed in previous sections, a number of walking and bicycling trails and facilities exist within Dunn County:

- *Cedar State Trail:* This abandoned railway corridor is a limestone 14.5 miles trail which starts in Menomonie and passes through the communities of Irvington and Downsville. In the Dunnville Wildlife Area, it connects to the Chippewa River State Trail. Activities allowed on the Red Cedar State Trail include walking, bicycling, cross-country skiing, snowshoeing, and winter biking. More information can be found at dnr.wi.gov/topic/parks/name/redcedar/.

The Red Cedar State Trail is a part of the Chippewa Valley Trail System, as illustrated by Map 2-1. The system includes the Chippewa Valley River State Trail from Eau Claire to Durand and the Old Abe Trail which connects to the Chippewa Valley State Trail in Eau Claire and travels north to the City of Cornell. When the last segment is completed in 2019, the system will feature 80 miles of trail in Chippewa, Dunn, Eau Claire, and Pepin counties.

- *Junction Trail:* This three mile trail joins the Red Cedar State Trail to the north side of Menomonie via the new Junction Trail and Bridge Extension that opened in 2018. A number of other trails exist within Menomonie, including the Stokke Parkway trail which travels through the new Menomonie industrial park. See Appendix A for more detail.
- *Paved Shoulders:* There are several key county highways that currently have paved shoulders. A paved shoulder needs to be at least four feet wide to be considered suitable for riding. A wider paved shoulder for higher volume highways, to provide more separation between motor vehicles and bicycles is needed. Sections of County Highway E going south and east, from Menomonie to the City of Eau Claire have suitable shoulders based on the amount of motor vehicle traffic.
- *Internal Park Trails:* A number of trails exist within municipal, county, and state parks as well as the county forest. Not all of the trails are open to bicycles and some are open to bicyclists as well as a variety of other activities such as horseback riding.

Map 2-1: Chippewa Valley Trail System



Regional Plans

West Central Wisconsin Comprehensive Plan 2010-2030

This plan consists of broad, advisory goals and policy recommendations for the seven-county region: Barron, Chippewa, Clark, Dunn, Eau Claire, Polk, and St. Croix Counties. The most relevant strategy recommendation is to plan for bicycle/pedestrian facilities in every county with state and regional coordination, as well as to practice regional consistency, in construction, use, and maintenance. Issues are identified such as the need to take a regional approach to trail planning; the need to accommodate growing demand for bicycle and pedestrian facilities and traditional, mixed-use, walkable neighborhoods; and the fact that conflicts exist between different road user types-such as bicyclists and motorists or bicyclists and ATV riders.

State Plans

Chippewa Valley Trail System Master Plan, 1996

From 1973 to 1994, the Natural Resources Board authorized four individual trails: the Red Cedar Trail, the Chippewa River Trail, the Old Abe Trail, and the Urban Trail. In 1996, the Department of Natural Resources proposed the establishment of the Chippewa Valley State Trail System, by combining the four existing state rail-trail corridors. The intention of the master plan was to consolidate, integrate, and promote better coordination of the planning, development, budgeting, operations, and management of these four trails, by addressing common issues as one regionally significant state trail system. Each trail retained its individual name/identity, thus allowing historical recognition and operations, local partnerships taking the lead role in development, operations and maintenance.

The Chippewa Valley State Trail System was to be a cooperative effort among the Department of Natural Resources and its partners, including the cities of Cornell, Chippewa Falls, Eau Claire, and Menomonie, as well as other communities, towns, and counties transected by the trail route. The DNR's role was to acquire most of the abandoned rail corridor for the Chippewa Valley Trail System and to develop and operate the Red Cedar and Chippewa River Trails. Local governments were expected to develop and maintain their trail segments including the Urban and Old Abe Trails. Local government units signed resolutions in support of the trail system and are in various stages of trail planning, construction, operations and maintenance.

Wisconsin State Trails Network Plan, 2001

This 2001 document (revised in 2003) 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 as shown in Map 2-2. This statewide network of interconnected trails would be owned and maintained by municipalities, private entities, and partnerships of the two. Preserving transportation corridors, such as old rail lines, is specifically discussed as a very important strategy in the creation of recreational and alternative transportation corridors. While many area rail lines have more recently become busier than they have been for several decades, with some being reactivated, it is still advised that their potential as trail corridors be maintained in case a shift in the economy or technology should change their role once again. The segments affecting the counties of Chippewa, Dunn, and Eau Claire are:

Segment 46 - Red Cedar Junction to Nelson: From the junction of the Red Cedar and Chippewa River Trails at Red Cedar Junction, two options existed for a trail connector to Nelson via Durand. There was an option to follow an abandoned rail corridor owned by Northern States Power (NSP), a subsidiary of Xcel Energy, which was chosen and a trail now extends to Durand in Pepin County. South of Durand, the Chippewa Valley Motor Car Association has a lease agreement with the NSP to use and maintain the old tracks. The car club operates limited passenger trains from Durand to the Tiffany Bottoms State Natural Area.

In 2015, a feasibility study was for Segment 12, currently referred to as the Flyway Trail in Buffalo County, which would connect to Segment 46 in Nelson. The Flyway Trail would connect to both the Great River State Trail along Highway 35, which connects to La Crosse and several other state trails and to trails in the state of Minnesota. As of 2018, portions of funding had been secured and a professional fundraising company had been hired to acquire additional private funds.

Segment 49 - Hudson to Merrilan: Between Hudson and Eau Claire, Segments 49 and 50 are two alternate east-west rail corridors with trail potential. Segment 49 connects with the Red Cedar Trail in Menomonie and the Chippewa Valley trail system in Eau Claire. A trail along the rail line

from Eau Claire to Merrilan would link the Buffalo River and Chippewa River State Trails and proposed Segment 4.

Segment 50 - Somerset to Marathon City: The Chippewa Falls to Somerset alternate closely parallels Segment 49 to the south and links with the Chippewa Valley Trail system in Chippewa Falls. Linkage to the Red Cedar Trail could be accomplished via roadway connectors between Wheeler and Menomonie. The trail corridor would extend eastward along roadway from Chippewa Falls to Marathon City west of Wausau.

Segment 51 - Cornell to Bloomer: This potential connector trail along roadways would link the Old Abe State Trail and Ice Age State Scenic Trail at Cornell. This trail would likely follow the road right of way.

Segment 62 - Ridgeland to Wheeler: This segment's abandoned rail corridor is largely privately owned. From Wheeler to Ridgeland the trail corridor would follow various roadways. From Ridgeland through Barron to Rice Lake the rail grade is still intact in many places. Some of this corridor serves as city street in Rice Lake or County Trunk Highway F in Barron and Sawyer Counties. The northern terminus of the trail occurs on the Lac Court Orielles Reservation in Sawyer County. This corridor connects with the Dresser to Cameron proposed corridor, the Wild Rivers, and Tuscobia trails. It passes through county forest, by a few state wildlife areas, the lakes area of Rice Lake and rolling agricultural lands in southern Barron County.

Segment 63 - Cornell to Chelsea: Beginning at the Old Abe Trail in the West Central Region, this abandoned rail corridor passes through some state wildlife areas and a portion of the Chequamegon National Forest to connect with the Pine Line Trail between Prentice and Medford. Since this corridor was abandoned many years ago portions of the grade may not be available due to property reversions. Road routes may be the only way to connect significant portions of this corridor from Cornell to Chelsea.

Wisconsin Rural Bicycle Planning Guide, 2006

This guide, like the *Wisconsin Bicycle Planning Guidance*, focuses primarily on “the utilitarian and transportation aspects of bicycling.” Its stated purpose is to provide general guidelines for planning and developing bicycle facilities in the counties and smaller communities of Wisconsin. Some limited design guidance is provided, but the emphasis is mostly on the planning process.

Wisconsin State Bikeways Project, 2015

In 2015, the Wisconsin Departments of Natural Resources and Transportation partnered with the Wisconsin Bicycle Federation to work on the statewide Bikeways Project, which sought to identify, create and promote a network of mapped bicycle routes in the state as shown in Map 2-3. By evaluating existing roadway and trail systems to identify priority bikeway routes across Wisconsin, the effort sought to facilitate intrastate and interstate bicycle travel by fulfilling goals outlined in the Wisconsin Trails Network Plan, and to supplement the WisDOT bicycle condition maps already available.

The project also established recommended routes to serve as Wisconsin’s segments of the United States Bicycle Route System (USBRS), a network of mainly on-road long-distance bicycle routes across the country linking urban, suburban, and rural areas via a variety of cycling facilities. Several of these proposed routes, Routes 10, 20 and 30 pass through north and west central Wisconsin. None of the proposed USBRS routes have been officially developed but these routes traverse our region from west to east.

The Wisconsin State Bikeways Project recommended routes were evaluated in the development of the Bicycle Routes Network Plan development. As many of the routes, especially in Dunn and Chippewa counties are on state highways, many with high volumes than were considered safe in this document. Instead, this document offers several parallel routes on mostly county highways where vehicular speeds are likely to be slower and traffic, especially heavy truck traffic volumes, is likely to be lower.

In addition, the following state plans were also consulted:

- *Wisconsin Guide to Pedestrian Best Practices (2010)*
- *The Wisconsin Department of Transportation Connections 2030 (2009)*
- *Wisconsin Bicycle Facility Design Handbook (2004)*

- *Wisconsin Bicycle Planning Guidance (2003)*
- *Wisconsin Pedestrian Policy Plan 2020 (2002)*
- *Wisconsin Department of Transportation Guide for Path/Street Crossings (2001)*
- *Wisconsin State Bicycle Transportation Plan 2020 (1998)*

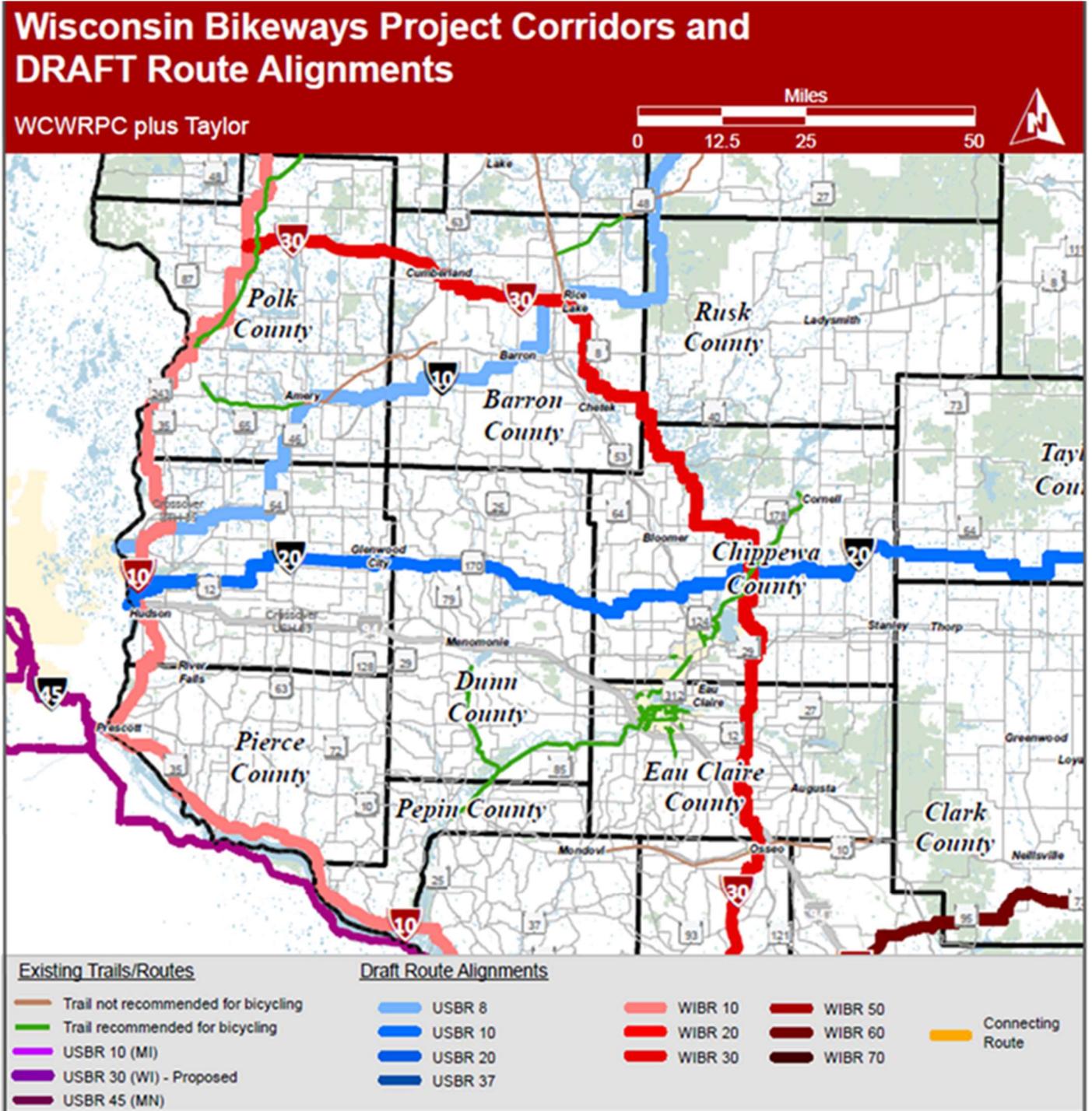
National Plans

At the national level, the U.S. Bicycle Route System project was proposed and corridors were delineated. Spearheaded by the Adventure Cycling Association, the goal of the USBRS is to create an officially numbered and signed bicycle route network that encompasses 50,000 miles of routes and creates new opportunities for cross-country travel, regional touring, and commuting by bicycle. To date, over 13,000 miles of U.S. Bicycle Routes have been approved in 26 states and D.C. The proposed U.S. Bicycle Route 20 runs west to east through Dunn County.

Small Town and Rural Multimodal Networks Guide, 2016

This guide, created in partnership with the Federal Highway Administration and Blue Cross Blue Shield of Minnesota, translates “existing street design guidance and facility types for bicycle and pedestrian safety and comfort for the smaller scale places not addressed in guides such as the NACTO Street Design Guide and ITE Walkable Urban Thoroughfares report.” The planning effort utilized this planning guide to formulate many of the recommendations in the planned bicycle route network plan.

Map 2-3: Wisconsin Bikeways Project Draft Routes



2.3 Crash Analysis

This section examines crash data from the Wisconsin Department of Transportation, particularly focusing on pedestrian and bicyclist-involved crashes from 2012 through 2016, to better understand crash trends and to determine where bicycle and pedestrian related crashes are occurring. Information included in the data set includes the location of the crash, demographics of those involved in the crash, and the conditions during which the crash occurred. While it is recognized that crash data sets have several limitations, analyzing pedestrian and bicyclist crash data can guide planners and engineers, as well as enforcement and education efforts, to build and create safer environments for alternative modes of transportation.

Traffic experts refer to traffic accidents as ‘crashes’ to emphasize that these incidents are overwhelmingly avoidable. Many of these crashes are due to drunk driving, drugged driving, speeding, or distracted driving, among other circumstances. The acknowledgement that these crashes are not inevitable means that communities must work to reduce these crashes and the resulting injuries and fatalities.

In the crash data analysis for Wisconsin and Dunn County, a pedestrian was defined as any person walking, running, jogging, hiking, sitting, or lying down on the road and involved in a motor vehicle crash. A crash involves at least one vehicle in transport in the public traffic way. All crashes on private property, such as driveways or parking lots, were excluded from the analysis. Crashes including deer were also excluded. While the crash data set utilized in this document provides a history and gives insight into local and regional trends, crash data falls a bit short of delivering a comprehensive picture of pedestrian and bicycle safety trends in the county for several reasons:

- Crash data provides the number of pedestrians and bicyclists involved in motor vehicle crashes. We do not typically have a reliable count of how many trips are taken by bicycle or by foot in a particular corridor, and therefore crash data is an incomplete picture of the situation. Without knowing the number of total trips by foot or bicycle, we cannot definitively conclude that the facilities for bicycles or pedestrians are safer, or if more people are choosing not to walk or to bike due to safety concerns or other reasons, just that the number of pedestrian and bicycle crashes has been declining across the state.

- Crash data is recorded by law enforcement. Therefore, it does not include any minor crashes or those that might result in minor injuries not reported to police. This is especially true for pedestrian and bicyclist injuries, as hospital records indicate that only a fraction of these injuries are reported to the police. Some estimates have claimed that only ten percent of bicycle and pedestrian crashes result in a police report.

National Trends

As motor vehicle safety has increased with technology (e.g. seatbelts, airbags, etc.), the number of traffic fatalities has been expected to steadily decrease. However, according to a report released by the Governors Highway Association, the number of total highway fatalities in the United States has been increasing since 2014.

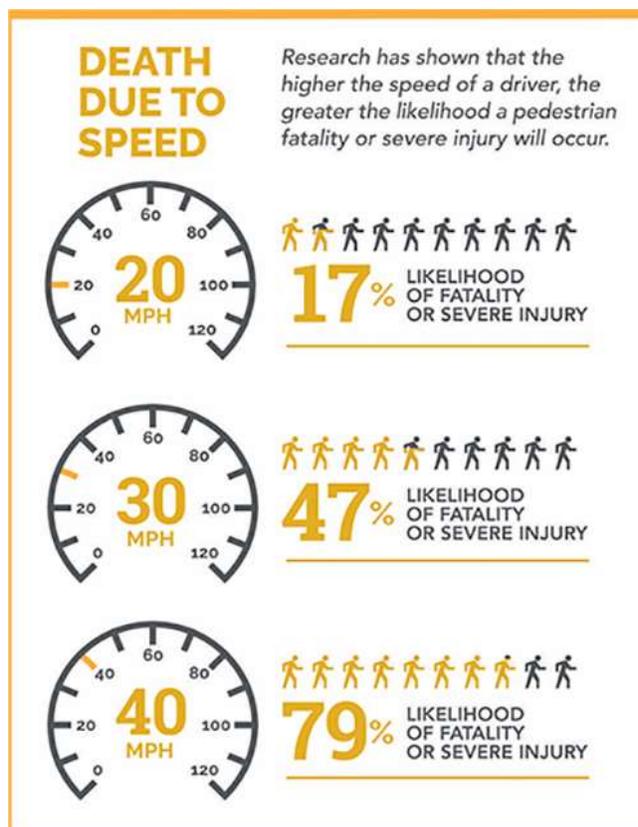
Even if a driver or passenger's chances of surviving a crash are improved by advances in safety engineering, bicyclists and pedestrians are still very vulnerable. According to a report released by the Governors Highway Association, the number of pedestrians killed in traffic increased 11 percent from 2015 to 2016 in the United States. With nearly 6,000 pedestrian fatalities nationwide, 2016 saw the highest number of pedestrian deaths in twenty years. Bicyclist fatalities are also on the rise (Governors Highway Safety Association, 2017). There are several factors that appear to be contributing to the increase in traffic deaths among bicyclists and pedestrians:

- A stronger U.S. economy and cheap gas prices have put more vehicles on the roads and drivers are driving more miles, setting records for vehicle miles traveled in 2016.
- There has been a rise in distracted or inattentive driving, as well as "distracted walking", as people are more attached to their mobile devices. According to the National Safety Council, at any given time, seven percent of drivers are using their cell phones. Furthermore, 47 percent of drivers report texting either manually or through voice controls. In 2014, inattentive driving was a contributing factor in almost 20 percent of all crashes in Wisconsin. (WisDOT, 2016)
- High speeds are another factor contributing to increased fatalities, as the likelihood of a pedestrian or bicycle crash resulting in a fatality. As shown in Figure 2-6, the likelihood of fatality increases significantly

when the motor vehicle is traveling 40 miles per hour or faster. According to the National Safety Council, 64 percent of drivers are comfortable exceeding the posted speed limit.

- Alcohol also plays a significant role. Fifteen percent of pedestrian fatalities are caused by drunk drivers, while 34 percent of pedestrians who are killed are legally intoxicated. Among bicyclist deaths, 37 percent had alcohol involvement either for the motor vehicle driver or bicycle rider (Schaper, 2017).

Figure 2-6: Increased Likelihood of Pedestrian Fatality Due to Speed



Wisconsin Crash Data Analysis

Many of the national trends are similar to those observed in Wisconsin and the west central Wisconsin region. Most pedestrian and bicycle deaths occur in urbanized areas, at non-intersection locations, and at night. Middle-aged adults between the ages of 45 to 64 and children between the ages of 5 to 15 were the most at risk to be killed in a pedestrian or bicyclist involved fatality. Among bicyclists, the average age of a victim of a fatal crash has been increasing for some time as bicycles are increasingly being utilized by adults.

Data from the past twenty years, shown in Figure 2-7 and Figure 2-8, clearly show a downward trend in pedestrian and bicycle crashes and incapacitating injuries. Pedestrian deaths have been trending downwards in Wisconsin as well, with an average of 50.7 deaths per year over the past twenty years compared to an average of 45.4 deaths per year over the past five years. Bicycle deaths were more variable over the past 20 years.

Figure 2-7: Wisconsin Pedestrian and Bicycle Crashes, 1997-2016

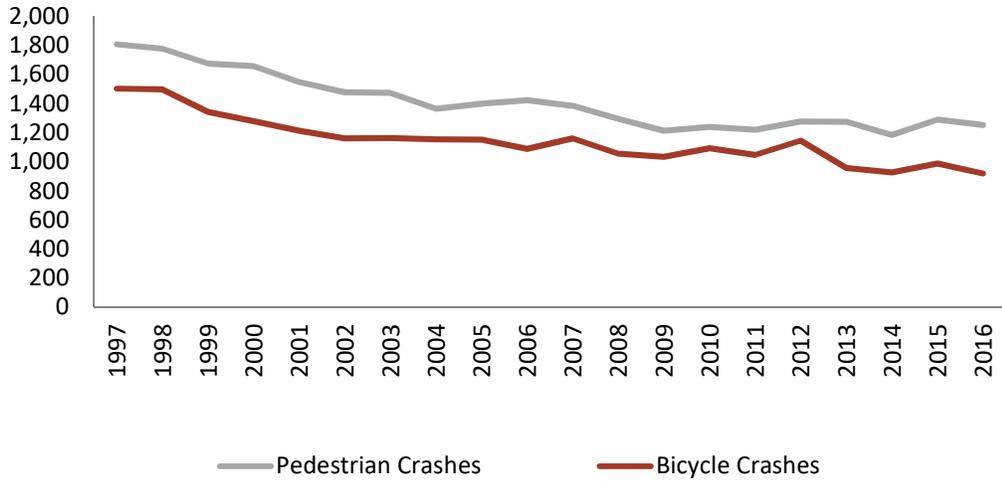
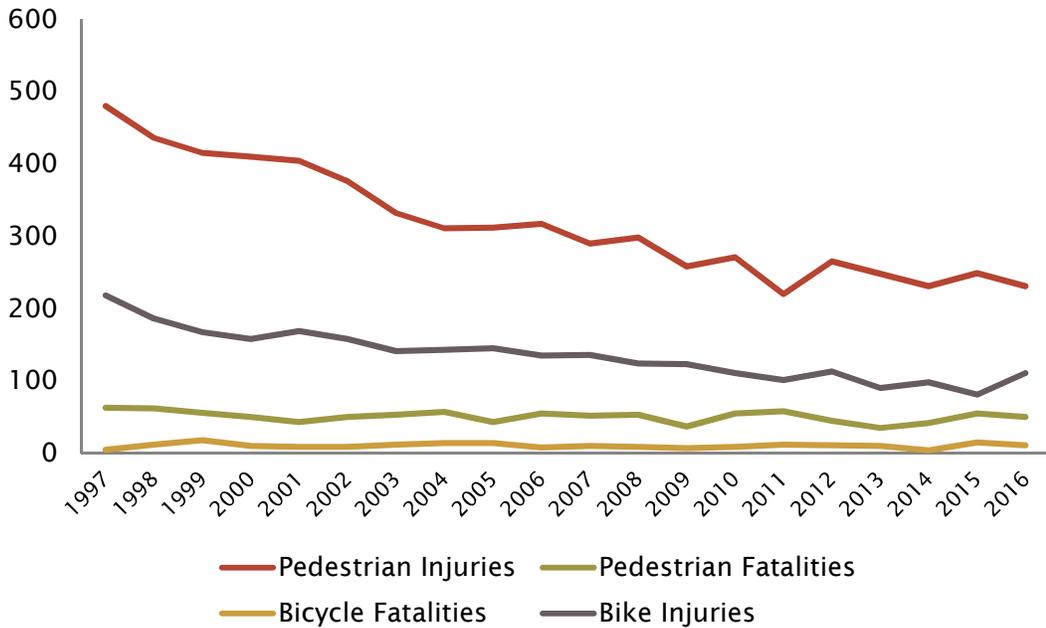


Figure 2-8: Wisconsin Pedestrian and Bicycle Injuries and Fatalities, 1997-2016

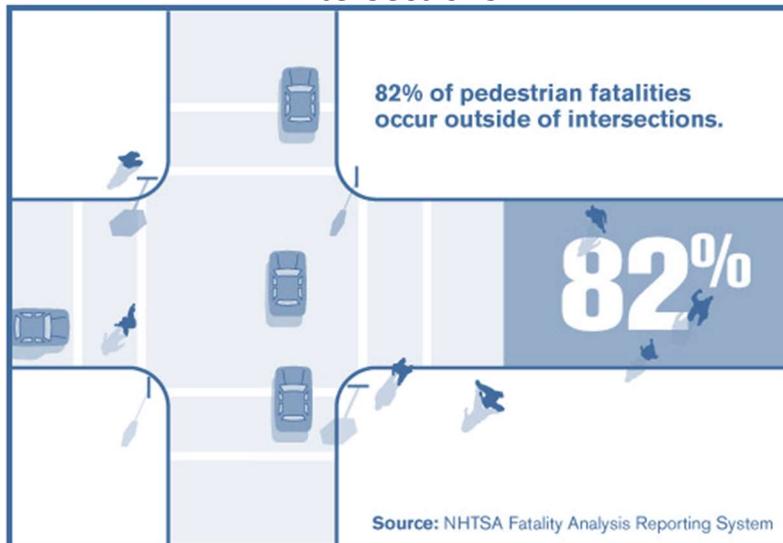


Source: WisDOT Crash Data, 2012-2016

There are several trends that the Wisconsin DOT observed in its 2015 factsheets on reported pedestrian and bicycle crashes (WISDOT, 2016):

- Few reported pedestrian crashes result in property damage only; the pedestrian is almost always injured.
- Pedestrian crashes most often occur on weekdays.
- Most pedestrian crashes occur between 3 and 6 PM (the hours after school and the prime time that adults commute from work). This afternoon peak is far higher than the morning rush-hour peak, possibly because of driver and pedestrian fatigue and inattention.
- The vast majority of pedestrian crashes occur in the roadway or at a crosswalk. Any street crossing can put a pedestrian in the path of a motor vehicle driver who may not be paying attention or may not have time to avoid a pedestrian who suddenly steps into the path of the vehicle.

Figure 2-9: Pedestrian Fatalities Occur Outside of Intersections



- Of the 52 crashes in which a pedestrian was killed, 31 (59%) involved an impaired pedestrian or driver. Of the 1,193 crashes in which a pedestrian was injured, 95 (8%) involved either an impaired pedestrian or driver.

- Pedestrians between the ages of 15 to 24 are most at risk for injuries. Pedestrians between the ages of 55 to 64 are more likely to suffer a fatal crash.
- Bicyclists are almost always injured in a collision also involving a motor vehicle.
- The most common types of bicycle crashes involve: motorists failing to yield the right of way to a straight-through bicyclist when making a left turn; motorists failing to yield at a controlled intersection; bicyclists failing to yield at a controlled intersection; and motorists turning right on a red.
- Children, teenagers, and young adults together comprised a heavy majority of the injuries (though not fatalities) in 2015. High injury rates among this group are a result of poor road skills and excessive vehicular speeds in neighborhoods and school zones.

Dunn County Five Year Crash Analysis

From 2012 to 2016, there were a total of 3,338 vehicular crashes in Dunn County. Of these crashes, 69 involved a pedestrian or bicyclist, or 1.2 percent of reported crashes as shown in Figures 2-10 and 2-11. This equates to 15.6 pedestrian and bicycle involved crashes per 10,000 people in Dunn County, compared to 19.5 pedestrian and bicycle crashes per 10,000 people for the state of Wisconsin.

As displayed in Table 2-4, the number of pedestrians involved crashes was greater than bicyclist involved crashes in Dunn County, which is unsurprising given that commuter data shows that a worker is more likely to walk to work than ride a bicycle. As shown in Figures 2-10 and 2-11, the majority of Dunn County’s pedestrian (74.4%) and bicycle (86.7%) crashes occurred in the City of Menomonie-which is also the municipality with the most walking and bicycling commuters to work and the home of UW-Stout. Ten percent of the county’s pedestrian crashes were in the Village of Colfax.

Table 2-4: Dunn County Total Crashes							
	2012	2013	2014	2015	2016	Total	% Change 2012-2016
Total Crashes	590	691	707	665	685	3,338	16.1%
Pedestrian	6	8	5	11	9	39	50.0%
Bicycle	5	7	3	7	8	30	60.0%

Source: WisDOT Crash Data, 2012-2016

Figure 2-10: Bicycle Related Crashes, 2012-2016

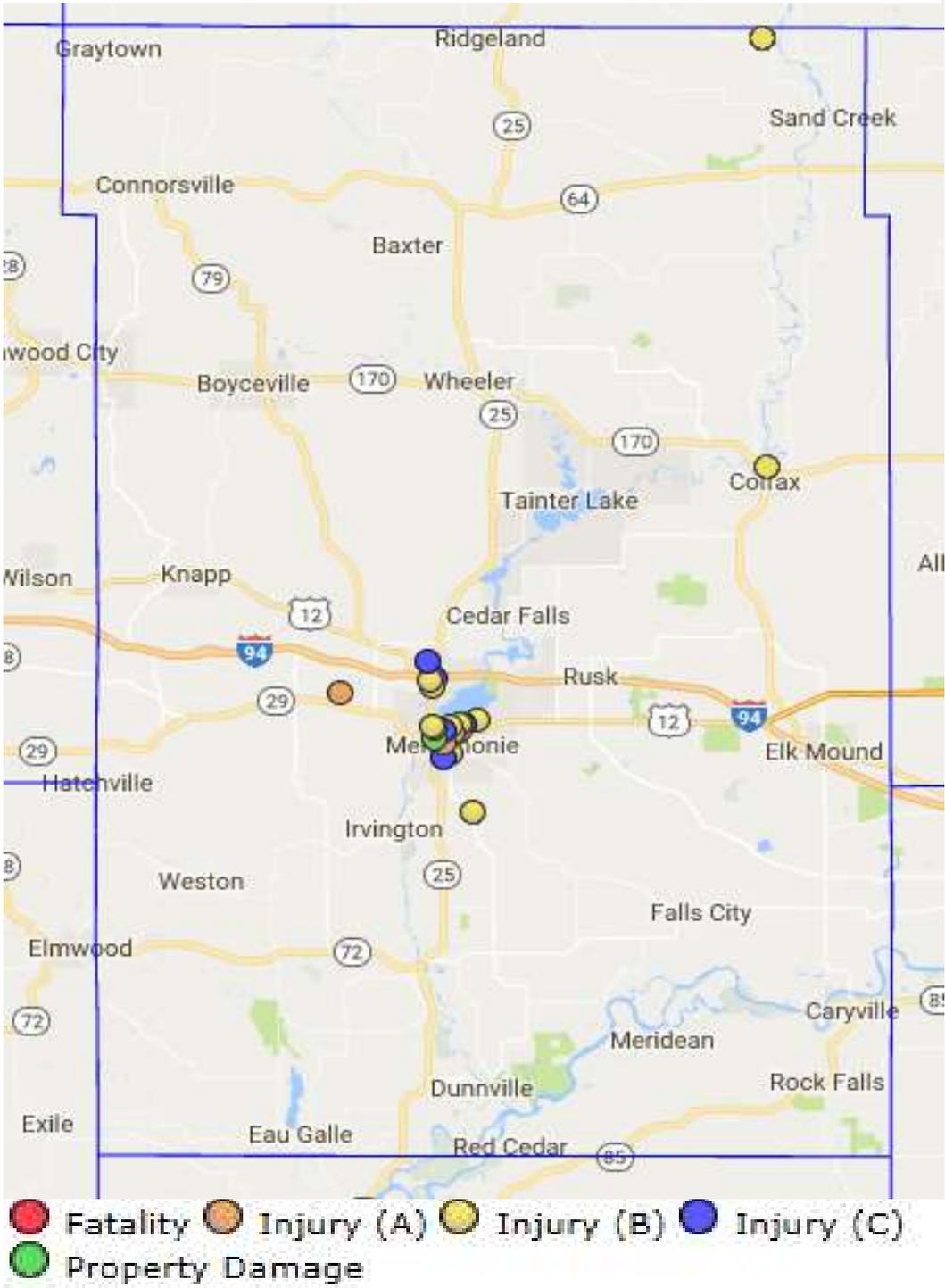
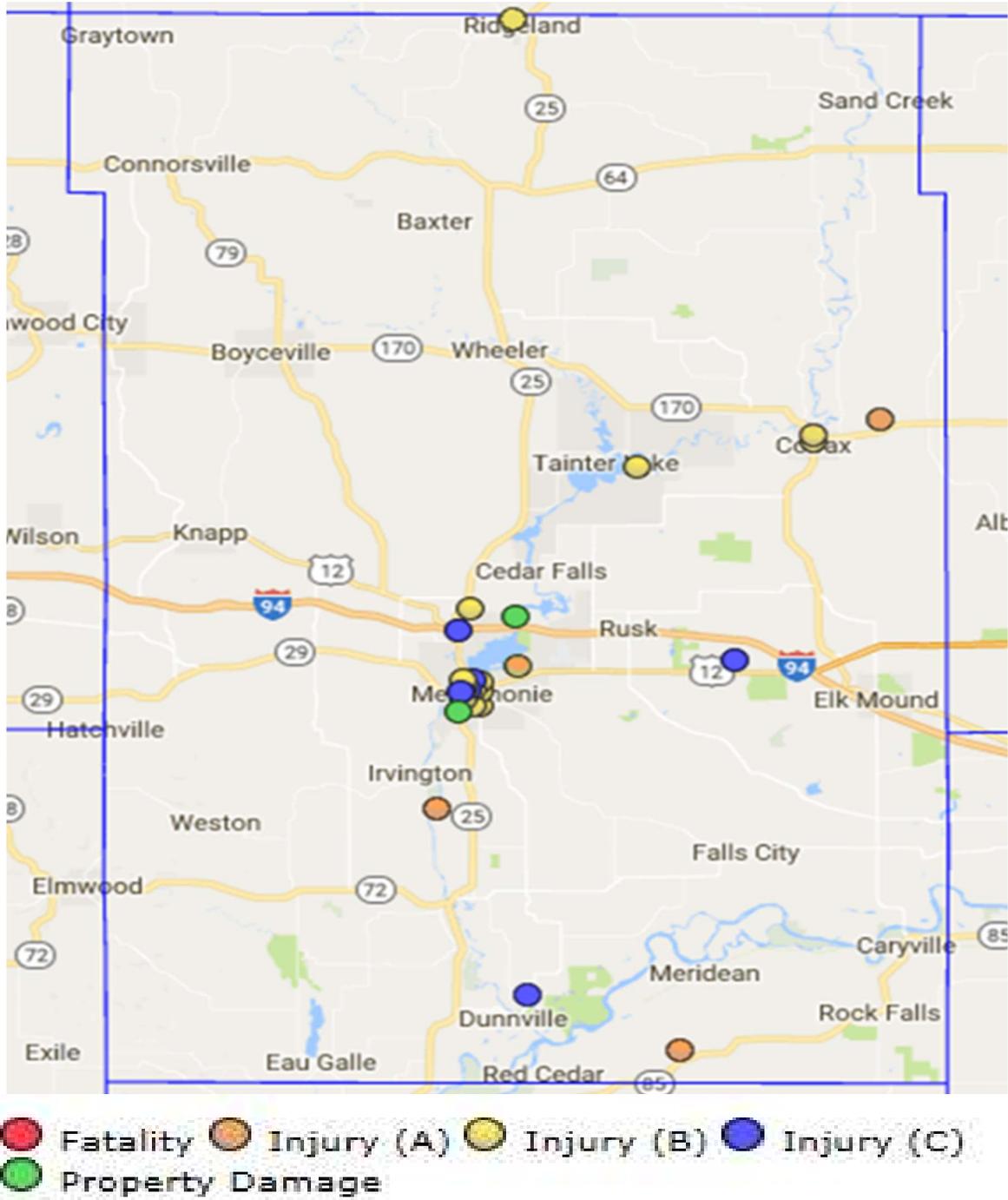


Figure 2-11: Pedestrian Related Crashes, 2012-2016



Injuries and Fatalities

While pedestrian and bicycle involved crashes comprise a small percentage of the total crashes both in Dunn County and the state, pedestrian and bicyclist involved crashes are more likely to result in a serious injury or fatalities. Of the 1,005 injuries shown in Table 2-5 resulting from all vehicular crashes from 2012 to 2016 in Dunn County, 3.6 percent involved pedestrians and 2.9 percent involved bicyclists while only 1.2 percent and 0.9 percent of total crashes involved pedestrians and bicyclists, respectively. Again, this is evidence of the vulnerability of pedestrian and bicyclists, and the need to provide safer facilities for these modes of travel.

Table 2-5: Dunn County Total Injury Crashes						
	2012	2013	2014	2015	2016	Total
Total Injuries	203	186	221	208	187	1,005
Pedestrian	6	8	3	11	9	37
Bicyclist	5	7	2	7	8	29

Source: WisDOT Crash Data, 2012-2016

As shown in Table 2-6, traffic deaths in Dunn County are a relatively rare occurrence. In Dunn County, there were no pedestrian deaths since 2010 and the last bicyclist death was in 2005. Considering the recent spikes in bicycle and pedestrian fatalities in 2015 and 2016 across the state and nation, this is an important distinction.

Table 2-6: Dunn County Total Fatalities						
	2012	2013	2014	2015	2016	Total
Total Fatalities	6	9	4	5	11	35
Pedestrian	0	0	0	0	0	0
Bicyclist	0	0	0	0	0	0

Source: WisDOT Crash Data, 2012-2016

Characteristics of Crashes

Over three-quarters of the crashes in Dunn County took place on roads in urban settings. This is not surprising as cities and villages offer more clustered origins and destinations, similar to cities, creating more occasions to walk and bike. In Dunn County, the vast majority of pedestrian and bicycle crashes occurred during dry conditions, particularly for bicyclists. It is likely that many bicyclists and pedestrians avoid trips in adverse weather conditions.

The majority of pedestrian and bicycle involved crashes happened on streets and roads that had posted speeds of 25 miles per hour or less per hour, as displayed on Table 2-7. As pedestrians and bicyclist tend to feel more comfortable on or along roads with lower speeds, it is likely that one of the reasons for this is that there are more bicycle and pedestrian trips being taken on low-speed roads. A smaller proportion of pedestrian crashes, 23.1 percent, happened on facilities signed at 30 miles per hour, or higher, while about a quarter (26.6 percent) of bicycle crashes in Dunn County happened where speeds were posted at 30 mph or higher.



The circumstances of this crash are unknown, though we suspect it involves the somewhat twisted sense of humor of a Dunn County resident.

Table 2-7: Dunn County Posted Speed for Motor Vehicle at Crash Locations							
Pedestrian							
Posted Motor Vehicle Speeds	2012	2013	2014	2015	2016	Total	% of Total
25 MPH or Less	3	4	3	9	6	25	64.1%
30 to 40 MPH	1	4	0	2	2	9	23.1%
45 MPH or More	2	0	2	0	1	5	12.8%
Total	6	8	5	11	9	39	100.0%
Bicycle							
Posted Motor Vehicle Speeds	2012	2013	2014	2015	2016	Total	% of Total
25 MPH or Less	4	6	3	5	4	22	73.3%
30 to 40 MPH	0	0	0	0	1	1	3.3%
45 MPH or More	1	1	0	2	3	7	23.3%
Total	5	7	3	7	8	30	100.0%

Source: WisDOT Crash Data, 2012-2016

Table 2-8 shows the time of day during which pedestrian and bicycle crashes occurred in Dunn County. About 30 percent of pedestrian and bicycle crashes occurred between 3pm and 7pm, a time span that includes school dismissals and many workers driving home. The same afternoon peak is observed at the state level. A smaller peak does occur during the morning commute, a little more than half of the afternoon commute, which may be due to driver fatigue, distraction or inattention as they leave work in the afternoon, and perhaps partially due to the sudden flood of students leaving school at dismissal times, as opposed to slightly more gradual arrivals in the mornings.

As displayed in Table 2-9, the number of pedestrian crashes was greatest in the months of October, August and November. For bicycle crashes, the greatest number of crashes occurred in the month of July, followed by October and June.

Table 2-9: Dunn County Month of Crash				
Month	Pedestrian Crashes		Bicycle Crashes	
	Count	% of Total	Count	% of Total
Jan.	1	2.6%	0	0.0%
Feb.	0	0.0%	0	0.0%
Mar	1	2.6%	1	3.3%
Apr	5	12.8%	2	6.7%
May	2	5.1%	0	0.0%
Jun	1	2.6%	4	13.3%
Jul	0	0.0%	8	26.7%
Aug	6	15.4%	3	10.0%
Sep	4	10.3%	3	10.0%
Oct	10	25.6%	7	23.3%
Nov	6	15.4%	2	6.7%
Dec	3	7.7%	0	0.0%
Total	39	100.0%	30	100.0%

Source: Wisconsin DOT Crash Data, 2012-2016

Crash Demographics

Males were more likely than women to be in a pedestrian or bicyclist crash. Of the 39 pedestrian crashes, 59.0 percent were males and 41.0 percent were female. However, 73.3 percent of bicycle crashes involved a male bicyclist.

The victims of pedestrian and bicycle crashes are usually young. Of all pedestrian crashes, 48.7 percent involved a person younger than the age of 25. Ten percent

Table 2-8: Dunn County Time of Crash				
Time of Day	Pedestrian Crashes		Bicycle Crashes	
	Count	% of Total	Count	% of Total
1:00 AM	3	7.7%	1	3.3%
2:00 AM	2	5.1%	0	0.0%
3:00 AM	0	0.0%	0	0.0%
4:00 AM	0	0.0%	0	0.0%
5:00 AM	1	2.6%	0	0.0%
6:00 AM	0	0.0%	0	0.0%
7:00 AM	0	0.0%	1	3.3%
8:00 AM	2	5.1%	2	6.7%
9:00 AM	0	0.0%	2	6.7%
10:00 AM	2	5.1%	0	0.0%
11:00 AM	0	0.0%	1	3.3%
12:00 PM	0	0.0%	2	6.7%
1:00 PM	2	5.1%	1	3.3%
2:00 PM	2	5.1%	5	16.7%
3:00 PM	2	5.1%	1	3.3%
4:00 PM	5	12.8%	3	10.0%
5:00 PM	4	10.3%	1	3.3%
6:00 PM	1	2.6%	4	13.3%
7:00 PM	4	10.3%	2	6.7%
8:00 PM	8	20.5%	3	10.0%
9:00 PM	0	0.0%	1	3.3%
10:00 PM	0	0.0%	0	0.0%
11:00 PM	1	2.6%	0	0.0%
12:00 AM	0	0.0%	0	0.0%
Total	39	100%	30	100%

Source: WisDOT Crash Data, 2012-2016

were younger than 16. For bicycle crashes, 53.3 percent of crashes involved a bicyclist younger than the age of 25. Twenty percent of bicyclists in crashes were less than 16 years old. Notably forty-three percent of bicycle crashes involved a bicyclist between the age 25 and 44.

2.4 Public Participation

The public had several opportunities at key points during the process to give input. In addition, advisory committee meetings that were open to the public, the public were invited to visit the project website, to participate in an online Wikimapping activity and to complete an online survey. Two open houses were also held, the first to gather input in December of 2017, and another in November of 2018 to review and comment on plan recommendations.

Project Website

Over four hundred people visited the project website from November 2017 through January 2018 to find information and updates about the project, and the County open house. The website also directed visitors to participate in the Wikimapping project and an online survey. Additionally, open house fliers with the website address were sent out to all the public libraries in the area and the village and city clerks. The counties posted links on their websites.

Wikimapping

Using the Wikimapping website, an online mapping program, County residents were asked to share their ideas for connecting routes and their knowledge on barriers for bicycling and walking in the County by adding points, lines, and comments on an interactive map.

Across the three counties, there were 64 active users. A majority of the routes drawn and the destinations pinpointed were within the cities of Altoona, Chippewa Falls, Eau Claire, and Menomonie as well as the Village of Lake Hallie. However, the need for improved connections between Menomonie and the Eau Claire area was clearly a priority among users.

Online Survey and Open House Participants

The online survey and open house participants are not a representative sample of the population. Also, many of the survey and open house participants overlapped. Those that did participate were much more likely to be bicycle and walking enthusiasts than a representative cross-section of the general population. Table 2.10 compares a randomized scientific survey of residents in a national survey of the 50 largest metros to the Dunn County participants in the open house and the online survey.

Online Survey

Over 46 people completed the non-randomized online survey in Dunn County. For an overwhelming majority of these participants, bike-ability and walkability were ‘very important’ or ‘important’ factors when choosing where to live and work and an even higher number of respondents reported that investment in bicycle and pedestrian systems were ‘very important’ or ‘important’ to them. The majority of participants walked or biked for social, recreational and exercise/fitness purposes while fewer walk or bicycled to work or school on a daily or weekly basis.

Table 2.10- Bicycle Comfort Levels

Sample Source	Experienced: Confident and comfortable riding with traffic in most situations.	Casual: Prefer separated paths, but will ride on roads where space is available and traffic is manageable.	Less Confident: Only feel safe on separated paths.	Non-Rider: I don't ride and have no plans to start.
National Survey of 50 Largest Metros in U.S.*	4%	9%	56%	31%
Open House Participants	53%	42%	0%	5%
Online Survey Participants	43%	38%	14%	5%

Source: (Dill & McNeil, 2016)

Open Houses

Nineteen people attended the first Dunn County open house in Menomonie. Input was sought on the Advisory Committee's draft goals and objectives, data was gathered on participants walking and bicycling habits and preferences, and destinations, barriers, routes, and trails were identified on county maps.

The open house revealed infrastructure improvement preferences for wide paved shoulders, shared-use paths along roads, and bike lanes among participants. Shared lane pavement markings (sharrows) were the least likely to be prioritized by participants. In terms of pedestrian and bicycling policies and programming, the mapping of bicycle and pedestrian facilities was overwhelmingly favored by participants, followed by increased traffic education for adults and children and signage for bicycle routes.

2.5 Bicycle Route Network Plan Development

After gathering information on the current conditions for bicycling and walking in the County, a variety of methods were used to determine the best routes that would appeal to the greatest number of riders. This included mapping existing and suggested routes, a traffic stress analysis for every paved road in the County, and extensive field work to analyze visibility and other safety conditions.

Routes were chosen with consideration for safety, including sight-lines and traffic counts, speeds, directness, and aesthetics, such as scenery. The routes selection also focused on connecting communities as well as places of interest, while minimizing route duplication, and striving to utilize existing facilities and investments.

Because most recommended routes are on-road facilities, on rural roads in the County, these bicycle routes are intended for adult riders, those with knowledge of rules of the road and skills to interact with higher speed motor vehicle traffic. Riders should be aware that during certain times of days, such as during rush hours, traffic volumes could be higher. Also, given the agricultural nature of Dunn County, bicyclists should also be aware of farm equipment on the roads, which may occupy entire the motor vehicle travel lane and any existing shoulder.

It should also be noted that bicycles are considered to be a road worthy vehicle. While a road may not be designated as a bike route within this plan, bicycles are

allowed on any road or street that does not expressly prohibit bicycles-which includes most interstate highways.

Note that while there are certainly exceptions, most children would not be expected to safely traverse the distances between the communities over varying elevations and limited sight lines, on-road, with vehicle motor traffic. As such the on-road routes in the network plan are recommended for adult riders.

Classifying User Types

The first step of the route selection process was to identify for whom the network was being designed. This started with participants in the open houses and survey who provided insight into the needs and habits of potential users. Potential users were identified below.

Pedestrians: This category includes all people that walk, run, or use a wheelchair or other mobility devices, regardless of age or ability. The needs of almost all pedestrians can be met with the same infrastructure approach since federal and state mandates require all sidewalks and paved paths to be useable for people with disabilities. Specific pedestrian planning efforts are often best suited to neighborhood or even community plans. This is due to practicality as the typical pedestrian trip length is fairly short for errands, work, or even recreation. The *2002 National Survey of Pedestrian and Bicyclist Attitudes and Behaviors Highlights Report* found that only 14.8 percent of all walking trips in the United States are longer than 2 miles. As this is a countywide plan, the bicycle route network plan mainly focuses on connecting communities and places of interest for bicyclists, who can travel longer distances in a shorter amount of time when compared to pedestrians. Nonetheless, many of the on-road routes identified in the bicycle route network plan are routes on which a pedestrian would likely feel comfortable due to low traffic or wide paved shoulders. Recommended trails in the plan would be suitable to both pedestrians and bicyclists. To improve pedestrian conditions in the County a number of programs are recommended in Part 3 of this plan.

Casual Bicyclists: This category includes bicyclists who only feel safe on separated trails/paths with few traffic crossings, and those that prefer paths, but will ride on roads where space is available and traffic is manageable. As the average adult commuter pedals at speed of around 10 miles per hour,

many of the communities are within reach of each other within a reasonable amount of time. For example, Elk Mound and Colfax are ten miles apart. Likewise, Boyceville and Knapp are seven miles away from each other.

- *Confident Bicyclists*: This class of bicyclist is confident and comfortable riding with traffic in most situations. They are likely to go bicycle touring or out for recreation or training purposes and are likely to travel much longer distances. Bicycle touring experts suggest an average distance of 30 to 60 miles per day. This category also includes many bicycle commuters in all levels of urban traffic.

Figure 2-12: Bicycling Conditions	
Good (Urban)	Little to no traffic stress. Generally suitable for the entire population. Only applies to low-speed city streets and separated paths.
Good	Little traffic stress. Suitable for most adults, even those with less confidence or experience interacting with motor vehicles (e.g. causal bicyclists).
Good (higher traffic)	Low Traffic stress, but with over 500 ADT. Suitable for most adults, but perhaps not for those with little confidence or experiences interacting with motor vehicles. Only applies to rural roads.
Moderate	Moderate traffic stress. Uncomfortable and unappealing for some, but adequate for more experienced bicyclists.
Poor	High traffic stress. Only suitable for very skilled and confident bicyclists.
Not Rated	Gravel roads, private roads, highways with more than four travel lanes, and roads with no data available.
Source: WisDOT Wisconsin Rural Bicycle Planning Guide, 2006	

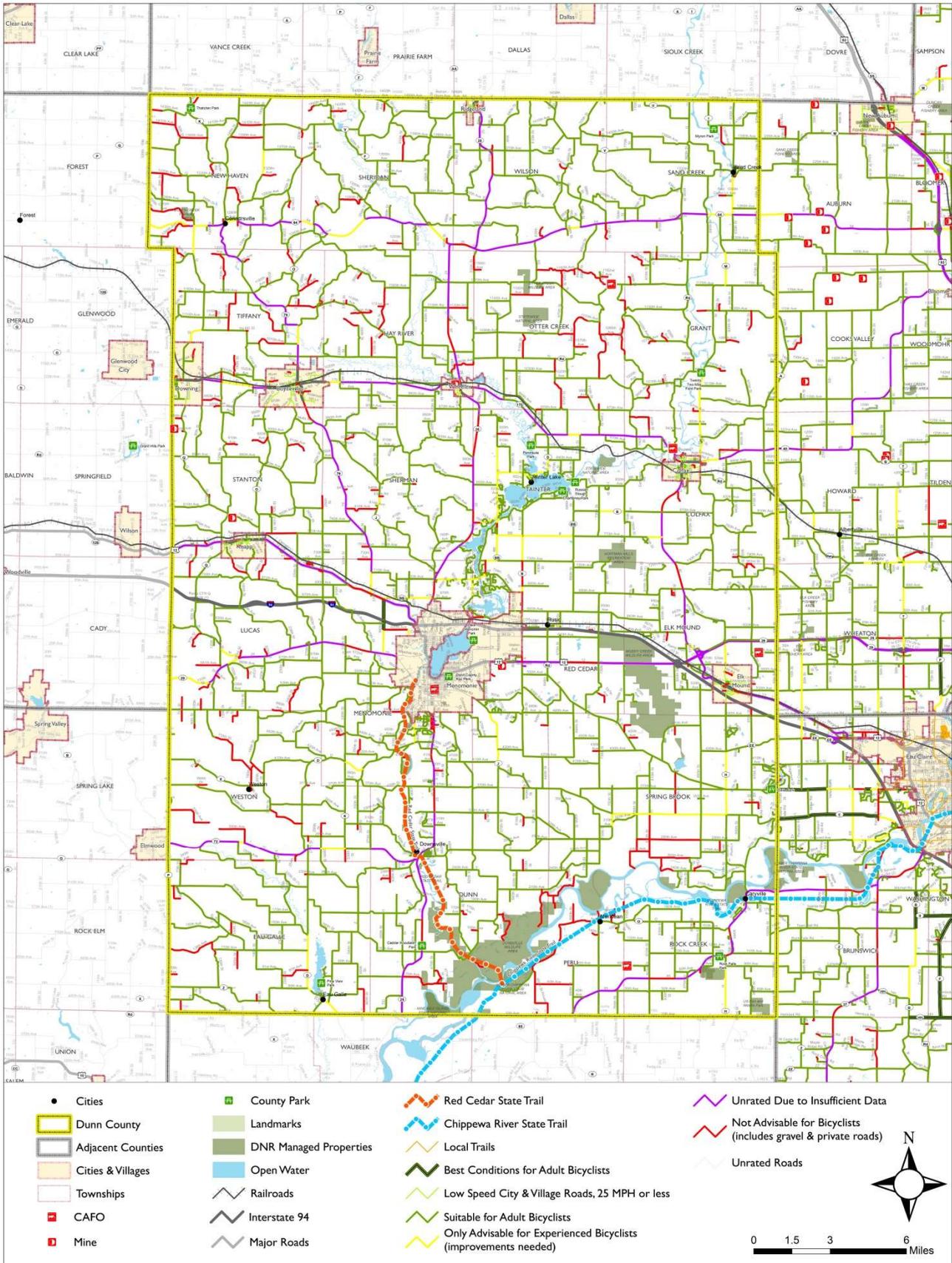
Traffic Stress Analysis Methodology for Road Bicycling Conditions

The Bicycling Conditions for Rural Roadways model, as described in the 2006 *Wisconsin Rural Bicycle Planning Guide*, was used to determine “first-glance” suitability for bicycling on all roads located within Dunn County. This system rates bicycle suitability based on width of a travel lane, the existence of paved shoulders, and the average daily traffic count. As a first step, these variables were used to categorize roads into six groups as outlined in Figure 2-12.

The Wisconsin Local Roads (WISLR) data base was used as the primary data source for the bicycle suitability analysis. Some modifications were made to the models based on the data available. Due to missing data points within the WISLR data set, some roads could not be rated at this early stage. Also private and gravel roads were not rated. Designated truck routes with heavy truck traffic were rated as poor for bicycling. The streets in the City of Menomonie were not rated, as the city already has bicycle plans and active bicycle and pedestrian advisory groups, which have worked to determine the best routes and plans in their community. This analysis therefore focuses on creating connections of rural routes and smaller villages and cities to those already defined networks.

The Traffic Stress Analysis Map, shown in Map 2-4, reveals that at first glance, there are many suitable roads for bicycling within the county. However, natural and man-made barriers pose a challenge for connectivity. Gravel roads and lack of “through-connections” pose challenges to connecting communities and places of interest in some areas. Also, because cities and villages tend to lie on major roads that funnel traffic to these activity centers, finding bicycle routes into and through the communities was a common challenge. Lastly, the Traffic Stress Analysis did not account for visibility issues at this stage which was incorporated after field work was conducted and changed many of the suitability ratings of the roads. As field work was conducted, which is discussed in the next section, visibility and posted speed data information was taken into consideration when evaluating potential bicycle routes. This would change the suitability ratings of a number of roads initially found in this analysis to be good for bicycling.

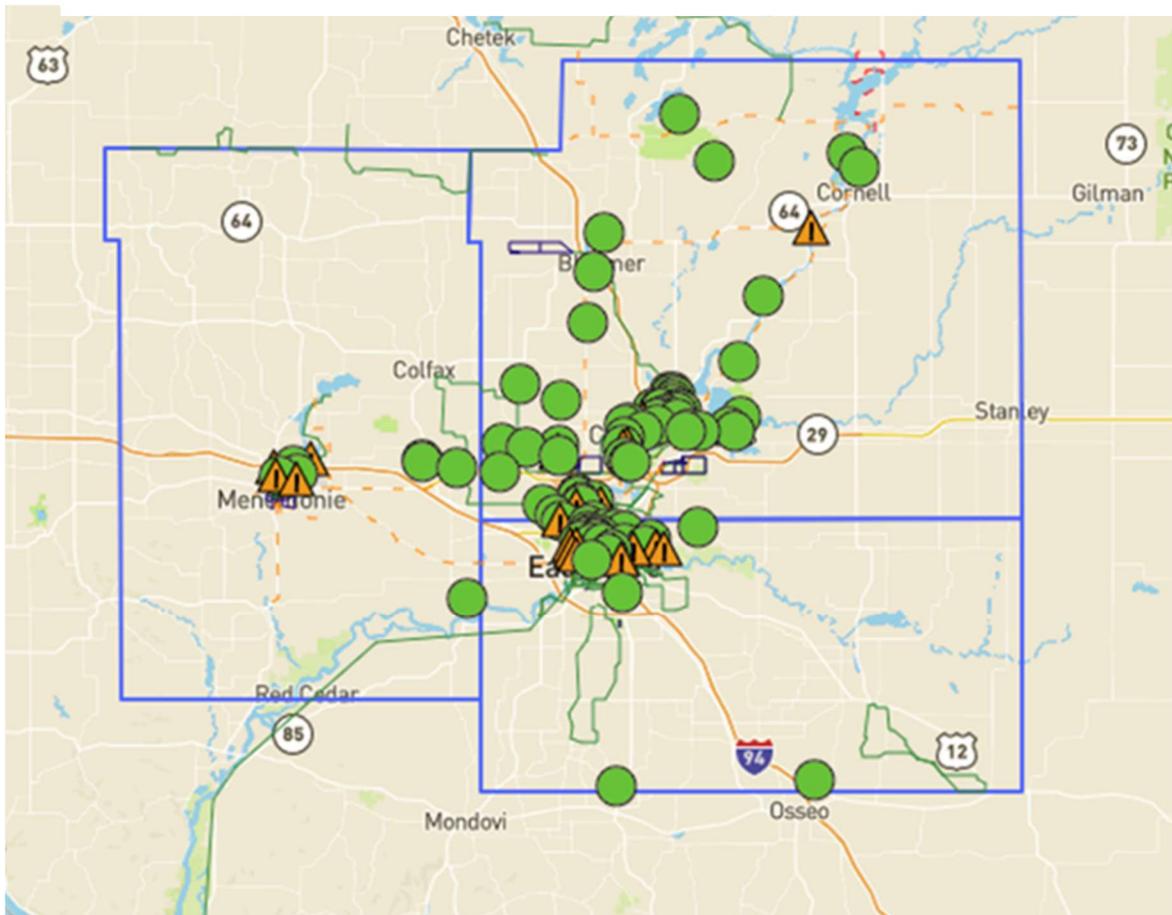
Map 2-4: Dunn County Bicycle Stress Map



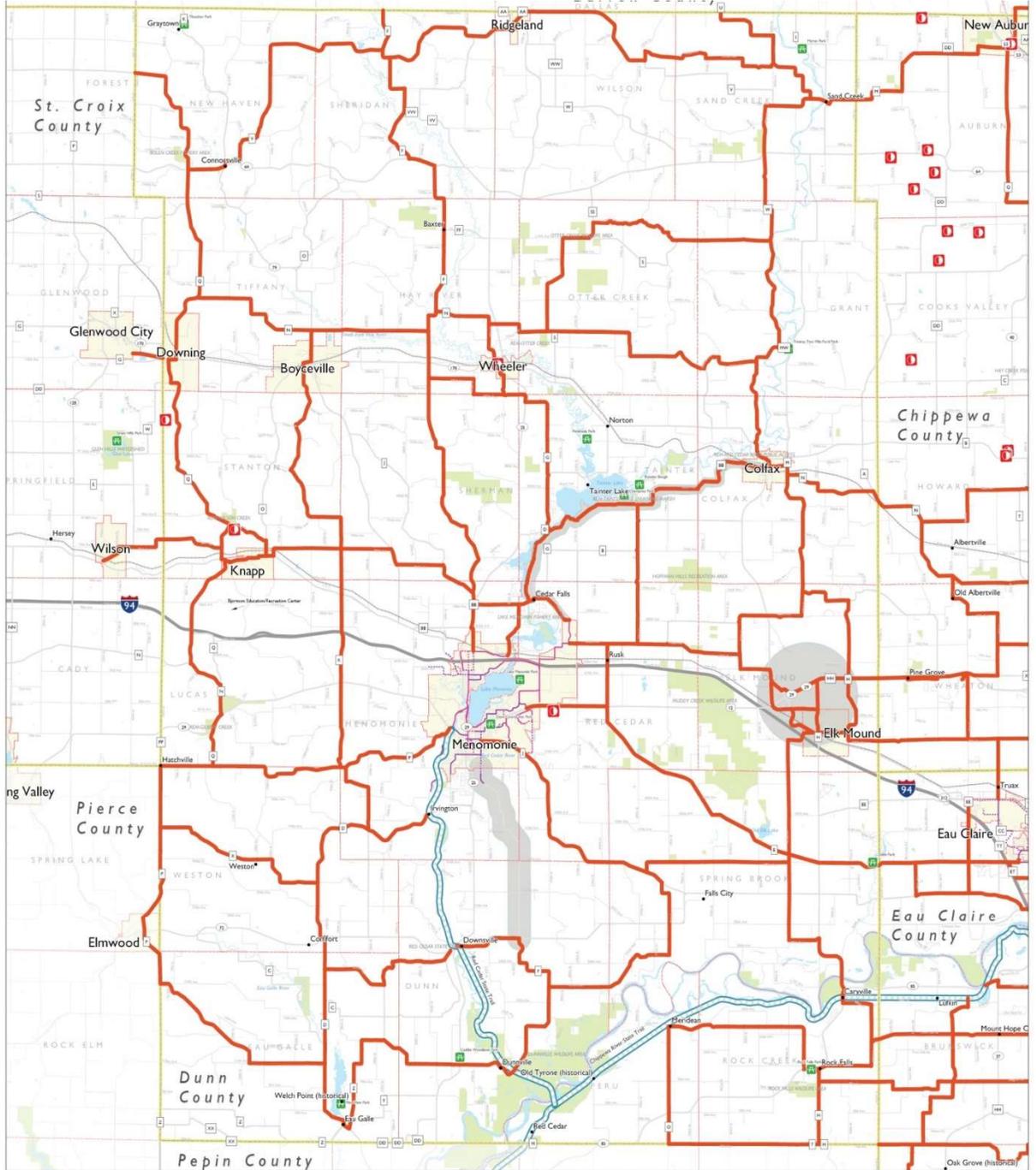
Identifying Potential Routes

- *Public Input:* The gathering of public input started early in the process, in the fall of 2017, with the distribution of surveys, the creation of the online Wikimapping exercise (comment locations and routes shown in Figure 2-13), and the December 2017 open house. At the open houses and in the Wikimap, participants were asked to identify and draw routes that they frequent, or that they would like to ride as well as destinations to which they would like to ride.
- *Connecting Communities:* A key goal of the bicycle plan is to create connections between cities, villages, and smaller communities, as well as finding connections to points of interest outside of those communities, including convenient connections to the Chippewa River and Red Cedar Trails. In March of 2018, the county advisory committee utilized the traffic stress analysis map to draw potential routes between communities.

Figure 2-13: Public Participation Wikki Map



Map 2- 5: Dunn County Bicycle Route Network Plan without Recommended Improvements



REGIONAL BICYCLE & PEDESTRIAN PLAN

DUNN COUNTY, WI

0 1.25 2.5 5 Miles



Data Sources: U.S. Census, Wisconsin Department of Administration, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, WCWRPC
Last Update: November, 2018



- County Park
- Sand mines and processing plants
- DNR Managed Properties
- Area of Further Study

City of Menomonie Routes/Trails

- Existing Bike Routes
- Proposed Bike Routes
- Existing Municipal Trail
- Proposed Trails in Other Plans
- State Trails

Project Recommendations

- All Recommended Routes

- *Known Routes:* Other known routes were also taken into account—such as municipal bicycle and pedestrian plans, the Wisconsin Bikeways Project, and Strava heat maps. The Strava heat maps are constructed from data connected from a fitness GPS app used by bicyclists to gather data on their workouts. The maps show the frequency at which roads are traversed by bicyclists using the app.
- *Locations of Industrial Sand Mines and Processing Plants:* Generally roads with heavy truck traffic were avoided, where possible, when choosing on-road bicycle routes. For this reason, the Bicycle Route Network Plan maps show the locations of active and inactive industrial sand mine and processing plants within Dunn County, as well as Chippewa and Eau Claire County, current as of May 2016 (Wisconsin Department of Natural Resources, 2016).

Refining an Interconnected Bikeway and Trail Network

After potential routes were collected and mapped, planners conducted field work, traveling the potential routes. Potential routes were checked for safety, and each was assigned a factor based on curves and hill that affect visibility, which played a role in later route recommendations. The accuracy of some WISLR data, such as the width of paved shoulders, were found to be inconsistent or outdated and corrections were made through field work observations. Alternative routes were found when the potential routes were deemed unsuitable for safety reasons. More potential routes were explored until a cohesive, interconnected draft network plan of bikeways formed. Feedback on the draft network was solicited from the County Advisory Committee as well as the public at the second public open house in the fall of 2018.

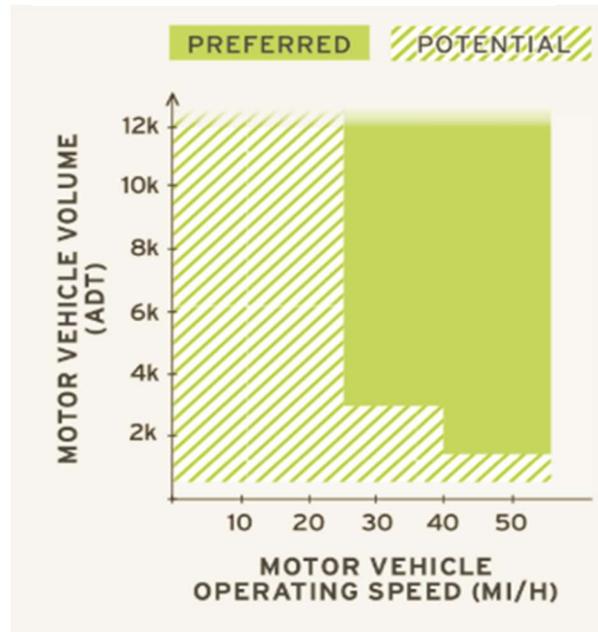
Map 2-5 displays the general bicycle route network for Dunn County. The orange routes are proposed bicycle routes. Note that while these are the proposed bicycle routes, the general network still needs improvements, as discussed in the next section, to fulfill the goals of this plan.

2.6 Bicycle Network Plan Facility Improvements

The last step in the network development process was to identify gaps and barriers in the system. Gaps are segments within the existing system where improved facilities are needed to safely serve bicyclists. To build on the momentum of the planning process, routes without gaps were sought whenever possible. However, good existing routes were not always available due or connectivity issues and barriers such as interstate 94 or very rugged terrain. Using the Federal Highway Administration’s *Small Town and Rural Multimodal Network Design*, the following five categories of bikeway and trail facilities were recommended:

- Minimum Improvements:* Minimum improvement recommendations refer to on-road routes that need low-cost, strategically-placed pavement markings and signage to enhance bicyclist safety and wayfinding. These routes had low traffic volumes and good visibility. Shared use markings, or like sharrows, can increase awareness of bicyclists’ presence and aid in wayfinding (but should only be used on low-speed, low-traffic streets). Other marking, such as lines between the travel lane and shoulder, or lane definition at intersections should be used as appropriate. Signs can aid in wayfinding and raise awareness of the rules of the road.
- Paved Shoulders (4 Foot Minimum):* Paved shoulders that serve as a bicycle accommodation are typically between four and five feet wide. Few roads in the county have paved shoulders, especially at such widths. Roads that have recommendations for four-foot paved shoulders have moderate amounts of travel, lower visibility, or a combination of both in addition to higher speeds. See Figure 2-14. Climbing lanes are a variation that provides a paved shoulder or bike lane in an uphill direction, to accommodate the slower speed of bicycles in this situation. According to the National

Figure 2- 14: Determining the Need for Paved Shoulders

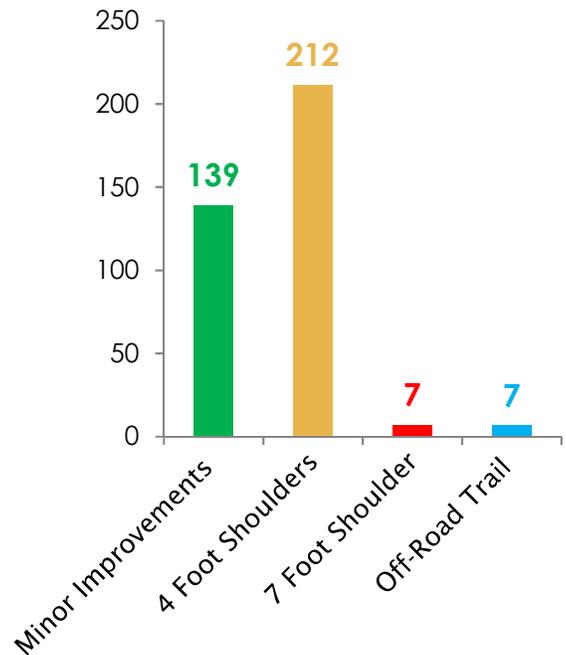


Source: Federal Highway Administration, 2016

Association of City Transportation Officials, there is no standard criteria for installing a bicycle climbing lane, with some communities adding these types of bicycle lanes on roads with grades as low as 1.5 percent and other not installing them unless the road has a grade of five percent or higher (City of Spokane Valley).

- *Wide Paved Shoulders (7 Foot Minimum):* Higher traffic roads, especially those with higher speeds, can be improved for bicycling through the provision of wider (seven foot minimum) paved shoulders. Within the plan, there are several areas with recommendations for paved seven-foot shoulders although these tend to be short segments and the majority of these recommendations are on state highways.
- *Trails:* A shared-use path or trail can be located along a road right-of-way or in an independent right-of-way such as along a stream valley, greenway, or along a utility corridor or abandoned railroad corridor. Trails should be at least 10 feet wide, with two feet clear on either side, or wider where higher use or a mix of uses is expected.

Figure 2-15: Miles of Network Plan Recommendations

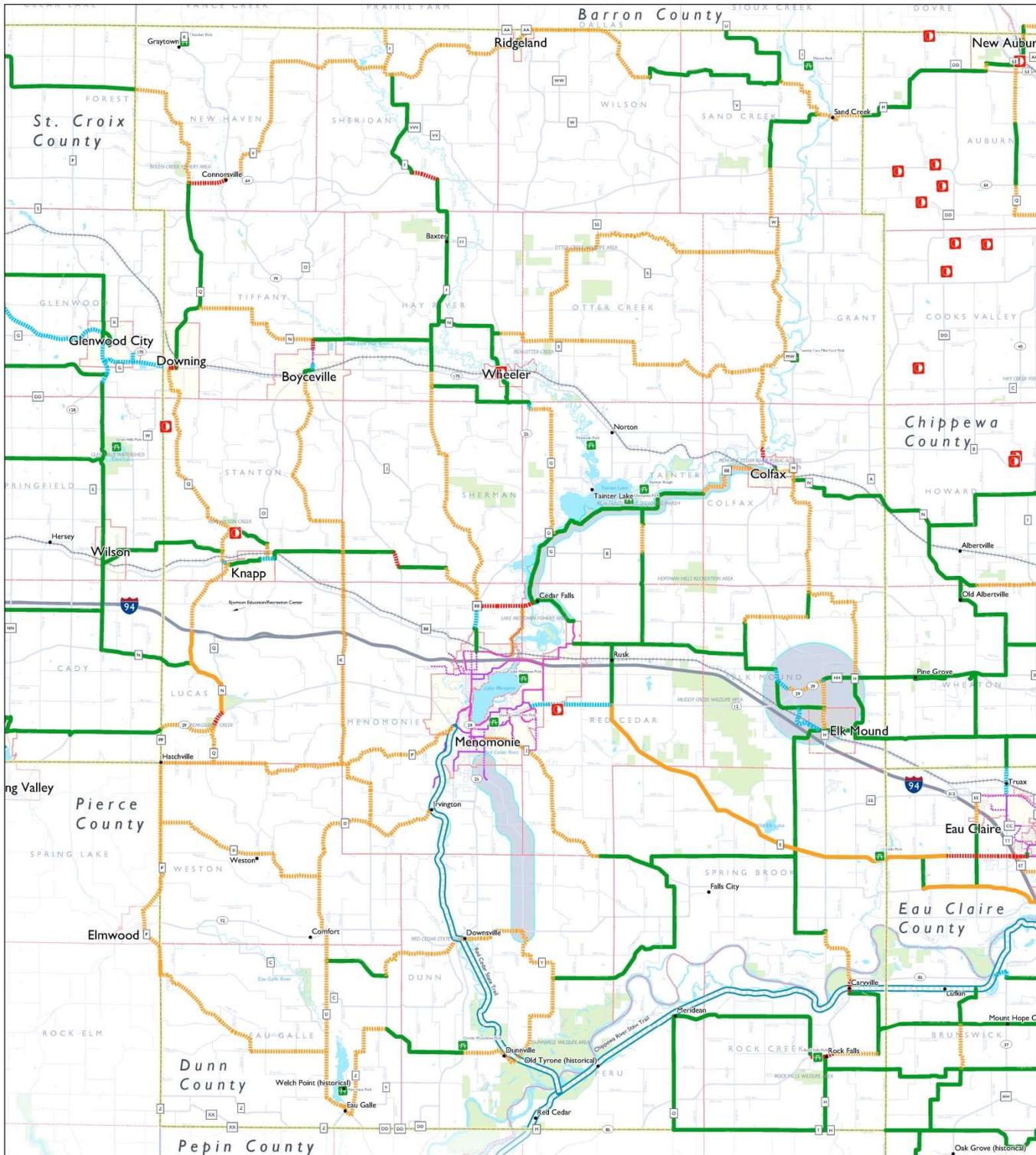


Facility Selection Process

Based on the Federal Highway Administration’s *Small Town and Rural Multimodal Networks Guide*, Map 2-6 identifies routes in green that are currently suitable for bicycling with minimum improvements such as signage, or wayfinding. The yellow and red routes need improvements for safety and rider comfort. Blue lines are long term recommendations for off road trails. Some of these are likely long-term recommendations with significant challenges, such as right-of-way acquisition and/or funding needs. The purple and pink lines represent existing on-road and off road routes as well as proposed routes within local cities and villages.

Map 2- 6: Dunn County Bicycle and Pedestrian Plan Recommended Improvements

Dunn County Bicycle and Pedestrian Plan



REGIONAL BICYCLE & PEDESTRIAN PLAN

DUNN COUNTY, WI

0 1.25 2.5 5 Miles



Data Sources: U.S. Census, Wisconsin Department of Administration, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, WCWRPC
Last Update: November, 2018



- County Park
- Sand mines and processing plants
- DNR Managed Properties
- Area of Further Study

City of Menomonie Routes/Trails

- Existing Bike Routes
- Proposed Bike Routes
- Existing Municipal Trail
- Proposed Trails in Other Plans
- State Trails

Project Recommendations

- Minor Improvements Needed
- Existing 4 Foot Shoulder
- 4 Foot Shoulder Needed
- Existing 7 Foot Shoulder
- 7 Foot Shoulder Needed
- Existing Off-Road Trail
- Off-Road Trail Needed

The yellow and red routes are recommended for the addition of four- and seven-foot paved shoulders respectively. Within the cities and villages, where curb and gutter are the norm, bike lanes are more appropriate. The recommendations of paved shoulders are based on a combination of WISLR average daily traffic counts, visibility ratings and speeds for rural roads. A technical roadways conditions report with average daily traffic counts and visibility for each road segment and paved shoulder recommendations was provided to the Planning and Highway Departments. As traffic counts are subject to change over time and because errors have been found in the WISLR data, traffic counts on roads recommended for four- or seven-foot paved shoulders should be rechecked during the design phase of bicycle facilities.

Wide paved shoulders have many benefits in addition to providing separate stable surfaces for bicyclists and pedestrians. According to the Federal Highway Administration, wide paved shoulders increase safety for motorists by providing space to pull over in case of an emergency. Additionally, according to the Florida Department of Transportation's "Conserve by Bicycle and Pedestrian Study Phase II", it reduces the number of crashes, including head on crashes (15-75% reduction), sideswipe crashes (15-41%), fixed object crashes (29-49%), and pedestrian (walking along roadways) crashes (71%). They also extend the life of the road and decrease maintenance by reducing road deterioration caused by large trucks and farm equipment driving on the edges of the paved surface.

Trails recommendations are based on the context, including urban settings, existing connections, public input, the number of traffic lanes, traffic volumes, and expected types of users. In terms of users, for instance, a county highway that provides access to an elementary or middle school is more likely to be a situation where a trail is deemed suitable, instead of a paved shoulder.

Bikeway and Trail Networks Recommendation Implementation Process

From plan to completion of each bikeway and trail segment will likely take many years. While the process may vary slightly between jurisdictions, it will likely follow the jurisdiction's roadway project development process. This usually includes the following steps:

1. Developing a long-range plan that identifies comprehensive bikeway and trail network needs (this Plan).
2. Identification of individual projects within the Plan (at a minimum identifying the boundaries for each project and a rough time horizon for construction).
3. Budgeting for the project in a multi-year capital improvement plan or otherwise allocating funding for the project (such as by applying for and receiving grant funding).
4. Producing a preliminary engineering assessment to confirm feasibility, refine the alignment, assess basic impacts, and determine right-of-way needs.
5. Acquire any needed right-of-way, complete engineering construction documents, and accept contractor bids.
6. Construction, traffic control, and project completion.

A bikeway project is also more likely to gain traction if it is proposed in concert with an existing roadway improvement project in the capital improvement program or on a road that is due for resurfacing or reconstruction. Board public involvement and communication is essential throughout the process. Outreach to individual property owners should start early in the process, especially as many grants require commitment of easements if a project is not in an existing public right of way.

Short-Term and Long-Term Projects

The Dunn County Highway Department's 5-Year Capital Improvement Plan (CIP) offers a glimpse of possible short term projects. See Map 2-7. While it is unlikely that the funding could be put in place for projects scheduled as soon as 2019, many of the road projects scheduled in the next five years overlap with proposed bikeways on county highways. Because the cost efficiencies achieved with pairing road and bikeway projects, together with the unlikelihood a road receiving

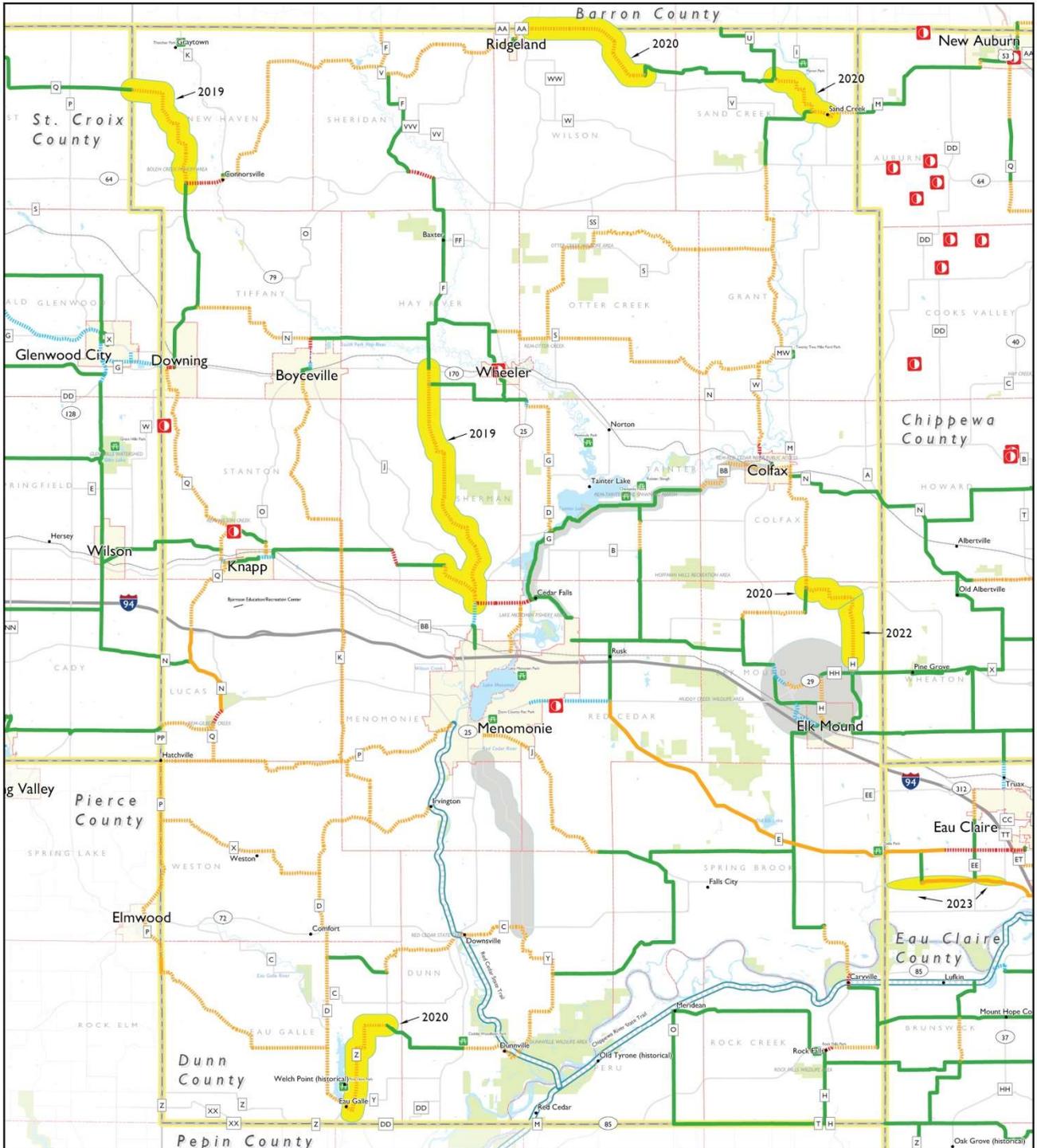
reconstruction or repaving more than once in twenty years, efforts should be made to incorporate the proposed bicycle projects into anticipated roadway projects. A full list of projects can be found in Appendix D

Typical Costs for Bikeway and Trail Facilities

It should be noted that the estimated project costs presented in Table 2-12 are preliminary planning level costs, not the equivalent of an implementation-level engineering cost estimate. Further investigation and discussion with property owners, whose projects are not within a public right-of-way, will need to be pursued before the implementation of the plan's individual recommendations.

The project costs for bikeways and trails are presented on a per mile basis for each recommended treatment. Cost estimates include excavation, grading, milling, pavement marking eradication, base course, surface course, new pavement markings, signs, construction zone traffic control,

Map 2- 7: Dunn County Bicycle and Pedestrian Plan Recommended Improvements and Five Year CIP Plan



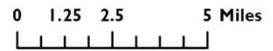
REGIONAL BICYCLE & PEDESTRIAN PLAN

DUNN COUNTY, WI

- Area of Further Study
- County Park
- Sand mines and processing plants
- State Trails
- DNR Managed Properties

Project Recommendations

- Minor Improvements Needed
- Existing 4 Foot Shoulder
- 4 Foot Shoulder Needed
- Existing 7 Foot Shoulder
- 7 Foot Shoulder Needed
- Existing Off-Road Trail
- Off-Road Trail Needed



Data Sources: U.S. Census, Wisconsin Department of Administration, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, WCVRPC

Last Update: November, 2018



and a 25 percent contingency for unique situations, such as drainage crossings or complex intersection treatments. Two types of cost estimates are presented, typical costs for a standalone project, and typical costs for a project that is coordinated with a highway project. Bikeways built in coordination with larger roadway projects typically cost substantially less than those constructed independent of larger project.

Table 2-12: Typical Cost per Mile for Bicycle Facilities		
Facility Type and Implementation Method	Stand-Alone Project Typical Cost per Mile (2018 Dollars)	Coordinated Project Typical Cost per Mile (2018 Dollars)
Minimum Improvements	\$2,000	\$2,000
Pave New or Widen Existing Shoulders to 4 Ft	\$220,100	\$168,800
Pave New or Widen Existing Shoulders to 7 Ft	\$385,100	\$295,400
Construct New 10 Foot Trail	\$515,900	\$496,000

Source: (Bushell, Bryan W. Poole, & Rodriguez, 2013)

2.7 Early Action Priority Corridors

Using input from the online surveys, Wikimapping activity, and public open houses, the advisory committee was asked to determine important pedestrian and bicycle corridors both within and between the counties. The following selection is an analysis of those corridors, including detailed recommendations and cost estimates, with the intent of spurring these projects from the planning phase to the action phase.

The following four corridors were included:

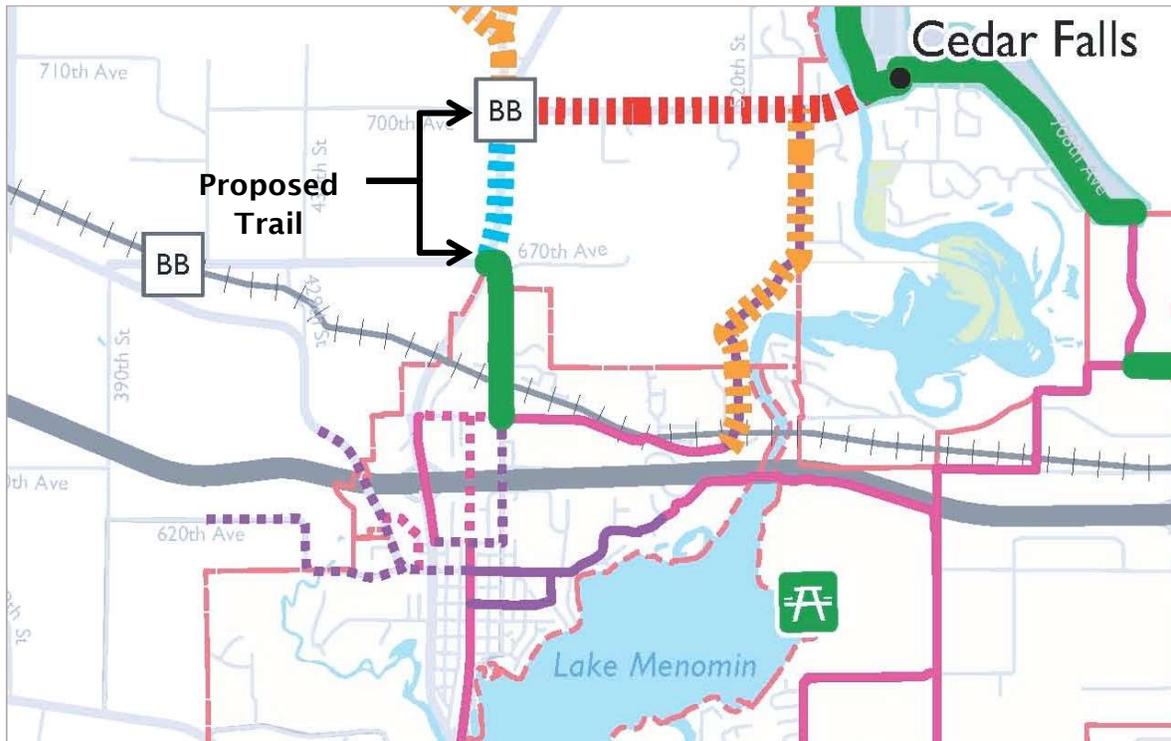
Corridor 1: Trail from 670th Ave, Menomonie to County Highway F

Jurisdictions: State of Wisconsin, City of Menomonie

In close partnership with: Dunn County and the City of Menomonie

Using the new bicycle/pedestrian bridge across I-94 and Wilson Street to connect to the existing trail along Cedar Falls Road, this proposed trail connection would continue north to provide an alternative to busy State Highway 25 to County Highway F, already a commonly used north to south bicycle route.

Map 2-8: Corridor 1: Trail from 670th Ave, Menomonie, to County Highway F



Alignment Description: The proposed trail would lie on the east side of State Highway 25, potentially within the state highway right-of-way. Most of the trail would travel along farm fields as well as adjacent to a local church and banquet center and may require some right-of-way acquisition. This would require some detail consideration for a safe bicycle crossing from the east side of the highway to County Highway F.

Planning Level Cost Estimate: The planning level cost estimate for .76 miles of trail stand-alone project is \$392,100. Outside variables not included in this estimate are the cost of design, potential right-of-way acquisition, or changes to signalized traffic control, or other treatment for the crossing of State Highway 25.

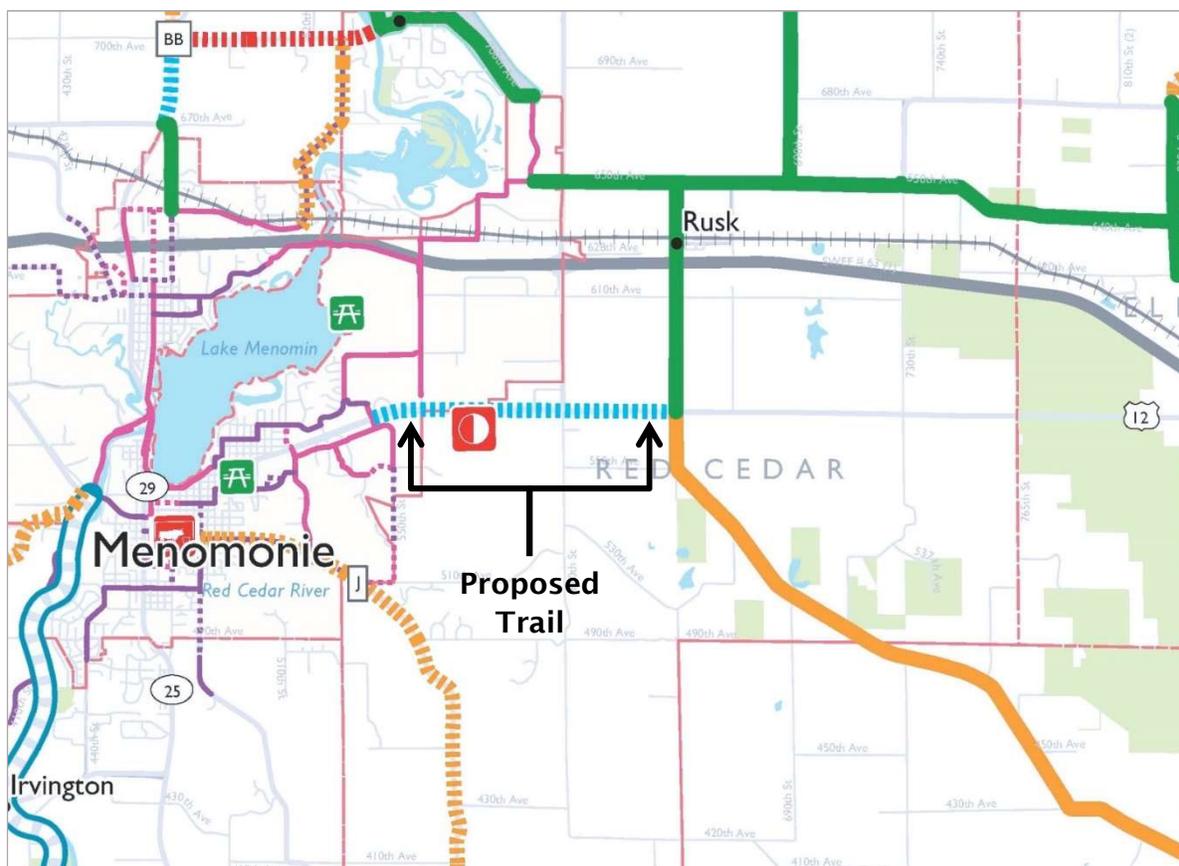
Corridor 2: Trail from Look Out Road/Stokke Parkway to County E along U.S. Highway 12/State Highway 29.

Jurisdictions: State of Wisconsin, Dunn County, City of Menomonie and the Town Red Cedar

Due to its wide paved shoulders and directness, County Highway E is envisioned to be a main bicycle route between Menomonie and Eau Claire. The main gap in this route is the 2.50 miles from the end of the City of Menomonie’s trails on Look Out Road and Stokke Parkway, to County Highway E, south east/west along U.S. Highway 12 and State Highway 29. In addition to the high traffic in the U.S. Highway 12/State Highway 29 Corridor, there is significant truck traffic. A trail is proposed to bridge this gap.

Trail Alignment: The proposed 10-foot paved trail would pick up on the north side of U.S. Highway 12/State Highway 29, near County Hospital Road. The trail would then continue east, with a connection to the Stokke Parkway trail, and

Map 2-9: Corridor 2: Trail from Look Out Road/Stokke Parkway to County E along U.S. Highway 12/State Highway 29



adjacent to U.S. Highway 12, largely on properties owned by the County and the City of Menomonie. A short access road, 571st Street, could be utilized to accommodate a short segment of the trail. From the east end of 571st Street, the trail would continue on the edge of a privately-owned farm field before making a carefully designed crossing at the signalized intersection with County Highway B. The trail would then continue on the south side of U.S. Highway 12 another mile until it reached County Highway E South.

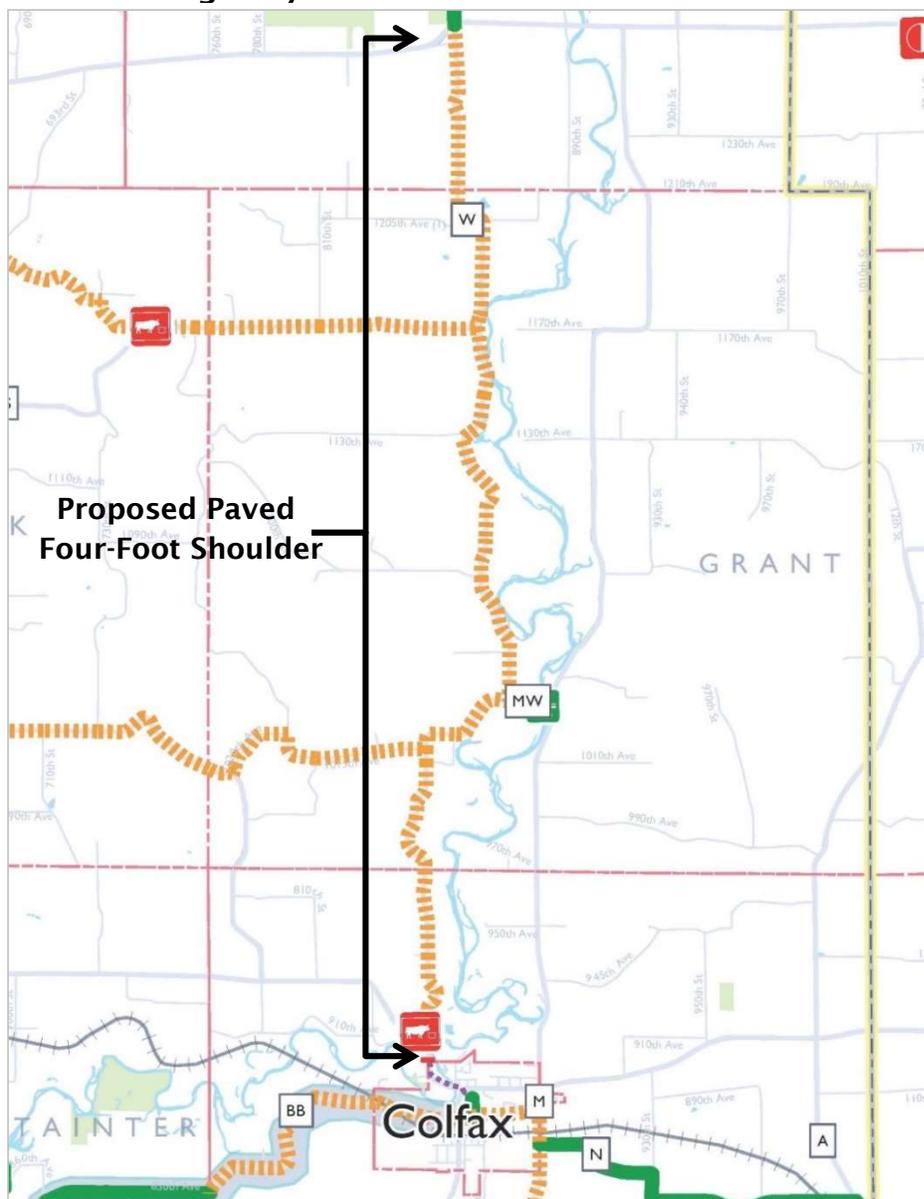
Planning Level Cost Estimate: The planning level cost estimate is \$1,160,775 for 2.5 miles of trail. Outside variables not included in this estimate are the cost of design, right-of-way acquisition, or changes to signalized traffic control.

Corridor 3: Wide Paved Shoulders on County Highway W from Colfax to Sand Creek

Jurisdictions: State of Wisconsin, Dunn County, and Village of Colfax

The Bicycle and Pedestrian Advisory Committee prioritized north/south and west/east routes running through the County and connecting into surrounding counties. With a trail corridor from Menomonie to Colfax recommended for further study, the group sought to prioritize the route from the Village of Colfax to the community of Sand Creek via County Highway W.

Map 2-10: Corridor 3: Wide Paved Shoulders on County Highway W from Colfax to Sand Creek



Road Alignment: A paved seven-foot shoulder is recommended on State Highway 170 for .19 miles, picking up at the north side of the Village of Colfax on a trail proposed along the Red Cedar River in the Village's 2015 Comprehensive Plan, see Appendix B. A four-foot paved shoulder is recommended for 10.5 miles along scenic, but windy, County Highway W to State Highway 64. North from State Highway 64, the proposed route continues along 850th Street and County Highway V, both of which need minimal improvements, except for the last .54 miles from County Highway V into Sand Creek, which would require a four-foot shoulder.

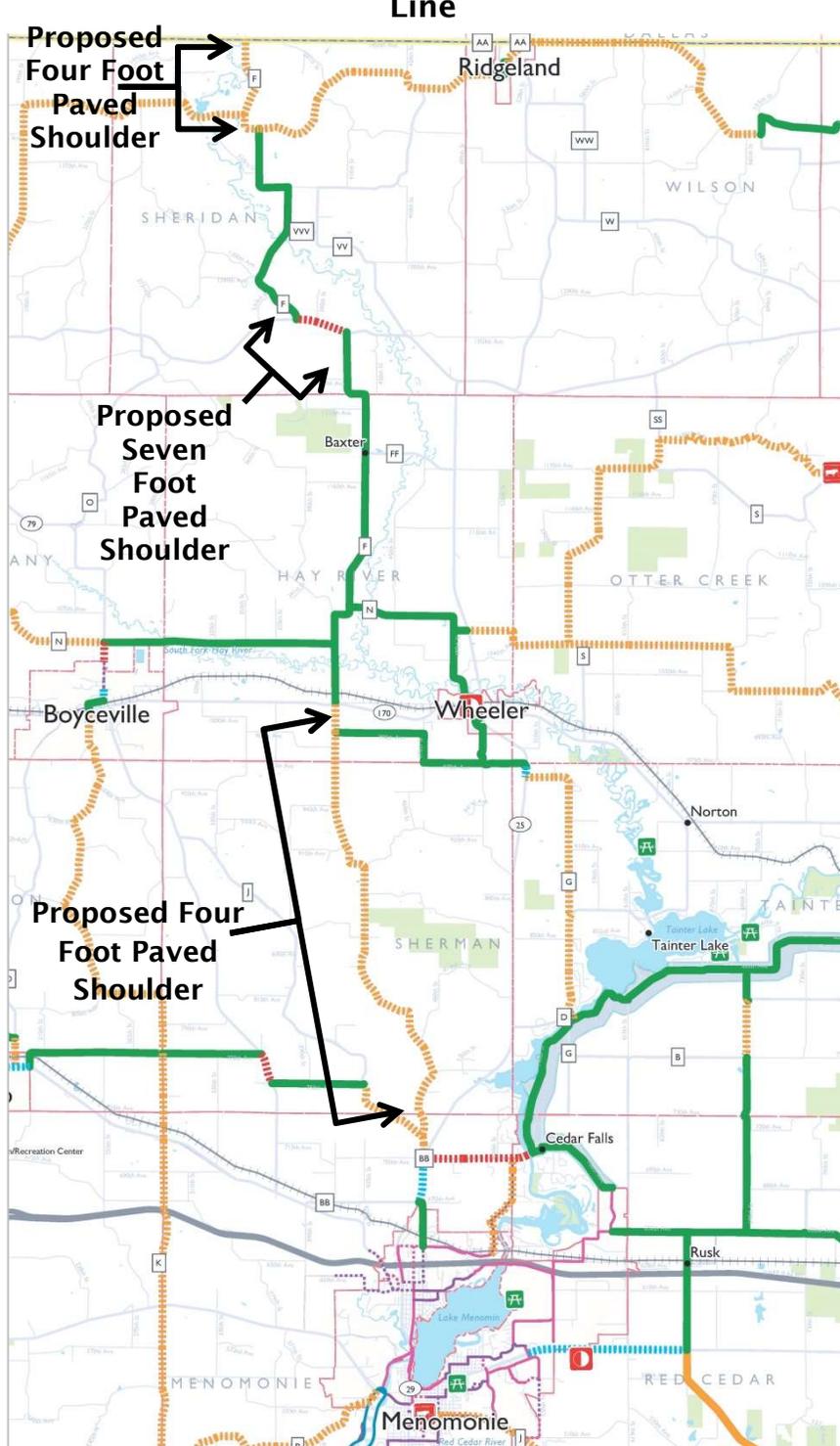
Planning Level Cost Estimate: Currently the Highway Department has no projects scheduled over the next four years on County Highway W. As a standalone project, the county's portion would cost an estimated \$2,429,900. As a part of a roadway project, the project would cost an estimated \$1,863,600.

Corridor 4: Paved Shoulders on County Highway F from State Highway 25 to Barron County Line

Improvements to County Road F would provide a north-south comfortable scenic connection from the City of Menomonie to the villages of Boyceville and Wheeler, as well as the community of Baxter and the Village of Prairie Farm in Barron County. County Highways F and V, where a four foot shoulder is recommended north into Barron County.

Planning Level Cost Estimates: Currently the Highway Department has a project scheduled for 2019 on County Highway F from State Highway 25 north to State Highway 170. A standalone project, not including the state highway project, would cost an estimated \$2,297,800 while a project coordinated with roadway improvements would cost an estimated \$1,762,300.

Map 2-11: Corridor 4: Paved Shoulders on County Highway F from State Highway 25 to Barron County Line



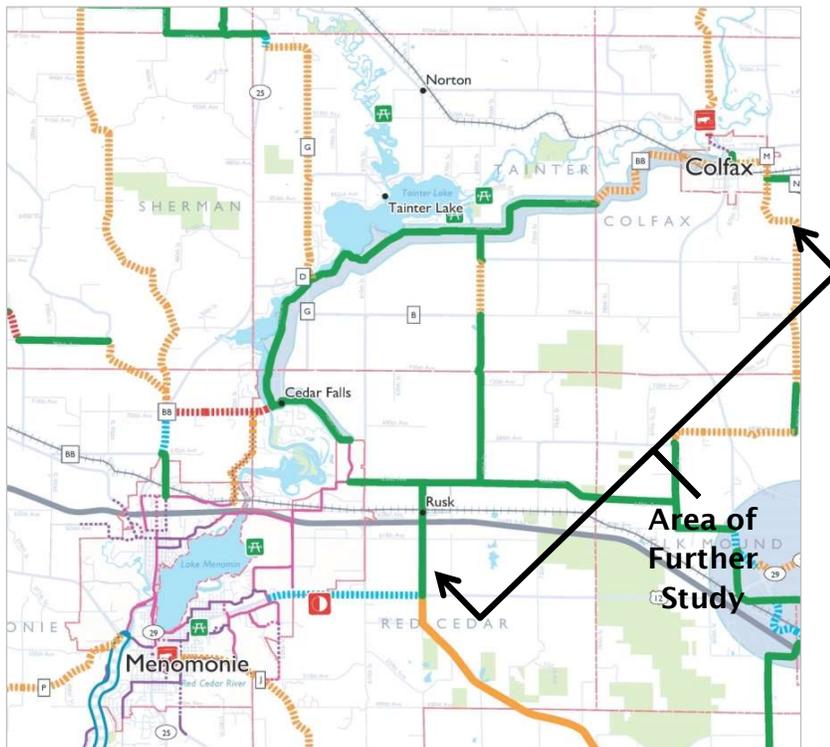
2.8 Areas of Further Study

Two areas in the county stand out as areas that would require further study beyond this plan.

Trail from 59th Street to Colfax

A paved off-road trail extending from the Stokke Trail on the east side of Menomonie to the Village of Colfax was proposed by the advisory committee. This project could ultimately be viewed as an extension of the Red Cedar Trail. Currently, according to the online Stave heat maps, this is a well-traveled on-road route, with bicyclists taking the scenic route on 540th Avenue which follows the east shore of Lake Tainter. The on-road route proposed in this plan needs only minimum improvements and a wider paved shoulder near the Village of Colfax. Because of the density of lake homes in the area, it would be difficult to add a trail in the area, but a trail could be more easily built in the right of way in some areas. The Red Cedar riverbed in the Red Cedar River Savanna State Natural Area may be an appropriate area for the trail, winding through and offering scenic views.

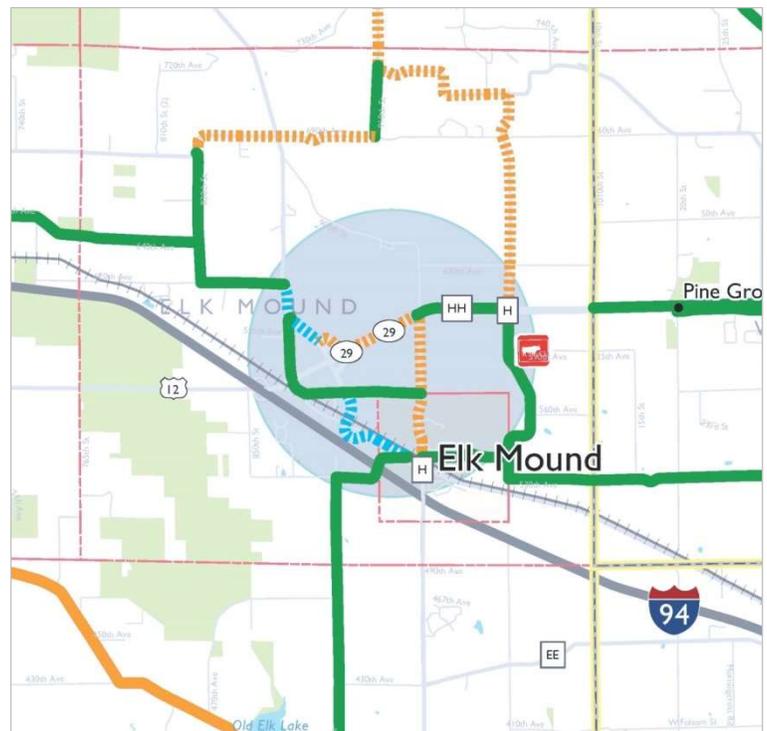
Map 2-12: Area of Further Study 1: Trail from 59th Street to Colfax



Village of Elk Mound

The Village of Elk Mound presents a challenge in trying to connect to the rest of Dunn County. Elk Mound is surrounded by major highways, effectively creating a wall-like barrier around the Village with Interstate 94, US-12, State Highways 29 and 40, and the railroad, as well as the Muddy Creek State Wildlife Area (locally known as the Elk Mound Swamp), and the Muddy Creek Sedge Meadow State Natural Area. There are few roads going west that are suitable for bicyclists either due to distance between designations or unsafe or non-existent crossings. As the map shows, pedestrian/bicycle tunnels/ bridges under some of the major roads and/or trails may remedy the problem, at a pretty large expense, to make connections between Elk Mound and Menomonie or Colfax more reasonable.

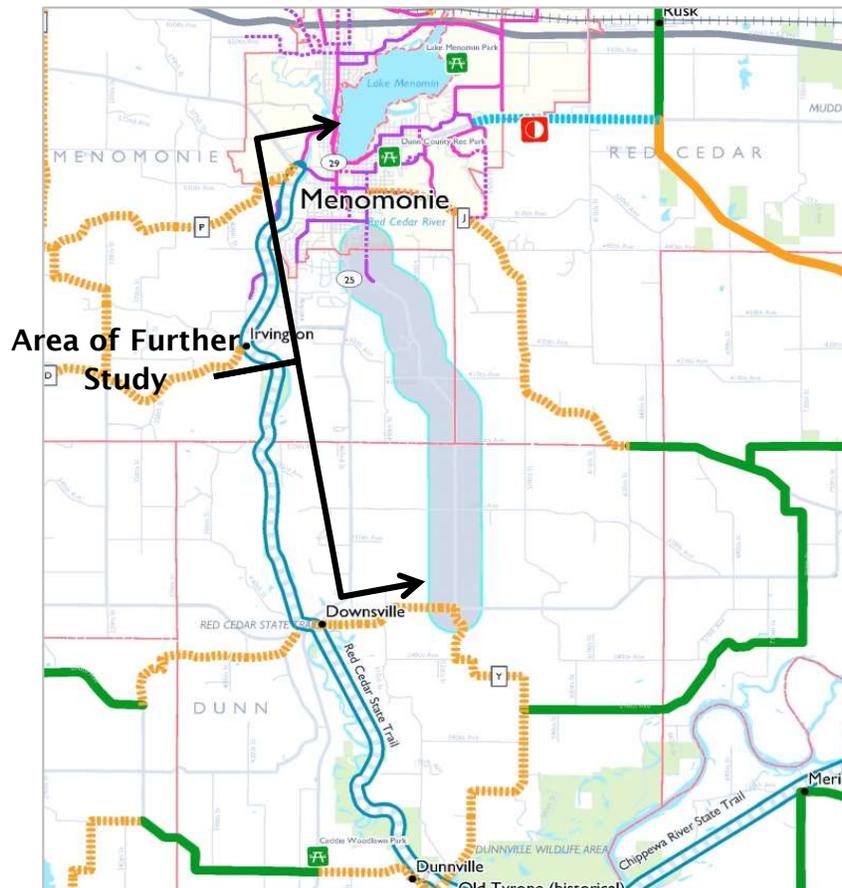
Map 2-13: Area of Further Study 2: Village of Elk Mound



County Highway Y

The addition of a four-foot shoulder on County Highway Y from the City of Menomonie boundaries to County Highway C was proposed. From the city limits to 370th Avenue, WISLR data indicates that the average daily traffic count is over 500 cars per day, while Dunn County Pathways Plan put the count at 1,000 cars per day. The visibility rating recorded by both the Pathways Plan and field work conducted for this plan was poor. This section of highway would be recommended for a wider paved shoulder. However, the traffic counts in this area need to be checked before a four-foot paved shoulder or a seven-foot paved shoulder is recommended. From 370th Ave to County Road C, only minor improvements are recommended; however, the County may want to consider wider paved shoulders the entirety of County Highway Y for consistency.

Map 2-14: Area of Further Study 3: County Road Y



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Part 3: Implementation Manual

3.1 Funding & Implementation Strategy

Extensive partnerships, collaborative conversations, effective funding plans, and public outreach and education are essential to the successful and timely implementation of this Plan. While Part 2 of the County Bicycle and Pedestrian Plan focused on the development of a countywide bicycle route network, Part 3 presents a comprehensive strategy to implement the network plan.

A majority of the network plan requires only minor enhancements, such as route signage or wayfinding. The remainder of the plan calls for more substantial improvements. This section proposes a strategy for coordination, implementation, funding, and maintenance of improvements at both the county and the municipal level.

Foundation of Strategy

Relationship with Plan Goals

Part 1 of this Plan outlined the goals and objectives put forward by the county advisory committee and the public. These goals and objectives aim to increase safety, create educational campaigns, promote existing pedestrian and bicycle infrastructure, improve wayfinding efforts, build support among local governments, and “close gaps” and overcome manmade and natural barriers. Many of the policies and programs identified here directly correspond to the goals and objectives outlined by the advisory committee and public input.

Strategy Objectives

Over a year’s long planning process, several key strategy themes emerged based on conversations with key stakeholders:

1. *Consistent and timely implementation:* While some projects are likely outside of the 15-year timeframe of this plan, much of the plan could realistically be implemented within the first few years.
2. *Enhanced inter-and intra-agency coordination:* This refers to relationships between the county, municipalities, and WisDOT, as well as between individual county departments.
3. *Adequate Funding:* Using a combination of grants, capital improvement plans, and annual budgets to fund infrastructure projects.

4. *Connectivity*: Many of the plan’s priorities seek to bridge as many “gaps” in the existing systems or to remedy short “problem areas” in what would otherwise be mostly low-volume pleasant rides.
5. *Separation from motorized traffic*: While many experienced bicyclists are comfortable riding with traffic in most circumstances, the public expressed preference for separation from motorized traffic in the form of bicycle lanes, wide paved shoulders, or trails.
6. *Adequate maintenance*: This refers to ensuring that infrastructure is maintained for appropriate use year-round.

Additionally, two other objectives are essential to realizing the Bicycle Route Network plan’s implementation: coordinating bikeway projects with roadway projects and reducing reliance on grant programs.

Coordinating Bikeway Projects with Roadway Projects

The cost of bicycle infrastructure improvements can be greatly reduced if done in coordination with other road improvement projects due to the economies of scale. As such, identifying road construction projects in the county road five-year capital improvement plan, or municipal plans, and matching them to bicycle infrastructure projects is one way to minimize costs. See Map 2-7 for how the county highway department’s five-year plan overlaps with the recommendations for the Bicycle Routes Network plan. It should be noted that trail projects are often funded and executed independent of road projects.

Reducing Reliance on Grant Programs

Often grant programs, such as the Transportation Alternatives Program (TAP), are seen as the primary source of funding for bicycle and pedestrian infrastructure programs. However, bicycle and pedestrian infrastructure grant programs are typically limited in number, very competitive, and programs or their applications have a tendency to change with new legislation and administrations. Furthermore, it would be impossible to implement a majority of the recommendations in this plan in a timely manner if the county and municipalities solely relied on grant funding opportunities. Rather, the majority of these recommendations will need to be funded with county and municipal resources.

There are a number of alternative sources of funding likely available in the community, such as philanthropic foundations, donations, and social group

projects (such as a local Lion’s Club sponsoring a bicycle route). Efforts should be made to secure some funding for standalone projects from these sources.

Activating the Strategy

Making the Case for Investing in Biking and Walking

The purpose of building bicycle infrastructure is to increase safety and to recognize the benefits of active transportation—including improved health, a cleaner environment, improvements in livability, and economic growth. Discussing the benefits of bicycling and walking, encouraging active transportation, and bicycle and pedestrian safety are just as important to achieving those benefits as building the bicycle route network. Furthermore, these actions are essential to the implementation of the plan.

Often communities discard bicycle and trail projects due to the expense, focusing on “how much will this cost?” rather than asking “what is this worth?” The worth of such projects is in the improved health and quality of life for residents, economic benefits such as increased retail sales, higher property values, and better workforce attraction and retention, in addition to local government and individual household savings. Projects may also lead to fewer lives lost in the community due to increased awareness and safety. The *Bicycling and Walking in the U.S.: 2012 Benchmarking Report*, funded by the Centers for Disease Control and Prevention, found that as much as \$11.80 in benefits can be gained from every \$1 invested in bicycling and walking. It is important for advocates, citizens, and other stakeholders to build a concerted marketing effort to communicate the value of the plan and take this message to local officials and the broader community.

Intergovernmental Coordination

The planning process revealed the desire to improve communication and coordination of bicycle and pedestrian policies, activities, and resources between municipalities and with the County. Several possibilities were presented to the advisory committees:

- A bi-annual email newsletter to facilitate an ongoing conversation about bicycle and pedestrian events and infrastructure projects at the municipal, county, and state levels in the area. The newsletter would distribute information about bicycle and pedestrian events, trainings, grants, and important local meetings. County staff would likely be responsible for distributing the email newsletter, but the context could

be developed by local bicycle groups, advocates, and municipalities. An example of an email newsletter can be found in Appendix E.

- An annual regional conference to coordinate projects and provide training to the four counties that make up a regional bicycle/pedestrian plan. The conference could rotate between the four counties of Chippewa, Dunn, Eau Claire, and St. Croix and would focus on regional coordination, training on grant applications, design practices, and tourism strategies and actions. Responsibilities for planning, coordination, and hosting the event could be taken in turns by the countywide bicycle and pedestrian committees. Representatives from all the municipalities and counties, as well as the state agencies-such as DOT and DNR- would be invited to attend.
- A Countywide Bicycle and Pedestrian Committee to oversee and implement the County Bicycle and Pedestrian Plan. The committee would be made up of multiple municipal and county departmental representatives and would provide a forum to coordinate plans and decide on bicycle projects in tandem with upcoming road improvement projects. The County Bicycle and Pedestrian Committee could:
 - Work with the Highway Department and collaborate on the five year Capital Improvement Plan process to ensure that when a roadway project is proposed on a recommended bicycle route that the recommended improvements are implemented.
 - Raise municipal awareness of the plan by encouraging municipalities to pass resolutions to support the plan and implement projects that are on municipal roads.
 - Contribute to and ensure the distribution of the biannual bicycle and pedestrian email newsletter.
 - Be aware of upcoming state highway projects that fall along recommended bicycle routes within the county and coordinate with municipalities to submit resolutions of support for plan recommended bikeway projects in conjunction with such projects.

- Ensure the update of the bicycle route and trail online and/or static map(s) as recommended routes are signed and recommended improvements are completed.
- Coordinate with the other counties to host the annual bicycle and pedestrian conference.

Proposed Strategy for the County

The following section outlines a recommended method to fund and implement the bikeway and trail recommendations of this Plan in the County.

1. Plan Adoption and Support:

It is anticipated that the County Board will adopt the County Bicycle and Pedestrian Plan by resolution and pledge to contribute to its implementation within county jurisdiction by pursuing grants, local contributions or including recommended bicycle facilities in road projects as opportunities arise. The Plan recommends the formation of a countywide Bicycle and Pedestrian Committee that would work with the Highway Department, in coordination with the Public Health Department, Facilities & Parks Division, and Planning and Zoning Departments, to assist in the implementation of the Plan, specifically along the county highway system.

This Plan recognizes and explains that the recommended improvements that fall within municipal rights-of-way continue to be the responsibility of each municipality. However, the foundation for successful and timely plan implementation is to continue fostering healthy partnerships to meet a common goal for developing the bikeway and trail systems. As such, the County may choose to assist municipalities in funding minor enhancements to bikeways, as the budget allows (such as contributing to matching grant funds, installing bike route signs along town roads, or coordinating joint purchase of signage.)

A commitment to implement this Plan should revolve around adopting a more integrated, multi-modal approach to transportation and land use planning. This can be made possible through improved inter-departmental, inter-committee, and staff/board communication, coordination, and alignment within the County government that addresses and eliminates disconnects between countywide transportation and land use planning and the development and implementation of transportation projects. The County should research its legal options for either requiring or incentivizing new developments to plan for and accommodate

alternative transportation facilities. This could include multiple bicycle and pedestrian access points and adequate easements for future sidewalks or paths along thoroughfares in order to increase connectivity between and within subdivisions and provide alternatives to walking and biking along busy roads.

2. Encouraging Municipal Support:

The County encourages municipalities to pass resolutions of support for the Plan and to commit to assisting in its implementation as opportunities arise. Municipal staff and elected officials are encouraged to consult the Plan, locally adopted bikeway and trail plans (if available), and/or representative stakeholders prior to making decisions regarding transportation investments.

Many of the Plan’s recommendations fall within municipal rights-of-way. If municipalities want recommendations implemented within their communities, they will be responsible for securing funding for those projects.

3. Projects Funded as Part of Roadway Projects:

For cost efficiency, the Plan recommends that the County fund on-road bikeway improvements on county highways from the same funding source as the larger roadway projects and plan for bikeway improvements in their five year capital improvement plan, whenever possible. When the County engages in striping, paving, reconstruction, and construction activities, it anticipates designing, funding, and constructing any on-road improvements recommended in the Plan as part of the overall project, up to 20 percent of the project budget. This includes projects such as standard-width (typically 4-foot) paved shoulders, bike lanes in urban and transition areas, signage along designated routes, and pavement markings. Any costs not eligible from other grant or highway funding source, can come from the new separate budget line item.

Because the State of Wisconsin considers shoulders and bike lanes to be part of the roadway, the use of the County Road and Bridge Fund for such improvements on the County highway system is in accordance with Wisconsin Statute 83.065 (“Expenditures from said fund shall be made only for the purposes of constructing and maintaining highways and bridges...”).

4. Projects Funded by Separate Budget Line Items:

Separate budget line items are recommended for bikeway and trail improvements that are not funded as part of roadway projects—such as stand-alone trail construction, installation of signs and pavement markings, sidewalks that are not

special assessed, costs for on-road improvements not covered by same-source funding, right-of-way or easement acquisition, etc.

The Plan recommends that the County establishes an annual budget line item (separate from the County Road and Bridge Fund) for bicycle and pedestrian infrastructure improvements, identifying projects to be funded each year and establishing a process to do so, and setting an annual budget level. Moneys from this fund should be limited to the purpose of designing, constructing, and repairing on-road bikeway and off-road trail improvements recommended by the Plan, as well as additional bicycle and pedestrian-specific infrastructure improvements recommended by staff.

5. *Sources for Additional Revenue:*

Budgeting for the line items described above will require diverting funding from other budget activities or increasing revenues. Potential sources for additional revenues fall into four categories:

- *Grant programs and charitable contributions:* Transportation Alternatives grants, Recreational Trail Aids Program grants, contributions from private and non-profit foundations, or donations from individuals.
- *User fees:* Reallocate revenues from existing user fees (e.g., parking meter revenues) or create new user fees (e.g., wheel tax, annual or daily trail passes or bicycle registration fees¹).
- *Property taxes:* Utilize increased revenues resulting from new construction and increased valuations or increase the mill rate slightly.
- *Sales Tax:* Utilize a portion of the half-cent (0.5%) sales tax allocated to the County.

It is important to recognize that fuel tax and motor vehicle registration fee revenues are generally only spent on state highway projects, and—due to stagnant fuel tax rates and revenue diversion at the state level—these user fees generally pay for less than half the cost of roadway projects. The other half of the funding for state highways—and almost all county and municipal roadway projects—comes from the general fund, which is funded by sales, property, and income

¹ It is important to recognize that many cities and states that have required bicycle registration fees or licenses in the past, and many that have considered implementing such programs, have abandoned the idea because the administrative costs far exceed the revenues generated by the programs.

taxes. The County residents pay these taxes at the same rates, regardless of whether they walk, bike, or drive.

Recommended Municipal Funding Strategies

Projects Funded as part of Municipal Roadway Projects

The County encourages villages, cities, and towns to fund on-road bikeway improvements on municipal streets and roads from the same funding source as the larger roadway projects, in order to facilitate and reduce the cost of implementation of on-road bikeways, sidewalks, and trails in municipal rights-of-way. This approach can apply to bikeways and trails recommended by this Plan as well as to basic bicycle and pedestrian accommodations that may be required by local Complete Streets policies.

Complete Streets policies can be adopted by individual municipalities to facilitate the incorporation of context-sensitive bicycle and pedestrian elements when city, village, or town roadways are constructed/reconstructed. Each municipality is encouraged to adopt a Complete Streets policy. A model policy is provided on Section 3.4.

Projects on State Highways

In order to ensure that the Plan's recommendations along state highways are implemented and funded as part of state highway projects, each municipality will need to coordinate with the Wisconsin Department of Transportation and adopt a resolution of support for bicycle and pedestrian facilities (in accordance with WisDOT requirements) for each individual roadway projects. A model resolution of support is provided on Section 3.4.

Municipal Budget Line Items

The County encourages municipalities to establish annual budget line items for bicycle and pedestrian infrastructure improvements. This funding should ideally be used for local shares of costs for implementing the Plan's recommendations and for local improvements not specified by the Plan.

Municipal Development Requirements

In addition to funding improvements from county and municipal budgets (the primary manner of implementation), implementation of some of the Plan's

recommendations can be facilitated by development projects. Examples include requiring new development and redevelopment to dedicate easements, pay municipal impact fees, or construct specific improvements.

Municipalities are encouraged to incorporate provisions in their subdivision and zoning ordinances that require new developments to include multiple bicycle and pedestrian access points and sidewalks or paths (or adequate right-of-way for future sidewalks) along thoroughfares in order to increase connectivity between neighborhoods and provide alternatives to walking and biking along busy roads.

In addition, municipalities are encouraged to consider expanding existing (or adopt new) impact fees for new development to expand local multi-modal transportation networks to meet the increased transportation demand that accompanies new development.

Sustainable Maintenance Strategy and Program

The League of American Bicycling has found that agencies with successful maintenance strategies are those that consider bicycle and pedestrian infrastructure in the same light as other infrastructure systems—as a necessary priority based on the community’s value of the service the infrastructure provides. It is recommended that the County works with municipalities—potentially via the countywide Bicycle and Pedestrian Committee—to cooperatively implement a strategy for annual maintenance needs and responsibilities that is feasible, time-efficient, and cost-effective. This should include guidelines for necessary agency commitments (such as maintaining pavement markings and signs, plowing, removal of winter maintenance debris (e.g., sand) or crash debris cleanup from intersections and paved shoulders each spring, sweeping trails of leaf fall and other debris, etc.). Although it is not at a county-scale, the City of Madison has an exemplary comprehensive maintenance strategy that defines departmental responsibilities and maintenance intervals.

On-Road Bikeways

The maintenance of on-road bikeway facilities (including plowing, sweeping, and striping) should be the responsibility of the same agency that maintains the rest of the roadway and should be funded from the same maintenance budget. For the County, this means the Highway department should be responsible for maintaining paved shoulders, bike lanes, and advisory bike lanes on county highways. For city and village streets, as well as towns that maintain their own

roadways, it should be the responsibility of each municipality to maintain bikeways on its roadways.

Maintenance of paved shoulders and bike lanes should be year-round. This means plowing or removing snow from the full width of paved shoulders and bike lanes identified in the Plan in accordance with Chapter 6 of the WisDOT Highway Maintenance Manual, generally within 48 hours from the end of a snow event. Shoulders and bike lanes should be kept clear of debris, free of cracks and potholes, and swept as needed. All intersections and paved shoulders should be swept of debris following the last anticipated snowfall each spring—pending available resources—with priority given to intersections and paved shoulders that are part of the countywide bikeway network.

Paths

The responsibility for maintaining paths can vary based on path location and maintenance type (patching, striping, mowing, litter removal, etc.).

Assigning Responsibilities by Path Location

Responsibility can be assigned based on who owns the path (defined by who paid for it or whose right-of-way it is within), which municipality it is within, or by negotiation in order to maximize efficiency and minimize cost. Using a path along a county highway as an example, several options exist:

- *By right-of-way:* the path is within County right-of-way or an easement obtained by the County, so the path is maintained by the County
- *By jurisdiction:* the path passes through three municipalities, so each one maintains the section of the path within their boundaries
- *Case-by-case negotiation:* one municipality along the path is capable of maintaining the entire corridor; the county and other two municipalities reimburse the maintaining municipality for their share of the maintenance
- *Single maintainer:* assign maintenance responsibilities of all paths within the county to a single organization; this organization could be the County or one (or more) special maintenance districts funded by local contributions, property taxes, foundations, etc.

Assigning Responsibilities by Maintenance Type

Different organizations are best suited to certain types of maintenance. Major maintenance (such as pavement patching, crack sealing, and striping) are best left to groups experienced with pavement maintenance, such as the Highway department and municipal public works departments. Tasks such as mowing and snow removal along paths can be performed by groups that typically perform similar work in parks or other public properties. Day-to-day maintenance such as litter removal and general upkeep can be assigned to volunteer organizations, such as a “Friends of the ____ Trail” groups, scouts, service organizations, and other non-specialized labor. All of these tasks can also be contracted out, but should be overseen by appropriate county or municipal staff.

Table 3-1: Example Assignment of Maintenance Responsibilities			
	Major maintenance Patching, crack sealing, striping, sign replacement on an as-needed basis. All paths should be inspected biannually for maintenance needs and to ensure ADA compliance.	Intermediate maintenance Mowing on a biweekly or monthly basis, tree trimming as needed to maintain clearances, snow plowing of priority paths within 48 hours of snowfall.	Day-to-day maintenance Daily or weekly volunteer patrols with ongoing litter removal. Groups should report pavement, signage, and vegetation maintenance needs to appropriate agencies.
Paths along county/state highways	Highway department*	Parks division*	Volunteer groups
Paths along municipal roadways	Municipality	Municipality	Volunteer groups
Paths in independent alignments (e.g., former railroad)	Parks division	Parks division*	Volunteer groups

Table 3-1 shows an example of how maintenance responsibilities could be assigned by location and by maintenance type. Adequate funding will need to be allocated to each of the groups involved in maintaining the path system.

3.2 Funding Sources

Finding funding sources to finance bikeway and pedestrian improvements is a key issue that communities confront when implementing bicycle and pedestrian plans. There are many bicycle and pedestrian funding options in addition to local funding, however, many have limitations and deadlines that make a project more, or less favorable for funding from that source. Additionally, some sources are not directly bicycle or pedestrian related but can be applied to bikeway and pedestrian projects that have a connection to historic preservation or public health.

Federal Funding Administered by State Agencies

The Wisconsin State Department of Transportation and Department of Natural Resources administer several federal grants for bicycle and pedestrian projects. Note that federal sources of funding are likely to change names or be discontinued as Congress authorizes new transportation funding bills. The current federal transportation act, the FAST Act, was signed in 2015 and is authorized for five years. Therefore, county and community leaders need to be aware that grant programs are subject to change over the lifetime of this plan and that they should contact the Wisconsin Department of Transportation for guidance and questions about currently funded programs. Federal funding sources that are relevant to the County and its individual communities are summarized below.

Surface Transportation Program (STP)-Urban Program & Rural Program: The purpose of the Surface Transportation Urban and Rural Programs are to improve federal-aid-eligible highways inside and outside of urban areas, primarily county trunk highways. It provides funding to improve roads in rural areas that are functionally classified as principal arterial, minor arterial or major collector. This program may fund bridge projects on any public road, transit capital projects, and intra-city and intercity bus terminals and facilities. Funds from this program may also be used for non-construction projects such as maps, brochures, and public services announcements related to safe bicycle use and walking but funding of these types of projects are rare, with the funds almost exclusive going to roads. Rural minor collectors are not eligible, nor are local improvement projects on connecting highways. This program is seldom used for bicycle and pedestrian projects, yet it is a potential source of funding for hard to finance bicycle and pedestrian infrastructure. Up to 80 percent of project costs can be covered by STB with the remaining 20 percent to be matched by the local community. In calendar year 2019, WisDOT will solicit for the 2019-2024 program cycle and repeat the

same process, beginning with a review and adjustment opportunity for state fiscal years 2020, 2021 and 2022.

Transportation Alternatives Program (TAP): TAP is the State of Wisconsin's program for what is now the federal TA-Set Aside Program, a part of the FAST Act. These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school plans and projects, and community improvements such as historic preservation and transportation facilities. Local entities eligible to sponsor a project include local governments, regional transportation authorities, transit agencies, natural resource or public land agencies, and school districts or local education agencies. Project sponsors are required to provide matching funds of 20 percent of the total project cost. Funding cycles are biennial and Wisconsin distributed a total of \$14,050,000 during the 2017-19 TAP funding cycle. The next call for proposals is expected in the fall of 2019, with applications due in early 2020.

Highway Safety Improvement Program (HSIP): The Highway Safety Improvement Program (HSIP) funds highway safety projects at locations that have a high crash history. Emphasis is on low-cost options that can be implemented quickly. The overall objective of HSIP is to develop and implement, on a continuing basis, stand-alone safety projects designed to reduce the number and severity of crashes on all streets and highways (state and local). This program includes the High Risk Rural Roads subprogram which funds projects for construction and operational improvements on county rural major and minor collector roads. Typical eligible spot projects include intersection safety improvements, straightening isolated curves or hills, improving sight distance, access modifications, and installing signs, pavement markings, and delineators. The federal funding ratio for HSIP funds is usually 90%, requiring a 10% match of state and/or local funds.

BUILD Transportation Program: Major bicycle and pedestrian projects could potentially be funded under the highly competitive, BUILD Transportation Program, which replaces the TIGER Discretionary Grants Program. FY 2018 BUILD Transportation grants are for investments in surface transportation infrastructure and are to be awarded on a competitive basis for projects that will have a significant local or regional impact. BUILD funding can support roads, bridges, transit, rail, ports or intermodal transportation. Projects for BUILD will be evaluated based on merit criteria that include safety, economic competitiveness,

quality of life, environmental protection, state of good repair, innovation, partnership, and additional non-Federal revenue.

A greater share of BUILD Transportation grant funding is intended for projects located in rural areas that align well with the selection criteria than to such projects in urban areas. Rural needs are highlighted in several of the evaluation criteria, including support for rural broadband deployment where it is part of an eligible transportation project. In 2018, the City of Eau Claire received five million dollars to construct a transit transfer center in the downtown and to purchase four new buses to be used by the Eau Claire Transit system from the TIGER program.

Associated Transit Improvements (ATI): The Federal Transit Administration (FTA) supports bicycle access improvements through its ATI program, which makes grant funding available through many of FTA's formula and discretionary programs, whether as part of a larger transit project or independently. The grant programs most pertinent to the County include: Enhanced Mobility of Seniors and Individuals with Disabilities (S. 5310), which could fund bicycle improvements that provide access to an eligible public transit facility, funded at 80 percent federal share; and Formula Grants for Rural Areas (S. 5311), which includes within its eligible projects capital and planning for bicycle routes to transit, bike racks, shelters and equipment for public transportation vehicles. Investments in bicycle access to public transportation can help communities promote the use of transit and provide better access to the public. Bike routes around stations increase the number of people riding their bikes to public transportation and make the streets safer for both pedestrians and cyclists. Linking bicycling and public transportation also provides a greater variety of transportation options while reducing costs and space requirements since building bicycle parking at transit facilities can be much less expensive and require much less space than automobile parking. For areas served by urban transit systems, the S. 5307 program can be similarly utilized in coordination with the transit system. These funds are managed by WisDOT.

Recreational Trails Program (RTP): Municipal governments and incorporated organizations are eligible to receive reimbursement for development and maintenance of recreational trails and trail-related facilities for both motorized and non-motorized recreational trail uses. Eligible sponsors may be reimbursed for up to 50 percent of eligible project costs. Funds from this program may be used in conjunction with funds from the state snowmobile or ATV grant programs, and, with Knowles-Nelson Stewardship development projects.

Federal Lands Transportation Program (FLTP) and Federal Land Access Program (FLAP): The Office of Federal Lands Highway (FLH) manages several programs that can be used for a wide range of transportation project planning and construction, including the development of bicycle and pedestrian facilities, adjacent to or on federal lands. The FLTP is a performance management-based program with annual performance measured against baseline conditions and set goals. Partners include the National Park Service, Fish and Wildlife Service, USDA Forest Service, Bureau of Land Management, and US Army Corps of Engineers. The FLAP emphasizes access to and through Federal Lands for visitors, recreationalists, and resource users, with an emphasis on high-use recreation sites and economic generators. The Federal Lands Planning Program is funded through a maximum set-aside of five percent from FLTP and FLAP to carry out the long-range system-wide transportation planning and coordination, asset management, data collection activities for Federal Lands, including, tribal transportation facilities, and other federally owned roads open to public travel.

Community Development Block Grant (CDBG)-Public Facilities: The Community Development Block Grant-Public Facilities (CDBG-PF) program is a federal formula-allocated grant program under the Department of Housing and Urban Development (HUD) which can be used for the benefit of bicyclists and pedestrians in eligible communities. The Wisconsin Department of Administration-Division of Energy Housing and Community Resources administers the annual state Community Development Block Grant Program for local governments that do not receive an annual allocation directly from HUD. In 2018, the CDBG-PF program had \$10 million available to assist local governments to expand and improve public infrastructure and facilities projects critical to community vitality and sustainability, including streets, sidewalks and trails. Eligibility is based on the HUD estimates of low to moderate income households in a community. Municipalities eligible in Dunn County include Downing, Knapp, Menomonie, Ridgeland, and Wheeler.

State Funding Sources

The State of Wisconsin currently has no programs dedicated to funding bicycle and pedestrian projects. The Knowles-Nelson Stewardship Program has funding for trails, but only for the acquisition of property for said trails. Usually stewardship funds have been used to purchase long segments of properties for trail use.

Local Funding Sources

Generally, most of the standalone projects will need to be funded through a municipality or county's general funds, if grants are not secured or available. If projects have longer life spans, they may also be financed through general obligation debt in the same manner that many street or other infrastructure projects are financed.

One other possibility to finance bicycle and pedestrian infrastructure is through Tax Incremental Financing (TIF), a financing option that allows a municipality to fund infrastructure and other improvements through property tax revenue of newly developed property. A municipality identifies an area, the tax incremental district (TID), as appropriate for a certain type of development. The municipality identifies projects to encourage and facilitate the desired development. Projects can include roads with bikeways, sidewalks, or trails. Then, as property values rise, the municipality uses the property tax paid on that development to pay for the projects. After the project costs are paid, the municipality closes the TID. The municipality, school(s), county, and technical college are then able to levy taxes on the value of the new development.

Non-Governmental Funding Sources

Private funding is usually used to maintain or enhance existing bicycle and pedestrian infrastructure, such as friends groups who maintain trails. It is less common for private funding to be used to finance new infrastructure; however, private funding can be used in grant funded projects, as needed to cover a required percent local match.

Philanthropic Foundations

Potential funding could be secured in the form of a donation or local grant from private foundations and non-profit charitable foundations for bikeways and trail projects. Additionally, businesses and service organizations, such as Rotary or a Lion's Club, could be encouraged to sponsor segments of a trail or on-road route to help fund ongoing maintenance or purchase route signage, similar to the Adopt A Highway project.

Direct Contributions

The County, municipalities, and advocates could partner to promote a robust giving program that allows individuals to make direct contributions to fund bikeway and trail projects. Such a program could include contributions on the

County's website and partnerships with one or more non-profit foundations to develop fund raising campaign materials and a dedicated fundraising website. The Flyway Trail Project in Buffalo County may be an appropriate model for funding in the county.

3.3 Program Recommendations

Programs at the County and municipal levels play an important role in making communities better for walking and biking. Recommendations contained in this section are based on the Plan's goals and intended program outcomes that resulted from an extensive stakeholder involvement process.

Program Objectives

Throughout the stakeholder engagement process, County staff and the West Central Wisconsin Regional Planning Commission team sought input on program needs from various types of stakeholders. Like the strategy objectives, these program objectives are based on input from members of advocacy organizations; officials and staff from towns, villages, and cities; County officials and staff; avid bicyclists; and the general public.

- *Increased Awareness and Education:* Broad initiatives to increase awareness of traffic law, the rights of roadway users, and safe travel behavior
- *Increased Access to Physical Infrastructure:* Trail connections, park and ride/walk areas, bicycling amenities countywide inventory (such as bicycle parking, lockers, bicycle fix stations, hardware stores, bathrooms, and drinking foundations) and map
- *Bikeways and Trails with Recognizable and Logical Wayfinding Design:* Similar signage appearance, striping patterns, etc. so that users are able to easily use bikeways that cross jurisdictional lines
- *Enhanced Project Development Process:* To streamline and facilitate the inclusion of bike and pedestrian accommodations in roadway projects, especially when substantial cost savings can be realized
- *Enhanced Inter- and Intra-Agency Coordination:* Improved communication between the County, municipalities, and WisDOT, as well as enhanced coordination within individual agencies

Program Recommendations Overview

Recommendations for programs, initiatives, and activities are organized in three categories:

- *Coordination and Communication:* Strategies for increasing the transfer of information and knowledge-sharing from one community to the next, while also increasing public awareness and outreach regarding bikeway, trail, and road projects.
- *Education and Awareness:* Initiatives and programs that improve safety for people biking, walking, and driving while increasing awareness of the rules of the road and rights of various transportation users.
- *Child Encouragement and Safety:* Programs and tools that can be used to make biking and walking to school safer and more enjoyable for children of all ages.

Coordination and Communication

Training and Continuing Education for Agency Staff

Increasing the knowledge and capabilities of planners, engineers, and law enforcement officers is paramount to the effective implementation of this plan and continued safety of the public. All agencies should strive to provide training and continuing education opportunities for their staff members. The Sheriff's Office should provide training that is specific to bicycle and pedestrian traffic enforcement issues. Training opportunities should be provided to Sheriff's deputies and law enforcement officers from other agencies should be invited to participate.

Increased Public Outreach

There is a strong desire amongst advocates and the general public to have increased opportunities to be informed and provide additional input during the transportation planning/programming processes, highway department Capital Improvement Plan development processes, project design processes, etc. of the various local and state authorities responsible for roadways.

The various roadway authorities could define (on a website) their current planning and programming processes and workflows. Updated and informative FAQs highlighting the limiting factors, necessity of strategic project prioritization

decisions, and more, occurring on a month-to-month basis would keep the information fresh. The website could also include descriptions of the general types of projects (new construction, reconstruction, repaving, restriping, etc.) and the anticipated number of centerline miles of each type of project anticipated for the year. In an effort to increase public participation, outreach efforts could be expanded to include increased publicity of public hearings for new plans and CIPs, meetings held within the municipality in which a transportation project is taking place, and/or general open houses at least once per year during which potential highway projects for the future can be discussed.

Bicycle Friendly and Walk Friendly Community Status

The League of American Bicyclists ranks applicant communities on their level of “bicycle friendliness” on a scale from “Honorable Mention” through “Diamond.” Similarly, the Pedestrian and Bicycle Information Center (PBIC) awards communities that improve and prioritize pedestrian safety, access, mobility and comfort with either a bronze, silver or gold designation. Both programs provide a roadmap to enhance conditions for active transportation in a community. The application processes helps communities recognize their strengths and weaknesses regarding biking and walking, and the responses from the League of American Bicyclists and PBIC help guide each community in improving conditions for biking and walking.

Applying for Bicycle Friendly and Walk Friendly Community status can highlight the achievements of a community. Filling out the applications has the added benefit of requiring communities to comprehensively assess their current standing and progress.

Education and Awareness

Education and awareness of the rules of the road are important component of improving the safety of bicyclists, pedestrians, and motorists alike. Without proper knowledge and skills regarding how to interact with different types of road users, people may behave in ways that put themselves or others at unnecessary risk (e.g. failing to yield to pedestrians in crosswalks, bicycling against traffic, walking with traffic). Several initiatives can be deployed to help improve safety for all users.

Media and Public Service Announcements

Encouraging safe and friendly behavior on the road is an important task that can occur through print, television, and online education campaigns to increase

awareness of the rules of the road and broaden education for bicycling and walking. Education efforts should include messages targeted at reducing distracted and aggressive driving. An effort such as this should be coordinated between local advocacy organizations and governmental agencies. In many parts of the country, county health departments have taken the lead on efforts such as this.

Safety Training and Education

Advocacy organizations, bike clubs, and governmental agencies should partner with the Wisconsin Bike Fed to provide education and encouragement efforts with the goal of enticing more people to walk and bike and to do so in a safe manner. This should be coordinated with community partners and local events to reach broader audiences. The Wisconsin Bike Fed's Share & Be Aware program offers educational materials and programs for making biking and walking safer across the state. In addition, the program has regional ambassadors that are available to attend local events and help provide educational training.

Driver education classes should also incorporate the rules of the road for bicyclists and pedestrians, in addition to teaching young drivers about interacting with bicyclists and pedestrian on the road. As many drivers are not exclusively motorists and may choose to walk or bike to their destination, this will also increase the awareness of bicyclists and pedestrians of expectations when interacting with traffic.

Defensive Driving, Biking, and Walking Course

Offering a bicycle and pedestrian education course as an alternative for bicyclists, pedestrians, and motorists who are first-time minor offenders of bicycle and pedestrian-related rules of the road is an efficient and cost effective way to deal with infractions. The County could explore this option in partnership with local jurisdictions for educating rather than punishing some rules of the road violators. Online courses are offered by private companies and non-profits and may be a more administratively-feasible option.

Bike to Work Week and Bike & Walk to School Day

Bicycling to work or to other destinations is a great way to get exercise, save money, reduce pollution, and have some fun. Bike to Work weeks are national activities and are easily organized with help from the League of American Bicyclists website. Information on the website includes a listing of national and local events, suggested promotional materials, and a handbook. Activities for

these events may include morning commute stations where bicyclists are treated to free coffee and breakfast, bike tune ups, and other incentives; group rides with local civic leaders; and discounts at local businesses for commuters and participants.

Mailed Education Materials

Including bicycle related educational pieces in utility or tax bills, newsletters, and other mailed communications is an easy way to reach a large group of people. Simple communications could cover a seasonal topic such as rules of the road, local bicycling ordinances, and back-to-school safety information.

Child Encouragement and Safety

With the recent precipitous rise of childhood obesity, due in part to diet and decreased physical activity, bicycling and walking can be presented as an opportunity to build improved health into daily life. Incorporating education related to walking and biking into the physical education and health curricula of public and private elementary and middle schools is an opportunity to incorporate biking and walking in to the daily exercise ritual of families who live close to schools. However, children are among our most vulnerable users of the traffic environment. For this reason, safe infrastructure must be provided and education efforts must be geared toward protecting these users.

Safe Routes to School

Safe Routes to School (SRTS) is a national program for increasing safety for children walking and biking to school and encouraging more kids to be active in their daily lives. SRTS programs typically involve the development of SRTS travel plans that often result in neighborhood infrastructure improvements that increase safety for children. All public and private schools should have Safe Routes to School plans (backed by SRTS committees) that detail the routes and changes needed to increase the percentage of youth biking and walking while increasing safety. These plans should also include strategies for educating and encouraging children. Finally, communities should prioritize the elimination of policies discouraging kids from walking/biking to school if or when safe routes are provided.

On-the-bike Training for Children and Youth

Bike Rodeos and other on-the-bike training programs are great ways to direct and deliver bicycle related curricula to children and youth. Topics discussed typically

include the parts of a bicycle, how a bike works, how to fix a flat tire, proper helmet fitting, rules of the road, road positioning, and on-bike skills. These events are often facilitated by local police departments, schools, or cycling clubs and model programs are available through the League of American Bicyclists website.

Bike & Walk to School Day

Bike and Walk to School days are national activities and are easily organized with help from the National Center for Safe Routes to School website. Information on the website includes a listing of national and local events, suggested promotional materials, and a handbook. Bike and Walk to School Day is an important component of Safe Routes to School as it both encourages and educates students on how to get to school via bike or their feet.

The Daily Mile

Ideally, all children would be able to walk or bike to school. However, many schools are not within walking or biking distance from student's homes. The "daily mile" program, which started in the UK, is a simple and free way to get children out of the classroom for fifteen minutes every day to run or jog, at their own pace, with their classmates, making them fitter healthier, and more able to concentrate in the classroom. Children do not need to change clothes, although good shoes would be required. Teachers do not need to create any curriculum or need materials. This could be especially useful on days when children are not involved in physical education activities. More information can be found on the project on this program website: thedailymile.co/uk.

CORBA Kids

The Chippewa Off Road Bike Association (CORBA) is a volunteer based organization dedicated to building, improving and promoting mountain bike and other single-track-based opportunities in Wisconsin's Chippewa Valley, including trail running, snowshoeing and hiking. CORBA Kids is a free one day event that introduces mountain biking to children in the summer. CORBA's website, chippewaoffroad.org, offers more information and the event can be found on its calendar.

Other Encouragement Activities

Walking school buses and bike trains are great encouragement tools, and get parents and children talking about how they get to school. Contests between classrooms and schools can build momentum and pride about biking and walking

to school. Physical education curriculum that teaches safe walking and bicycling practices is especially important to increase safety and empower children to engage in active transportation. High schools and higher education institutions can take similar but more advanced steps to increase bicycling and walking, with students taking a greater level of responsibility. Bicycling and hiking/running clubs, bike centers, bike rentals, and marketing promotion of bicycling and walking can all be led by young adults.

3.4 Model Policies and Ordinances

Model Complete Streets Policy

A well-crafted Complete Streets policy is an effective way to ensure the implementation of bicycle and pedestrian improvements as part of street and road projects, as well as a tool to increase safety and quality of life. Complete Streets policies adopted by individual municipalities facilitate context-sensitive design when city, village, or town roadways are constructed/reconstructed. Each municipality is encouraged to adopt a Complete Streets policy; in order to facilitate this outcome, a model policy has been developed for municipalities to tailor and adopt.

This model policy has been crafted based on the National Complete Streets Coalition's *The Best Complete Streets Policies of 2015* report. The structure of the policy is based on the National Complete Streets Coalition's 10 criteria for quality and effective Complete Streets policies. Guidance for modifying the language to each municipality is provided in text boxes alongside each section of the policy.

Model Policy Language

Section 1: Vision

This Complete Streets policy directs the [MUNICIPALITY] to provide streets that are safe and accessible for all people. Complete Streets will benefit the community in many ways, including enhancing quality of life and creating a balanced and interconnected transportation network that provides for economically sound and connected development patterns, public health and safety, livability, equity, affordability, economic activity, and community character.

Modifications to Section 1

The vision should be customized or tailored for each individual community based on their unique values and goals. Communities are encouraged to create a completely new vision for their policies based on the Complete Streets principles included throughout this model policy.

Section 2: All Users and Modes

It is the intent of the [MUNICIPALITY] that Complete Streets and roads be safe for users of all ages, all abilities and all income levels as a matter of routine. This Policy directs decision-makers to consistently plan, design, construct, and maintain streets to accommodate all anticipated users including but not limited to pedestrians, bicyclists, motorists, emergency vehicles, and [INSERT OTHER USERS AS APPROPRIATE].

Modifications to Section 2

This section should be modified to include all anticipated modes in a community that should be considered during street design (although every mode may not necessarily be accommodated on every street). Example additions include paratransit, freight and commercial vehicles, and agricultural vehicles.

Section 3: All Projects and Phases

All types of transportation projects are subject to this policy, regardless of funding source, including those involving new construction, reconstruction, retrofit, repaving, rehabilitation, and change in the allocation of pavement space on an existing street.

Modifications to Section 3

Some communities may feel that this language is too far-reaching. However, it is recommended that Section 3 not be modified. Rather, modify the exceptions that are included in Section 4 in order to improve the efficiency of this policy.

Section 4: Clear, Accountable Exceptions

Any exception to this policy must be approved by the [TOWN/VILLAGE BOARD, CITY COUNCIL, TRANSPORTATION COMMITTEE, or PUBLIC WORKS COMMITTEE] and be documented with supporting data that indicates the basis for the decision. Such documentation shall be publicly available.

Exceptions may be considered for approval when:

1. An affected roadway prohibits, by law, use by specific users (such as interstate highways) in which case a greater effort shall be made to accommodate those specified users elsewhere, including on roadways that cross or otherwise intersect with the affected roadway;
2. The costs of providing accommodations are excessively disproportionate to the need or probable use;
3. The existing and planned population, employment densities, traffic volumes, or level of transit service around a particular roadway is so low as to demonstrate an absence of current and future need.
4. Transit accommodations are not required where there is no existing or planned service;
5. There is a reasonable and equivalent project along the same corridor that is already programmed to provide facilities exempted from the project at hand.

Modifications to Section 4

Each municipality should identify the appropriate body for overseeing the application of this policy and approving or denying exceptions.

The list of exceptions may be modified, but should be done so with careful consideration so as not to render the policy ineffectual.

The rule of thumb definition for “excessively disproportionate” (Exception 2) is 20 percent of the total project cost. This number is not hard and fast as the appropriate figure may be substantially higher or lower on any given project, but communities should not consistently define excessively disproportionate as a figure substantially lower than 20 percent.

Section 5: Network

The [MUNICIPALITY] recognizes the need for a connected, integrated network for all modes that improves street connectivity and provides transportation options to a resident’s many potential destinations. This policy recognizes that all modes do not receive the same type of accommodation or

Modifications to Section 5

It is important that policies recognize that Complete Streets are not stand-alone projects, but are part of a greater interconnected system. The language in this section can be modified or combined with language in another section.

amount of space on every street, but that the street network should allow everyone to safely and conveniently travel across the community.

Section 6: Jurisdiction

This policy applies the [MUNICIPALITY], private developers, the County, the Wisconsin Department of Transportation, and any other body that constructs or maintains streets and roads within the incorporated boundaries of the [MUNICIPALITY].

Modifications to Section 6

Many agencies and organizations play a role in the development of a community's transportation network. It is important that a municipality's policy recognize this fact and express its applicability to projects performed by other agencies.

Section 7: Design

The [MUNICIPALITY] and any agency or organization that plans, designs, or constructs a transportation facility in the incorporated boundaries will use the latest and best design standards when designing streets, including the latest editions of the following:

Modifications to Section 7

The list of standards and guidelines can be modified. This list should not be seen as a mandate to consult every publication on every project.

- General Street Design
 - Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice (Institute of Transportation Engineers)
 - Urban Street Design Guide (National Association of City Transportation Officials)
- Bicycle and Pedestrian Design
 - Guide for the Development of Bicycle Facilities (American Association of State Highway and Transportation Officials)
 - Wisconsin Bicycle Facility Design Handbook (Wisconsin Department of Transportation)
 - Urban Bikeway Design Guide (National Association of City Transportation Officials)
 - Guide for the Planning, Design, and Operation of Pedestrian Facilities (American Association of State Highway and Transportation Officials)

- Public Rights-of-Way Accessibility Guidelines (United States Access Board)
- Detailed Street Design
 - A Policy on Geometric Design of Highways and Streets (American Association of State Highway and Transportation Officials)
 - Manual on Uniform Traffic Control Devices (Federal Highway Administration)

Section 8: Context Sensitivity

Complete Streets will be designed in a context-sensitive manner to respond to the character of the surrounding neighborhood, its current and planned buildings, as well as its current and expected transportation needs.

Modifications to Section 8

It is important that policies recognize that Complete Street design must be sensitive to context. The language in this section can be modified or combined with language in another section.

Section 9: Performance Measures

The [MUNICIPALITY] will measure the success of this policy using various performance measures, including but not limited to:

- Number of crashes and severity of injuries
- Injuries and fatalities for all modes
- Number of curb ramps
- Number of pedestrian countdown signals
- Miles of routes accessible for people with disabilities
- Sidewalk condition ratings
- Travel time in key corridors (point A to point B)
- Emergency vehicle response times
- Number of students who walk or bike to school
- Commercial vacancies in downtown
- Bike route connections to off-road trails (equity across all districts of the community)
- Citizen and business surveys of satisfaction with streets and sidewalks

Modifications to Section 9

This section should be modified to include a reasonable set of performance measures (potentially as few as two) that will help the community track progress. Consideration should be given to data availability and ease of tracking when selecting performance measures.

- Number of bicycle friendly businesses recognized by the League of American Bicyclists
- Number of bike parking spaces

The [MUNICIPAL DEPARTMENT, ADMINISTRATOR, ETC] will present an annual report to the [TOWN/VILLAGE BOARD, CITY COUNCIL, TRANSPORTATION COMMITTEE, or PUBLIC WORKS COMMITTEE] showing progress made in implementing this policy.

Section 10: Implementation Steps

Implementation of this policy will be carried out cooperatively among all departments in the [MUNICIPALITY] with multi-jurisdictional cooperation, and to the greatest extent possible, among private developers and state, regional, and federal agencies.

The [MUNICIPALITY] will take specific steps to implement this policy, including:

1. Restructuring or revising related procedures, plans, regulations, and other processes to accommodate all users on every project, including:
 - a. [RELATED PROCEDURES, PLANS, REGULATIONS, and OTHER PROCESSES]
 - b. ...
 - c. ...
2. 8 all users.

Modifications to Section 10

This section should be modified based on the community’s capabilities and priorities. The National Complete Streets Coalition encourages communities to include variations of the four specific steps included in this model policy language.

In addition to adopting the County Bicycle and Pedestrian Plan Design Guidelines, communities may also elect to adopt national or state-level recognized design guidance.

WisDOT Resolution of Support

In July of 2015, the State statute addressing the establishment of bikeways and pedestrian ways (§84.01(35)) was modified and the corresponding Administrative Code Trans 75 was repealed. Prior to the change, the statute commonly known as the “Complete Streets Law” read “... the department [WisDOT] will ensure bikeways and pedestrian ways are established in all new highway construction and reconstruction projects funded in whole or in part from state funds or federal funds.” One major change resulting from the 2015-2017 Wisconsin Budget bill Act 55 was the changing of “will ensure” to “will give due consideration to” The Statute was also changed from a presumption that bicycle and pedestrian facilities

would be included unless an exception applied, to a presumption that bicycle and pedestrian facilities cannot be included in a state-funded project unless certain conditions are met. That is, WisDOT may not establish a bikeway or pedestrian way if any of the following apply:

1. Bicycles and pedestrians are prohibited by law from using the highway;
or
2. The project is wholly or partially funded with state funds, unless the governing body of each municipality (city, village, or town) within the project has adopted a resolution authorizing the department to establish the bikeway or pedestrian way.

Even after giving “due consideration,” if WisDOT determines that bikeways and pedestrian ways are warranted on a project, WisDOT is authorized to include those facilities only if each municipality has adopted a resolution (an example of such a municipal resolution is included in this section). Resolutions must be unique to each individual project. A blanket resolution addressing all highway projects, present and future, within the municipality does not meet the requirements of the new law.

In relation to federally-funded projects, the need for WisDOT to obtain a municipal resolution(s) does not apply if FHWA provides written notice that establishment of a bikeway or pedestrian way, as a part of project, is a condition of the use of federal funds for that project. However, municipal resolutions can be submitted for these projects and WisDOT will include them in the environmental document submitted to FHWA. In cases where a resolution is not required for a federally funded project, the planning and design processes will still provide opportunities for public input and to evaluate environmental impacts of project alternative that may include bike and pedestrian accommodations. Both Wisconsin state law and federal legislation require that bicyclists and pedestrians shall be given due consideration, but municipal action is required for State-funded projects and recommended for federally-funded projects.

Model Resolution of Support

**Resolution Regarding the Construction of
Bicycle and Pedestrian Accommodations along [USH/STH NUMBER]
In the [MUNICIPALITY]
Resolution Number [XXX]**

Whereas, 2015 Wisconsin Act 55, State Statute 84.01(35) prohibits the Wisconsin Department of Transportation from establishing a bikeway or pedestrian way as part of a new highway construction or reconstruction project funded in whole or in part from state funds unless the governing body of each municipality in which a portion of the project will occur has adopted a resolution authorizing the department to establish the bikeway or pedestrian way; and

Whereas, the Department of Transportation plans to construct a new highway or reconstruct of [ROADWAY (PROJECT ID)] from [PROJECT LIMITS] in [MUNICIPALITY]; and

Whereas, bikeways and pedestrian ways provide multimodal transportation;

Now therefore, be it resolved that [MUNICIPALITY] hereby authorizes the Department to construct bikeways and pedestrian ways as part of the construction/reconstruction of [ROADWAY (PROJECT ID)] from [PROJECT LIMITS].

City, Village, Town Council/Board

Signature: _____ Date: _____

[NAME], [MAYOR/PRESIDENT/CHAIR]

[MUNICIPALITY]

I [FULL NAME], [CITY/VILLAGE/TOWN] Clerk of the [MUNICIPALITY], Wisconsin, do hereby certify that the foregoing is a true and correct copy of a resolution adopted by the [CITY/VILLAGE/TOWN COUNCIL/BOARD] on [DATE] and that the said resolution was approved by the [CITY/VILLAGE/ TOWN COUNCIL/BOARD] on [DATE]

3.5 Design Guidelines

In order to serve a wide range of bicyclists, a variety of bikeway types are proposed for use in Dunn County. The following pages include design guidelines for a variety of bikeway and trail facility types. The guidelines include best practices, minimum and preferred standards, and design considerations. Each guideline also includes specific references that should be consulted when bikeways are being formally designed and designated. These guidelines are intended to be shared between jurisdictions (and can be adopted by resolution by municipalities and the County) in order to ensure the predictability of on-street bikeways and paths across the county. The design guidelines are organized as outlined below.

Facility type: the bikeway and trail types recommended by the Plan

- Shared use paths
- Bike lanes
- Paved shoulders
- Sidewalks

Linear enhancements to existing bikeways: add-on treatments for the facility types listed above that improve visibility, comfort, or usability

- Traffic calming
- Bicycle boulevard treatments
- Shared lane markings
- Bike routing/destination wayfinding

Guideline Structure

Each design guideline is provided as a two-page factsheet and is organized as follows:

- Summary of the facility type
- Benefits and challenges of the facility type or treatment
- Design criteria, such as minimum and preferred width
- Additional considerations, such as how to approach signage or pavement markings
- References and resources for further guidance

Links to state and national design standards and additional resources are provided at the end of the section.

Amenities, intersections and spot treatments: location-specific safety, comfort, and accessibility treatments

- Bikeway intersection pavement markings & signal design
- Curb ramps
- Marked crosswalks
- Crossing islands
- Trail heads, parking areas, rest stops
- Bike Park and Rides/Park and Walks



Shared-use paths may parallel streets, highways, utility easements, railroads, and natural features such as rivers or creeks.

Contractor Oversight

In addition to properly designing bicycle and pedestrian accommodations, it is important to ensure that they are constructed as intended. Sometimes contractors deviate from specified designs either due to simple oversight or because they second-guess the intent of the design. For example, a contractor might stripe shoulders narrower than specified by the County Highway Department or other jurisdiction. It is important that County and municipal contracts for roadway construction and maintenance projects ensure that contractors construct infrastructure and apply pavement markings as designed and intended by the agencies. Enforcing such requirements will necessitate adequate staff availability to review projects after construction and follow up with contractors as needed.

Facility Types

Shared Use Paths

A shared use path is a two-way facility physically separated from motor vehicle traffic and used by bicyclists, pedestrians, and other non-motorized users. Shared use paths, also referred to as trails, are often located in an independent alignment, such as a greenbelt or abandoned railroad. However, they are also regularly

constructed along roadways; often bicyclists and pedestrians will have increased interactions with motor vehicles at driveways and intersections on these “sidepaths.”

Benefits

- Separated from motor vehicle traffic.
- May be appropriate for less-confident adults, children, seniors, and persons with disabilities.
- Provides recreational opportunities in addition to transportation.

Challenges

- Potentially costly and complicated right-of-way acquisition.
- Topography and drainage can greatly impact design.
- High construction costs.
- Can present safety concerns when placed adjacent to a roadway with frequent driveway or intersection crossings.

Design Criteria

Minimum width: 10 feet

Preferred Width: 10-12 feet

Notes

- Widths as narrow as 8 feet are acceptable for short distances under physical constraint. Warning signs should be considered at these locations.
- In locations with heavy volumes or a high proportion of pedestrians, widths exceeding 10 feet are recommended. A minimum of 11 feet is required for users to pass with a user traveling in the other direction. It may be beneficial to separate bicyclists from pedestrians by constructing parallel paths for each mode.
- Paths must be designed according to state and national standards. This includes establishing a design speed (typically 18 mph) and designing path geometry accordingly. Consult the AASHTO Guide for the Development of Bicycle Facilities for guidance on geometry, clearances, traffic control, railings, drainage, and pavement design.

Additional Considerations

- According to the American Association of State Highway and Transportation Officials, “Shared use paths should not be used to preclude on-road bicycle facilities, but rather to supplement a network of on-road bike lanes, shared roadways, bicycle boulevards, and paved shoulders.” In other words, in some situations it may be appropriate to provide an on-road bikeway in addition to a sidepath along the same roadway.
- Many people express a strong preference for the separation between bicycle and motor vehicle traffic provided by paths when compared to on-street bikeways. Sidepaths may be desirable along high volume or high speed roadways where accommodating the targeted type of bicyclist within the roadway in a safe and comfortable way is impractical. However, sidepaths may present increased conflicts between path users and motor vehicles at intersections and driveway crossings. Conflicts can be reduced by minimizing the number of driveway and street crossings present along a path and otherwise providing high-visibility crossing treatments.
- Paths typically have a lower design speed for bicyclists than on-street facilities and may not provide appropriate accommodation for more confident bicyclists who desire to travel at greater speeds. In addition, greater numbers of driveways or intersections along a sidepath corridor can decrease bicycle travel speeds and traffic signals can increase delay for bicyclists on off-street paths compared to cyclists using in-street bicycle facilities such as bike lanes. Therefore, paths should not be considered a substitute to accommodating more confident bicyclists within the roadway.
- Along paths that provide attractive recreational opportunities, consider adding amenities such as benches, rest areas, and scenic overlooks.

References & Resources

- AASHTO Guide for the Development of Bicycle Facilities (2012)
- FHWA Shared-Use Path Level of Service Calculator (2006)
- Manual on Uniform Traffic Control Devices (2009)
- Wisconsin Bicycle Facility Design Handbook (2004, minor updates in 2006 and 2009)

Bike Lanes

Bike lanes provide an exclusive space for bicyclists in the roadway. Pavement markings on the roadway and optional signs are used to establish bike lanes. Bike lanes are typically used on collector and arterial streets with higher traffic volumes and/or speeds. Research on bicyclists' perceptions of safety has shown that as traffic speed and volume increase, bicyclist's perception of safety degrades significantly and results in increased stress and discomfort. Adding bike lanes on moderately busy streets can lower the stress level and encourage bicyclists to use the street.



Bike lanes provide dedicated space on a roadway.

Bicyclists are not required to remain in a bicycle lane when traveling on a street and may leave the lane as necessary to make turns, pass other bicyclists, avoid debris, or position themselves for other necessary movements. Motorists may only use bike lanes temporarily when making right turns, accessing parking spaces and entering and exiting driveways and alleys. Stopping, standing, and parking in bike lanes is prohibited.

Benefits

- Dedicated space for bicyclists (except near intersections where motorists may enter bike lanes to make right turns).
- Established facility type that is understood by most road users.
- May encourage more bicycle travel.
- Inexpensive; typically installed by re-allocating existing street space by narrowing or removing lanes.
- Can lower motor vehicle speeds in some settings.

Challenges

- May not be appropriate for all types of bicyclists.
- Potential risk of “dooring” when placed adjacent to parking.

- Potential for vehicles driving/parking in the bicycle lane due to lack of curb or other vertical separation.

Design Criteria

Minimum width:

4 feet next to gutter seam

5 feet next to parked cars

Preferred Width:

5 feet next to gutter seam

6+ feet next to parked cars

May be wider adjacent to narrow parking lanes and in areas with high on-street parking turnover. When placed next to a parking lane, the reach from the curb face to the edge of the bike lane should be 14.5 feet; the minimum is 13 feet, according to the Wisconsin Bicycle Facility Design Handbook.

- If bike lanes are adjacent to guardrails, walls, or other vertical barriers, additional bicycle lane width is desired to account for bicyclist “shy” distance from the edge.
- Include pavement markings to indicate one-way travel and designate that portion of the street as a bike lane.
- Bicycle lanes should be demarcated with 6- to 8-in white lines using traffic paint or 6-inch skid-resistant material.



While typically provided on both sides of the street, bike lanes can be provided individually to address unique challenges. Contra-flow bike lanes can be provided on one-way streets to allow two-way movement by bicyclists (above). On steep roadways without room for bike lanes on both sides, climbing lanes (below) provide space for bicyclists in the uphill direction.

Additional Considerations

- Two-way bicycle travel may be achieved on some one-way streets by providing a contra-flow bike lane.
- A bike lane may optionally be placed on only one side of a roadway in the uphill direction as a climbing lane if space is limited.
- Depending on the design of the roadway, bicyclists may have to operate in mixed traffic (such as to make turns). Green paint can be used to highlight bike lanes at conflict points, such as right turn lanes.
- For high-speed or high-volume roads, alternative routes suitable for users of all abilities should be considered, in addition to bike lanes on the main road.
- Standard bike lanes may be 6 feet wide, which provides greater separation between bicycles and cars, accommodates people who are pulling bike trailers, and may allow passing without leaving the bike lane.

If street width is available to provide bike lanes wider than 6 feet, consider painting a “buffer” (minimum 18”) between the bike lane and travel lane and/or between the bike lane and the parking lane to provide additional separation and reduce the threat of dooring. A separated bike lane may also be considered.

References & Resources

- AASHTO Guide for the Development of Bicycle Facilities (2012)
- NACTO Urban Bikeway Design Guide (2012)
- Manual on Uniform Traffic Control Devices (2009)
- Wisconsin Bicycle Facility Design Handbook (2004, minor updates in 2006 and 2009)

Separated Bike Lanes

Separated bike lanes, also known as protected bike lanes or cycle tracks, are exclusive bicycle facilities that are physically separated from both pedestrians and motor vehicles. Separated bike lanes isolate bicyclists from motor vehicle traffic using a variety of methods, including curbs, a parking lane, flexible delineators, bollards, large planting pots or boxes, landscaped medians, removable curbs, or other measures. Buffered bike lanes that do not include a vertical element are not considered separated bike lanes.

Separated bike lanes can be one way for bicycles on each side of a two-way road, or two-way and installed on one or both sides of the road. They are typically used on large multi-lane arterials where higher vehicle speeds exist. They may also be appropriate on high-volume but lower-speed streets, particularly in urban centers.

Benefits

- Comfortable for a broad spectrum of people, including young riders and more cautious bicyclists.
- Minimize mid-block conflicts with motor vehicles.
- Reduces conflicts with pedestrians by reducing sidewalk riding; can also shorten pedestrian crossings.



Separated bike lanes are typically used on large multi-lane arterials with high vehicle speeds, but can be appropriate for lower-speed streets that have high traffic volumes.

Challenges

- Careful design at intersections is necessary to ensure bicyclists are visible to motorists in adjacent lanes
- May require special equipment for street sweeping and snow plowing.
- Where the vertical separation is achieved with curbs, stormwater drainage can present a challenge.

- Require a greater reallocation of existing street space than a standard bicycle lane.
- Emergency, transit, and maintenance vehicle access may require special treatments.

Design Criteria

Minimum width:	5 feet (one-way facility) 8 feet (bidirectional facility)
Preferred width:	6.5 feet (one-way facility) allows for passing 10+ feet (bidirectional facility)

- Separated bike lanes require varying widths of buffer space between the bike lane and the adjacent lane. Small barriers such as flexible delineator posts or removable curbs can be separated with a **minimum** 2-foot buffer. In general, a 6-foot buffer is **preferred** for all separation methods.
- Separated bike lanes are appropriate on streets with operating speeds of 25 mph and higher, and volumes that exceed 4,000 vehicles per day.

Additional Considerations

- Separated bike lanes can be level with the sidewalk, at an intermediate height between the sidewalk and the street, or level with the street. If designed to be level with the sidewalk, they should provide a vertical separation between bicyclists and pedestrians, as well as a different surface treatment to delineate the bicycle from the pedestrian space (such as asphalt vs. concrete).
- Separated bike lanes can be a useful treatment on streets that connect to off-street paths, because people riding on paths are likely to be less accustomed to riding with motor vehicle traffic.
- The provision of separated bike lanes should consider the design and function of intersections, which may require adjustments to signal timing and phasing and/or modifications to pavement and curb sections. Traffic studies should be performed before implementing separated bike lanes.

- Bi-directional bike lanes can create challenges with turning vehicles, because motorists looking for gaps in traffic may not be looking for bicyclists approaching from the counter-flow direction.

References & Resources

- NACTO Urban Bikeway Design Guide (2012)
- MASSDOT Separated Bike Lane Planning and Design Guide (2015)

Paved Shoulders

Paved shoulders provide a range of benefits: they reduce motor vehicle crashes, reduce long-term roadway maintenance, ease short-term maintenance such as snow plowing, and provide space for bicyclists and pedestrians (although paved shoulders typically do not meet accessibility requirements for pedestrians). Paved shoulders are typically reserved for rural road cross-sections.



Paved shoulders reduce run-off-road crashes, improve roadway maintenance, and can provide space for bicyclists

Where 4-foot or wider paved shoulders exist already, it is acceptable or even desirable to mark them as bike lanes in various circumstances, such as to provide continuity between other bikeways. If paved shoulders are marked as bike lanes, they need to also be designed as bike lanes at intersections. Where a roadway does not have paved shoulders already, paved shoulders can be retrofitted to the existing shoulder when the road is resurfaced or reconstructed. In some instances, adequate shoulder width can be provided by narrowing travel lanes to 11 feet.

Benefits

- Provide separated space for bicyclists and can be used by pedestrians.
- Reduce run-off-road motor vehicle crashes.
- Reduce pavement edge deterioration and accommodate maintenance vehicles.
- Provide emergency refuge for public safety vehicles and disabled vehicles.

Challenges

- May not provide a comfortable experience for all bicyclists when used on high-speed roads.

- May not facilitate through-intersection bicycle movement unless specifically designed to do so.
- For pedestrians, paved shoulders do meet accessibility requirements.

Design Criteria

- **Minimum width:** 4 feet (5 feet if adjacent to curb or guardrail)
- **Preferred width:** 5 to 6 feet

Shoulder Width Selection Grid

Table 3-2: Paved Shoulder Recommendations				
Intended User Type	Under 500 ADT	500-1,500 ADT	1,500-3,500 ADT	Over 3,500 ADT
More Confident	--	--	4'	6'
Less Confident	--	4'	7'	Shared Use Path recommended*

*In addition to paved shoulders, which should be provided by default on roads with these traffic volumes in order to reduce run-off-road crashes, improve roadway maintenance, and additionally provide space for more confident bicyclists.

Additional Considerations

- Reducing travel lane width on existing roads—also known as a “lane diet”—is one way to increase paved shoulder width. This approach may negate the need to add pavement or reduce the amount of additional pavement needed. By moving the edge line (also referred to as the “fog line” or “shoulder stripe”) 1 foot toward the center of the roadway, 3- or 4-foot wide paved shoulders can be provided next to 11-foot wide travel lanes. This is an inexpensive or even cost-free solution that may provide suitable bicycling accommodations without widening the roadway. Research shows that 11-foot lanes next to 4-foot paved shoulders are generally as safe for motor vehicle traffic as 12-foot lanes next to 3-foot paved shoulders. However, the former is substantially better for bicycling, maintenance, agricultural vehicles, and disabled vehicles.

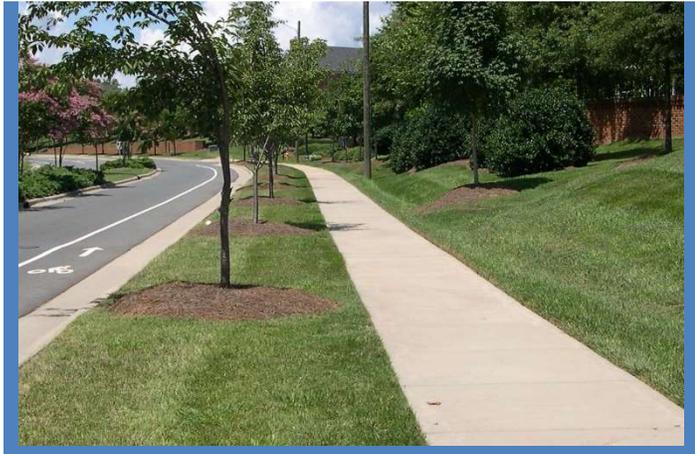
- There are several situations in which additional shoulder width should be provided, including motor vehicle speeds exceeding 50 mph, moderate to heavy volumes of traffic, and above-average bicycle or pedestrian use.
- The placement of rumble strips may significantly degrade the functionality of paved shoulders for bicyclists. Rumble strip placement depends on the use of and goals for the shoulder. To best benefit bicyclists, rumble strips should be placed as close to the edge line as practicable and four feet of usable shoulder space should be provided for bicyclists. However, it is also common practice to place rumble strips 12 to 18 inches outside of the edge line in order to address noise concerns. Design engineers balance these competing preferences on a case-by-case basis, considering input received from nearby residents and users of the roadway. Where rumble strips are present, gaps of at least 12 feet should be provided every 40 to 60 feet. Alternatively, rumble strips could be avoided altogether, since research indicates that rumble strips on two-lane rural roadways have a only a small safety benefit.
- Intersections with unpaved roads and driveways often result in gravel and debris deposited on paved shoulders. Paving the aprons of these intersections can mitigate the negative effect.

References & Resources

- AASHTO Guide for the Development of Bicycle Facilities (2012)
- AASHTO Policy on Geometric Design of Highways and Streets (2013)
- Manual on Uniform Traffic Control Devices (2009)
- Wisconsin Rural Bicycle Planning Guide (2006)

Sidewalks

Sidewalks play a critical role in the character, function, enjoyment, and accessibility of neighborhoods, main streets, and other community destinations. Sidewalks are the place typically reserved for pedestrians within the public right-of-way, adjacent to property lines or the building face. In addition to providing vertical and/or horizontal separation between vehicles and pedestrians, the spaces between sidewalks and



Urban and suburban neighborhoods often have 5-foot sidewalks. It is preferable to have a wide terrace between the curb and the sidewalk to separate pedestrians from the road and to provide room for street trees, utility poles, and other furnishings.

roadways also accommodate street trees and other plantings, stormwater infrastructure, street lights, and bicycle racks.

Benefits

- Dedicated space for pedestrians. The presence of a sidewalk or pathway on both sides of the street corresponds to approximately an 88% reduction in “walking along road” pedestrian crashes.
- Improve mobility for pedestrians and provide access for all types of pedestrian travel.
- Sidewalks can encourage walking and promote fitness, exercise, and the general health of a community.

Challenges

- Often difficult to retrofit streets to add sidewalks in existing neighborhoods.
- Need to be maintained and often that responsibility is passed on to adjacent property owners.

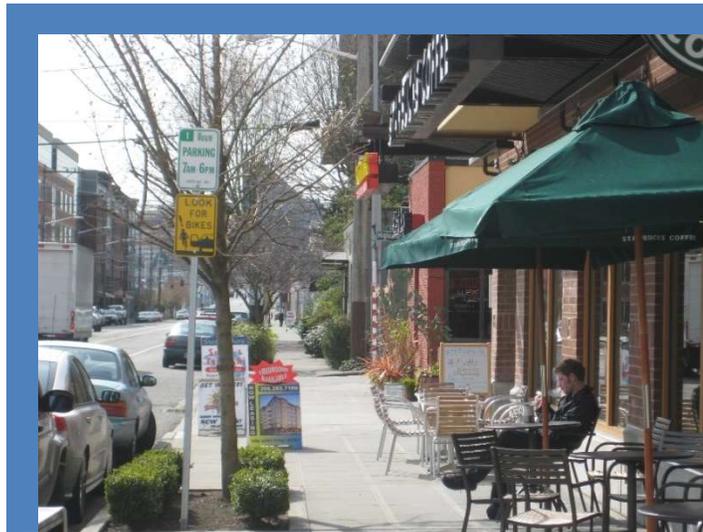
Design Criteria

Minimum width:	4 feet around obstructions
Preferred width:	5 feet in residential areas 6 feet or wider in commercial areas

- Wider sidewalks should be installed near schools, at transit stops, in downtown/main street areas, or anywhere high concentrations of pedestrian traffic exists.
- Maximum cross-slope: 2%. Recommended cross-slope is 1% to 2% with tight tolerances
- Running grade: generally permissible to match the grade of the adjacent roadway
- The Wisconsin Department of Transportation (WisDOT) recommends a typical width for the Furnishing Zone, or terrace, of four to six feet.

Additional Considerations

- Sidewalks are used for many purposes, such as café seating, retail display, utilities, bike racks, traffic signs, etc., especially in downtown and main street areas. In these cases, the Pedestrian Clear Zone (the portion of the sidewalk space used for walking, using mobility assistance devices, or pushing strollers) should have a smooth surface, provide a continuous and direct path, and maintain the minimum width outlined above.



Sidewalks in downtown and main street areas often serve multiple purposes in addition to conveying pedestrian traffic. In the above photo, the Furnishing Zone contains trees, signs, shrubs, etc. While café seating is a desirable amenity, in this example the chairs are encroaching on the Pedestrian Clear Zone, which should be at least 6 feet wide.

- The Furnishing Zone or terrace (the space between the curb and sidewalk) provides space for curb ramps, streetlight poles, fire hydrants, bike racks, traffic signs, etc. In residential areas this is commonly a planted strip. This space should be clear at intersections in order to maintain maximum sight lines for both motorists and pedestrians.
- When retrofitting sidewalks in a community, it is best to first concentrate on busier streets and around places where walking is more common: schools, transit stops, commercial areas, etc.
- Even though roadway shoulders are not legal pedestrian facilities in Wisconsin and cannot legally be designated as pedestrian access routes, the occasional pedestrian that uses a shoulder as a walkway benefits from a wide paved shoulder.

References & Resources

- Wisconsin Guide to Pedestrian Best Practices (2010)
- NACTO Urban Street Design Guide (2013)
- Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG; 2011)

3.6 Linear Enhancements to Existing Bikeways

The following enhancements may be applied in addition to the bicycle facility types outlined in the previous section. These enhancements may also be applied to low-traffic shared streets and roads that do not have dedicated bicycle infrastructure.

Traffic Calming

Traffic calming is the use of physical engineering measures that change the design of streets to reduce speeds, alter driver behavior, and improve conditions for non-motorized street users.

Traffic calming aims to slow the speeds of motorists to a “desired speed” (usually 20 mph or less for residential streets and 25 to 35 mph for collectors and minor arterials). The greatest benefit of traffic calming is increased safety and comfort for all

users on and crossing the street. Compared with conventionally-designed streets, traffic calmed streets typically have fewer collisions and far fewer injuries and fatalities. These safety benefits are the result of slower speeds for motorists that result in greater driver awareness, shorter stopping distances, and less kinetic energy during a collision.

Benefits

- Increased safety/decreased severity of traffic crashes.
- Some treatments, such as street trees, outdoor cafes, and planted traffic circles, make the street more attractive.
- Reduced cut-through traffic.
- Reduced need for police enforcement.



Traffic calming aims to slow the speeds of motorists through a variety of treatments, such as the speed hump shown above.

Challenges

- Impacts traffic patterns.
- Treatments should accommodate snow removal operations, including markers or vertical signage.
- Impacts on street drainage need to be carefully considered.
- Some treatments may have high construction costs.
- Concerns about emergency vehicle access may arise, but in practice impacts on emergency access are typically negligible or very minor.

Design Criteria

- Vertical deflections such as speed humps and speed cushions should have a smooth leading edge, a parabolic rise, and be engineered for a speed of 25 to 30 mph. Speed humps should be clearly marked with reflective markings and signs.
- Typically speed humps are 22 feet in length, with a rise of 6 inches above the roadway. They should extend the full width of the roadway and should be tapered to the gutter to accommodate drainage. Speed humps are not typically used on roads with rural cross-sections; however if they are used on such roads, they should match the full pavement width (including paved shoulders).
- Speed humps or speed cushions are not typically used on collector or arterial streets.
- The size of chicanes will vary based on the targeted design speed and roadway width, but must be 20 feet wide curb-to-curb at a minimum to accommodate emergency vehicles.
- A typical curb radius of 20 feet should be used wherever possible, including where there are higher pedestrian volumes and fewer larger vehicles.

Additional Considerations

- Prior to permanently implementing a traffic calming measure, it may be useful to introduce a temporary measure using paint, cones, or street furniture, as changes can easily be made to the design.
- A formal policy or procedure can help a community objectively determine whether traffic calming measures should be installed on a street or in a

neighborhood. Such a procedure should include traffic and speed studies and a way to gather input and approval from neighborhood residents.

References & Resources

- Huang and Cynecki (2001). The Effects of Traffic Calming Measures on Pedestrian and Motorist Behavior. FHWA
- ITE Traffic Calming Web site
- NACTO Urban Street Design Guide (2013)

Bicycle Boulevard Treatments

Bicycle boulevard treatments applied on quiet streets, often through residential neighborhoods, are designed to prioritize bicycle through-travel while discouraging motor vehicle traffic and maintaining relatively low motor vehicle speeds. Treatments vary depending on each unique context and often include elements of traffic calming, traffic diverters, pavement markings, and speed attenuators such as speed humps or chicanes, and signs.



The treatments used on bicycle boulevards vary depending on the traffic volumes, speeds, and street width, as well as the overall context of the neighborhood. They may include pavement markings, traffic diverters, mini traffic circles, and treatments to reduce motor vehicle speed such as speed humps or chicanes.

Many cities already have signed bike routes along neighborhood streets that provide an alternative to traveling on high-volume, high-speed arterials. Applying bicycle boulevard treatments to these routes makes them more suitable for bicyclists of all abilities and can reduce crashes as well.

Benefits

- Suitable for most ages and abilities of bicyclists.
- May calm traffic speeds; slower speeds are safer and help reduce crash injuries.
- Inexpensive; typically retrofitted within existing right-of-way.
- May reduce cut-through traffic.

Challenges

- Impacts traffic patterns.
- Emergency, transit, and maintenance vehicle access requires careful consideration.

- Developing appropriate treatments at major intersections.
- Wayfinding to community destinations on major roadways.

Design Criteria

Maximum Average Daily Traffic (ADT): 3,000

Preferred ADT: up to 1,000

- Target speeds are typically around 20 mph; there should be a maximum < 15 mph speed differential between bicyclists and vehicles.

Additional Considerations

- Stop signs or traffic signals should be placed along the bicycle boulevard in a way that prioritizes the bicycle movement, minimizing stops for bicyclists whenever possible.
- Include traffic calming measures such as street trees, traffic circles, chicanes, and speed humps. Traffic management devices such as diverters or semi-diverters can redirect cut-through vehicle traffic and reduce traffic volume while still enabling local access to the street.
- Communities should implement bicycle boulevard treatments on one pilot corridor to measure the impacts and gain community support. The pilot program should include before-and-after crash studies, motor vehicle counts, and bicyclist counts on both the bicycle boulevard and parallel streets. Findings from the pilot program can be used to justify bicycle boulevard treatments on other neighborhood streets.
- Additional treatments for major street crossings may be needed, such as median refuge islands, rapid flash beacons, bicycle signals, and HAWK or half signals.

References & Resources

- AASHTO Guide for the Development of Bicycle Facilities (2012)
- NACTO Urban Bikeway Design Guide (2012)
- Manual on Uniform Traffic Control Devices (2009)
- Fundamentals of Bicycle Boulevard Planning & Design (2009)
- Minikel (2011). Cyclist safety on bicycle boulevards and parallel arterial routes in Berkeley, California. Department of Urban Studies and Planning, Massachusetts Institute of Technology

Shared Lane Markings

Shared lane markings (or “sharrows”) are pavement markings that denote shared bicycle and motor vehicle travel lanes. The markers are two chevrons positioned above a bicycle symbol, placed where the bicyclist should be anticipated to operate. In general, this is a design solution that **should only be used in locations with low traffic speeds and volumes** as part of a signed



Shared lane markings show preferred lane positioning to people bicycling while also reminding drivers to expect people on bikes.

route, bicycle boulevard, or as a temporary solution on constrained, higher-traffic streets until additional right of way can be acquired.

Benefits

- May increase motorist awareness of the potential presence of bicyclists.
- Can act as wayfinding aids.
- Does not require specialized maintenance, sweeping, or plowing.
- Low cost of implementation.

Challenges

Are often misused in inappropriate contexts as a “band-aid” treatment when budgets or site constraints do not allow the provision of a suitable bicycle facility. While it may be acceptable to use this marking as an interim treatment, it should not be viewed as a permanent solution in on streets with traffic speeds over 35 mph or traffic volumes over 4,000.

- May not be suitable for all users as shared lane markings do not provide separate space for bicyclists.
- Pavement markings may have higher maintenance needs than other facility types due to the wear and tear presented by motor vehicles driving over the pavement markings.

Design Criteria

- **Preferred** on streets with posted speed limits of up to 25 mph and traffic volumes of less than 4,000 vehicles per day. **Maximum** posted speed of street: 35 mph
- The marking's centerline must be minimum 4' from curb where parking is prohibited.
- The marking's centerline must be minimum 11' from curb where parking is permitted, so that it is outside the door zone of parked vehicles.
- For narrow lanes, it may be desirable to center shared lane markings along the centerline of the outside travel lane.

Additional Considerations

- Typically used on local, collector, or minor arterial streets with low traffic volumes. Commonly used on bicycle boulevards to reinforce the priority for bicyclists.
- Typically feasible within existing right-of-way and pavement width even in constrained situations that preclude dedicated facilities.
- May be used as interim treatments to fill gaps between bike lanes or other dedicated facilities for short segments where there are space constraints.
- May be used for downhill bicycle travel in conjunction with climbing lanes intended for uphill travel.
- Typically supplemented by signs, especially Bikes May Use Full Lane (R4-11).

References & Resources

- AASHTO Guide for the Development of Bicycle Facilities (2012)
- NACTO Urban Bikeway Design Guide (2012)
- Manual on Uniform Traffic Control Devices (2009)

Bike Routing/Destination Wayfinding

Wayfinding is a highly visible way to improve bicycling in an area because it helps identify the best routes to destinations, helps people overcome a barrier of not knowing where to ride, and reminds motorists to anticipate the presence of bicyclists. A wayfinding system is typically composed of signs and pavement markings that guide bicyclists along preferred routes (which may or may not be numbered, named, or color-coded) to destinations across the community, county, or region. Signs may also state distances or time to destinations.

Benefits

- Improves the usefulness of the bicycle network, especially when routes are diverted away from well-known streets.
- Helps bicyclists find lower-stress bikeways.
- Supports bicycle encouragement efforts by reducing concerns about misdirection and getting lost.
- Provides a widespread indicator for motorists that bicyclists should be expected on streets, especially those that are popular bike routes.

Challenges

- Can cause unnecessary confusion if signs do not uniquely identify the route, if the selection of destinations is not optimized, and if placement of signs is not logical.
- Bike route signs should be placed in addition to appropriate facility types such as paved shoulders or bike lanes. Bike route signs are only a suitable stand-alone treatment on very low-traffic roads.
- Too many signs can contribute to sign clutter.



Image 1: M 1-8 series bicycle route sign



Image 2: D11-1 series bicycle route sign with D1-3 series destination signs



Image 3: Image 2: D11-1 series bicycle route sign with D1-3 series destination signs

Design Criteria

- Basic bicycle route signs consist of a MUTCD-style “Bike Route” sign placed every half mile on a major bike route and on the approach to major bike routes at decision points. Unique numbered routes can be designated and can incorporate a route name or agency logos (see example in Image 1).
- Bike route signs can be supplemented with “fingerboard” panels showing destinations, directions, and distances (see Image 2 and Image 3).
- Place directional signs (see Image 2) on the near side of intersections and confirmation signs (see Image 3) on the far side of intersections.

Additional Considerations

- A bicycle wayfinding protocol should coordinate with bicycle route maps and provide three general forms of guidance:
 - Decision assemblies, which consist of Bike Route identification and optional destination fingerboards, placed at decision points where routes intersect or on the approaches to a designated bike route.
 - Turn assemblies, which consist of Bike Route panels and arrow plaques, placed where a designated bike route turns from one street to another.
 - Confirmation assemblies, which consist of Bike Route panels and optional destination fingerboards, placed on the far side of intersections to confirm route choice and the distance (and optionally, time) to destinations.
- Sign design can be customized to add distinct community branding, but the clarity and accuracy of the information must be the top priority.
- If destination wayfinding is implemented, the location of signs and represented destinations should be planned in a comprehensive manner, considering the likely routes of bicyclists and probable destinations. Typical destination wayfinding content includes direction, name, and distance to communities, commercial centers, shared use paths, and other popular destinations.
- The sign protocol should take into consideration the height and type of sign post that is used. It is common on shared-use paths for two sign assemblies to be mounted on the same sign post. If signs are bolted directly to the post, and the assemblies need to be mounted at a 90-degree angle, a longer post may be required to accommodate the extra height.

References & Resources

- NACTO Urban Bikeway Design Guide (2012)
- Manual on Uniform Traffic Control Devices (2009)

3.7 Amenities, Intersections, and Spot Treatments

Bikeway Intersection Treatments

The majority of motor vehicle crashes involving bicycles in urban areas occur at intersections. In Wisconsin, on-street bicycles are required to follow the same rules of the road as motorists. Good intersection design makes bicycling more comfortable, reduces conflicts with motor vehicles and pedestrians, and contributes to reduced crashes and injuries for all modes. Pavement markings increase visibility and provide a clear route for bicyclists through the intersection.



Bike lanes should continue all the way to intersections (above) and should be dashed where they cross right turn lanes. Green pavement (below) can also be used to highlight conflict areas.

Benefits

- Provide continuity through intersections and help define expectations.
- Warn users of potential conflict locations.
- Encourage turning motorists to yield to bicyclists, who have the right-of-way when passing straight through an intersection.



Challenges

- Excessive pavement markings may result in confusion or visual clutter.
- Pavement width at intersection approaches is often in short supply due to the addition of left and right turn lanes.

Design Criteria

- To the maximum extent possible, bikeways should be continuous through intersections. Dedicated bike lanes should be provided on all intersection approaches where space is available.
- At intersections with a dedicated right turn lane (like in the photos above), bike lanes should be provided to the left of the right turn lane to minimize conflicts with motor vehicles.
- At complex intersections or intersections with higher levels of conflicts, bikeways may be striped continuously through the intersection.

Additional Considerations

- A variety of pavement markings including green pavement, shared lane markings, bike boxes, dashed lines, and solid lines can be used to enhance intersections, guide bicyclists, and warn of potential conflicts. The treatment will vary depending on the context of each intersection and should be chosen based on engineering judgment.



Bike boxes and green pavement (combined in this example) are two tools for improving intersections for bicyclists. Bike boxes improve the ability for bicyclists to make left turns at intersections.

- Corridor-wide intersection treatment can maintain consistency; however, spot treatments can be used to highlight conflict locations.
- Removal of some on-street parking may be necessary to provide adequate space for continuous bike lanes and dedicated right turn lanes, as well as to provide adequate visibility for all road users.

- Improved signal designs provide adequate time for bicyclists to clear signalized intersections, minimize bicyclist delay, and reduce the likelihood that bicyclists will disobey the signal. Bicyclists should be accommodated by lengthening or adjusting traffic signal phases and ensuring that loop detectors sense bicycles. Bicycle-specific signals may be used and have received interim approval from FHWA. Refer to the references and resources listed below for specific design criteria.

References & Resources

- AASHTO Guide for the Development of Bicycle Facilities (2012)
- Manual on Uniform Traffic Control Devices (2009)
- OTREC Operational Guidance for Bicycle-Specific Traffic Signals (2013)
- Jensen, SU. Safety effects of blue cycle crossings: A before-after study. *Accident Analysis & Prevention*, 40(2), 742-750. (2008)
- Thompson, SR. Bicycle-Specific Traffic Signals: Results from a State-of-the-Practice Review (2012)

Curb Ramps

Curb ramps provide transition between sidewalks and crosswalks and must be installed at all intersection and midblock pedestrian crossings, as mandated by federal legislation (1973 Rehabilitation Act and ADA 1990).

Benefits

- Universally, widespread benefits apply to people using wheelchairs, strollers, walkers, crutches, handcarts, bicycles, or who have mobility restrictions that make it difficult to step up and down high curbs.

Challenges

- Curb ramp designs can be challenging especially at intersections with large corner radii or on streets within narrow right-of-ways.
- Need to be well maintained, especially during winter months when snow and ice are encountered.
- If not designed to ADA standards, curb ramps can be a problem for pedestrians with visual impairments because they minimize the tactility of the transition point between the sidewalk and the roadway.

Design Criteria

- Maximum slope: 1:12 (8.33%).
- Maximum slope of side flares: 1:10 (10%).
- Maximum cross-slope: 2% (1–2% with tight tolerances recommended).
- Should direct pedestrians into the crosswalk. The bottom of the ramp should lie within the area of the crosswalk.



Curb ramps must include truncated domes. Sedimentation and snow accumulation are challenges.

- Truncated domes (the only permitted detectable warning device) must be installed on all new curb ramps to alert pedestrians to the sidewalk and street edge.
- Type II ramps, which provide one ramp leading to each crosswalk at an intersection, are strongly preferred over Type I ramps that only provide a single ramp for multiple crosswalks.

Additional Considerations

- Furnishing zones or terraces (the space between the curb and sidewalk) of 7' of width provide just enough space at intersections for curb ramps to gain sufficient elevation to a sidewalk.
- Separate curb ramps should be provided for each crosswalk at an intersection rather than a single ramp at a corner for both crosswalks. The separate curb ramps improve orientation for visually impaired pedestrians by directing them toward the correct crosswalk.
- Curb ramps are required to have landings. Landings provide a level area with a cross slope of 2% or less in any direction for wheelchair users to wait, maneuver into or out of a ramp, or bypass the ramp altogether. Landings should be 5' by 5' and shall, at a minimum, be 4' by 4'.
- All newly constructed and altered roadway projects (including resurfacing projects) must include curb ramps. Agencies with more than 50 employees are required to have a transition plan in place to address the staging of the curb ramp upgrades.

References & Resources

- Wisconsin Guide to Pedestrian Best Practices (2010)
- Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG; 2011)

Marked Crosswalks

Well-designed crosswalks are an important component to increase the safety of pedestrians crossing streets and roads. Safety for all pedestrians, especially for those with limited mobility and disabilities, is the single most important criteria in crosswalk design.

Legal crosswalks exist at all locations where sidewalks meet the roadway, regardless of whether pavement markings are present. Drivers are legally required to yield to



Raised crosswalks have traffic-calming effects. This crosswalk crosses two travel lanes, a bike lane, and a parking lane.

pedestrians at intersections, even when there are no pavement markings. Providing marked crosswalks communicates to drivers that pedestrians may be present, and helps guide pedestrians to locations where they should cross the street. In addition to pavement markings, crosswalks may include signals/beacons, warning signs, and raised platforms.

Benefits

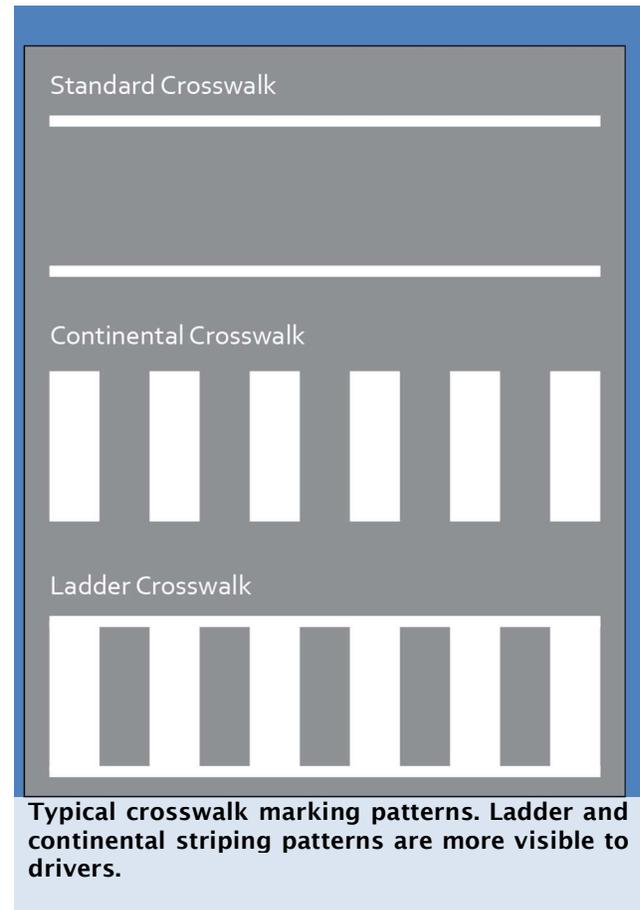
- Increases the visibility of pedestrians crossing at intersections and controlled mid-block crossings.
- Can have traffic-calming effects if raised or if curb extensions are provided.

Challenges

- Road grades and crowns pose challenges for constructing crosswalks that meet accessibility requirements.
- Multi-lane streets and rural intersections require longer crosswalks and are less comfortable for pedestrians.
- Enforcing stop-bar compliance is important so that drivers do not stop in crosswalks.

Design Criteria

- Place on all legs of signalized intersections, in school zones, and across streets with more than minor levels of traffic.
- Crosswalks should be at least 10 feet wide or the width of the approaching sidewalk if it is greater. In areas of heavy pedestrian volumes, crosswalks can be up to 25 feet wide.
- Stop lines at stop-controlled and signalized intersections should be striped no less than 4 feet and no more than 30 feet from the approach of crosswalks.
- Add rapid-flash beacons, signals, crossing islands, curb extensions, and/or other traffic-calming measures when ADT exceeds 12,000 on 4-lane roads or speeds exceed 40 mph on any road.
- Designs should balance the need to reflect the desired pedestrian walking path with orienting the crosswalk perpendicular to the curb; perpendicular crosswalks minimize crossing distances and therefore limit the time that pedestrians are exposed.
- Refer to the references and resources listed below for specific design criteria.



Additional Considerations

- There are many different styles of crosswalk striping and some are more effective than others. Ladder and continental striping patterns are more visible to drivers.
- Signal phasing is very important. Pedestrian signal phases must be timed based on the length of the crossing. If pedestrians are forced to wait longer than 40 seconds, non-compliance is more likely.

- Raised crossings calm traffic and increase the visibility of pedestrians.
- Curb extensions, also known as bulb-outs and bump-outs, reduce the distance pedestrians have to cross and calm traffic.

References & Resources

- Wisconsin Guide to Pedestrian Best Practices (2010)
- NACTO Urban Street Design Guide (2013)
- Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines (2005)
- Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG; 2011)
- ADA Accessibility Guidelines (2004)
- Manual on Uniform Traffic Control Devices (2009)

Crossing Islands

Crossing islands are raised islands that provide a pedestrian refuge and allow multi-stage crossings of wide streets. They can be located along the centerline of a street, as roundabout splitter islands, or as “pork chop” islands where right-turn slip lanes are present.



This crossing island doubles as a partial diverter. Curb ramps are “cut through,” allowing pedestrians to remain at-grade.

Benefits

- Provide pedestrians refuge when crossing wide, multi-lane streets.
- Improve crossings at unsignalized locations, as pedestrians are only required to negotiate one direction of traffic at a time.
- Have traffic calming effects.

Challenges

- Noncompliance with pedestrian signals may increase with multi-stage crossings due to impatience or feelings of vulnerability.
- While preferable, cut-through medians may accumulate debris and snow more than ramped islands.

Design Criteria

Minimum width: 6 feet

Preferred Width: 8 feet (to accommodate bicyclists and wheelchair users)

- Curb ramps with truncated dome detectable warnings and 5' by 5' landing areas are required.
- A “nose” that extends past the crosswalk is not required, but is recommended to protect people waiting on the crossing island and to slow turning drivers.

- Vegetation and other aesthetic treatments may be incorporated, but must not obscure visibility.

Additional Considerations

- There are two primary types of crossing islands. The first provides a cut-through of the island, keeping pedestrians at street-grade. The second ramps pedestrians up above street grade and may present challenges to constructing accessible curb ramps unless they are more than 17' wide.
- Crossing islands should be considered where crossing distances are greater than 50 feet to allow multi-stage crossings, which in turn allow shorter signal phases.
- Cut-through widths should equal the width of the crosswalk. Cut-throughs may be wider in order to allow the clearing of debris and snow, but should not encourage motor vehicles to use the space for U-turns.
- Crossing islands can be coupled with other traffic-calming features, such as partial diverters.
- At mid-block crossings where width is available, islands should be designed with a stagger, or in a "Z" pattern, encouraging pedestrians to face oncoming traffic before crossing the other side of the street.



Crossing islands with offset openings encourage pedestrians to face oncoming traffic before crossing the opposite side of the street.

References & Resources

- NACTO Urban Street Design Guide (2013)
- Manual on Uniform Traffic Control Devices (2009)

Trailheads, Parking Areas, Rest Stops

Trailheads, parking areas, and rest stops provide access to the bikeway network, encourage more use of the paths and bikeways, and provide meeting and parking locations for groups. The number and type of amenities provided at a trailhead, parking area, or rest stop is based on the number of users of the path or bikeway and the relative ease of finding services nearby. It is important to add these amenities to any bicycling or walking map.



This rest stop has benches, a water fountain, and a map of the bicycle network.

Benefits

- Encourage greater use of paths and bikeways
- Provide parking and access points for paths.
- Serve as a meeting point with off-street parking for cycling groups.
- Provides an element of “branding” for the bikeway network.
- Maps of the area help path or bikeway users with wayfinding.

Challenges

- Higher-amenity trailheads can be expensive to construct and maintain.
- Water, sewer, and electric service may be needed.
- Ongoing maintenance needs.

Design Criteria

- Trailheads:
 - Location: usually located in a park, along a major roadway, or at the terminus of a path. **At a minimum**, provide a trailhead at each path terminus. **Preferred** placement would include all path intersections

with major roadways or other major paths, where the path traverses a business district, or every 10 miles.

- Amenities: 10, 20, or more parking spots with overflow parking area, permanent or portable restrooms, drinking fountains, shelter with seating, bike repair stations, and basic amenities such as trail information kiosks and waste receptacles.
- Parking areas/ Park and Bicycle or Walk:
 - Location: Parking areas should be placed based on both opportunity and demand, such as at a rural town hall with a parking lot that has little use on the weekends or at a rural church parking lot which is used infrequently during the week. They could also be provided at small parks near paths or on-road bikeways in order to provide a meeting location for road cycling groups or as a place for commuters who travel long distances to park their motor vehicles and ride their bicycle or walk a shorter distance to their place of work.
 - Amenities: 10-20 parking spots, drinking fountain or potable water spigot, shaded area, seating, bike repair station, and basic amenities such as path or bike route information signage and waste receptacles. Access to permanent or portable restrooms is also highly desirable at these locations.
- Rest stops:
 - Location: **At a minimum**, place rest stops on paths at parks and at intersections with major roadways or other paths. **Preferred** placement of rest stops would include intermediate locations along paths and on-road bikeways as well. In areas with more pedestrians, rest stops can be provided every 1-2 miles. In more remote areas on paths or on-road bikeways, they can be spaced at 3-5 miles.
 - Amenities: Water fountains (where feasible), a seating area, fix-it station, as well as basic amenities such as trail information signage and waste receptacles. May include permanent or portable restrooms in more remote areas. Typically does not include off-street parking.

Additional Consideration

- The number and types of amenities provided depends on the number of users of the facility. Trailheads located in a county, regional, or state park will provide a higher number of amenities because they serve more than just path users.
- Map kiosks should be sited and placed so that the information is visible to someone in a wheelchair. Place map kiosks and seating areas a minimum of 5 feet off the path, to prevent people from blocking the path.
- All trailheads, parking lots, and rest stops should be designed for accessibility according to the ADA.
- Trailheads, parking areas, and especially rest stops are great opportunities for corporate sponsorship, donations, and “adoption” by clubs or other organizations. Public agencies would likely acquire the land and oversee construction, whereas businesses and non-profits could donate funds to purchase the amenities.

References and Resources

- Minnesota Trail Planning, Design, and Development Guidelines (2007)

Links to Primary Design Resources

1. The American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, 4th Edition (2012)
https://bookstore.transportation.org/item_details.aspx?id=1943
2. NACTO Urban Street Design Guide (2013)
<http://nacto.org/publication/urban-street-design-guide/>
3. The Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (2009)
<http://mutcd.fhwa.dot.gov>
4. Wisconsin Rural Bicycle Planning Guide (2006):
<http://wisconsindot.gov/Documents/projects/multimodal/bike/rural-guide.pdf>
5. Wisconsin Bicycle Facility Design Handbook (2004, with minor updates in 2006 and 2009):
<http://wisconsindot.gov/Documents/projects/multimodal/bike/facility.pdf>

3.8 Wayfinding Framework

The Dunn County Bicycle and Pedestrian Plan (the Plan) includes a bicycle wayfinding protocol that includes a multi-level proposed bicycle route sign system that provides consistency across the County while allowing opportunities for unique branding by individual communities. Signage is to meet the requirements of the Manual on Uniform Traffic Control Devices (MUTCD) and will help bicyclists to navigate roadways and paths to reach destinations throughout the County.

Purpose of Bike Route Signing and Bicycle Wayfinding

When considering the type of information and destinations that should appear on bicycle wayfinding signs, it is helpful to keep in mind the reasons for providing a comprehensive wayfinding sign system. These reasons are set forth below:

- Provide guidance along routes that are not intuitive or are different from those followed by motorists
- Provide navigational assistance to popular destinations for bicyclists and trail users
- Encourage people to try bicycling by showing how easy (or quick) it is to get to destinations by bicycle
- Support bicycle safety by helping bicyclists find safe, low-traffic routes
- Remind motorists that bicyclists should be expected on roads, especially those that are popular bike routes
- Promote bicycle tourism in the county

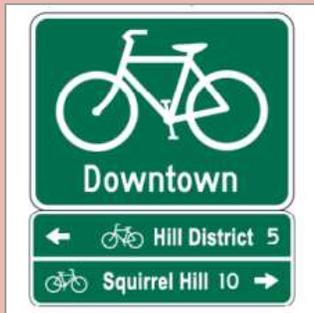
Types of Bicycle Wayfinding

Traditionally, there have been two approaches to bicycle route signing and wayfinding: signing for recreational routes, and destination-based wayfinding. The two approaches can be combined, but they can sometimes be incompatible: recreational routes are often circular or will deviate from the shortest path in order to take in a beautiful scenic view, follow a river, or go up a challenging hill. Destination-based wayfinding routes usually take a more direct—but still safe—route and will avoid steep hills. Table 1 highlights the different approaches and provides some examples of each, as well as some examples where they have been combined.

Table 3-3: Destination and Route Wayfinding Signs

	Destination-Based Wayfinding	Route-Based Wayfinding	Combination of Route-Based and Destination-Based
Primary use	Transportation	Recreation	Transportation and recreation
Type of travel and route	Routes are mostly direct and less hilly	Routes may be circular, may follow waterbodies or scenic views.	Routes are mostly direct. May be “urban escape routes” or popular shared-use paths.
Type of information on signs	Destinations, direction, and distance (optional).	Route name (or route number), direction, and optionally, distance. Routes may be color-coded.	Route name (or route number), direction, and distance (optional). Routes may be color-coded.

Examples



Pittsburgh, PA



Arlington, VA



Wausau, WI



Madison, WI



Rockville, MA



Madison, WI (proposed)

Destination-Based Wayfinding on the Enhanced Network

The Plan proposes a Bicycle Route Network Plan of low-stress bikeways between population centers and popular destinations. Because these are relatively direct routes that will attract more bicyclists who will be traveling for transportation purposes or leisurely recreation (rather than a focus on high mileage rides), the emphasis should be on providing destination-based wayfinding along those routes. The selection of destinations for signs can include city/village centers, main streets, schools, trails, parks, and other popular destinations for bicycling. Municipalities and the county should cooperatively identify destinations for inclusion.

Simple “Bike Route” signs should be avoided. However, route signs featuring distinct names can be used if desired. If not, the wayfinding fingerboard signs can be used on their own.

US and Wisconsin Bike Routes

The Wisconsin Department of Natural Resources and Department of Transportation planned U.S. and Wisconsin Bicycle Routes (USBRs and WIBRs) for long-distance touring and recreational riding in 2015. As part of that plan, USBR 20 was identified to travel through Dunn County. However, this route has not been signed or officially designated. Furthermore, this plan identifies alternatives to those proposed routes on less traveled roadways that could be signed as the U.S. Bicycle and Wisconsin Bicycle Route (see box).

Sign Placement Guidelines

Wayfinding signs should be placed in addition to appropriate facility types such as paved shoulders or bike lanes. Bike route signs are



U.S. Bicycle Routes should be marked with the Alternate M1-9 sign (displayed above) which is described in detail in a 2012 memo by the Federal Highway Administration. State bicycle routes will use the sign design displayed below.



only a suitable stand-alone treatment on very low-traffic roads. Signs should be placed in such a way that they minimize visual clutter while remaining highly visible and legible to bicyclists.

Basic Placement Guidelines

- Basic bicycle route signs should be placed every half mile on a major bike route and on the approach to major bike routes at decision points.
- Place decision and turn assemblies on the near side of intersections and confirmation assemblies on the far side of intersections.
- Take into consideration the height and type of sign post that is used. It is common for two sign assemblies to be mounted on the same sign post. If signs are bolted directly to the post, and the assemblies need to be mounted at a 90-degree angle, a longer post may be required to accommodate the extra height.

Part 4: Regional Bicycle Routes Plan

The Eau Claire County Bicycle and Pedestrian Plan was created in coordination with the Chippewa County and Dunn County bicycle and pedestrian plans and the three plans serve as an extension of the St. Croix County route plan into western Wisconsin. The St. Croix County Bicycle and Pedestrian Plan was adopted in 2017 and recommended a number of bicycle routes throughout the county. This planning process served as the catalyst for creating a regional bicycle route network.

These routes are meant to increase bicycle ridership by focusing on safety and bicyclist comfort. A completed network will increase opportunities for physical recreation and for bicycle tourism through connectivity, especially in many of the small villages and cities as well as the unincorporated communities.

Communication and coordination between the four counties are essential for the success of the regional bicycle network plan. Several strategies for inter-county communication and coordination are laid out in Part 3.

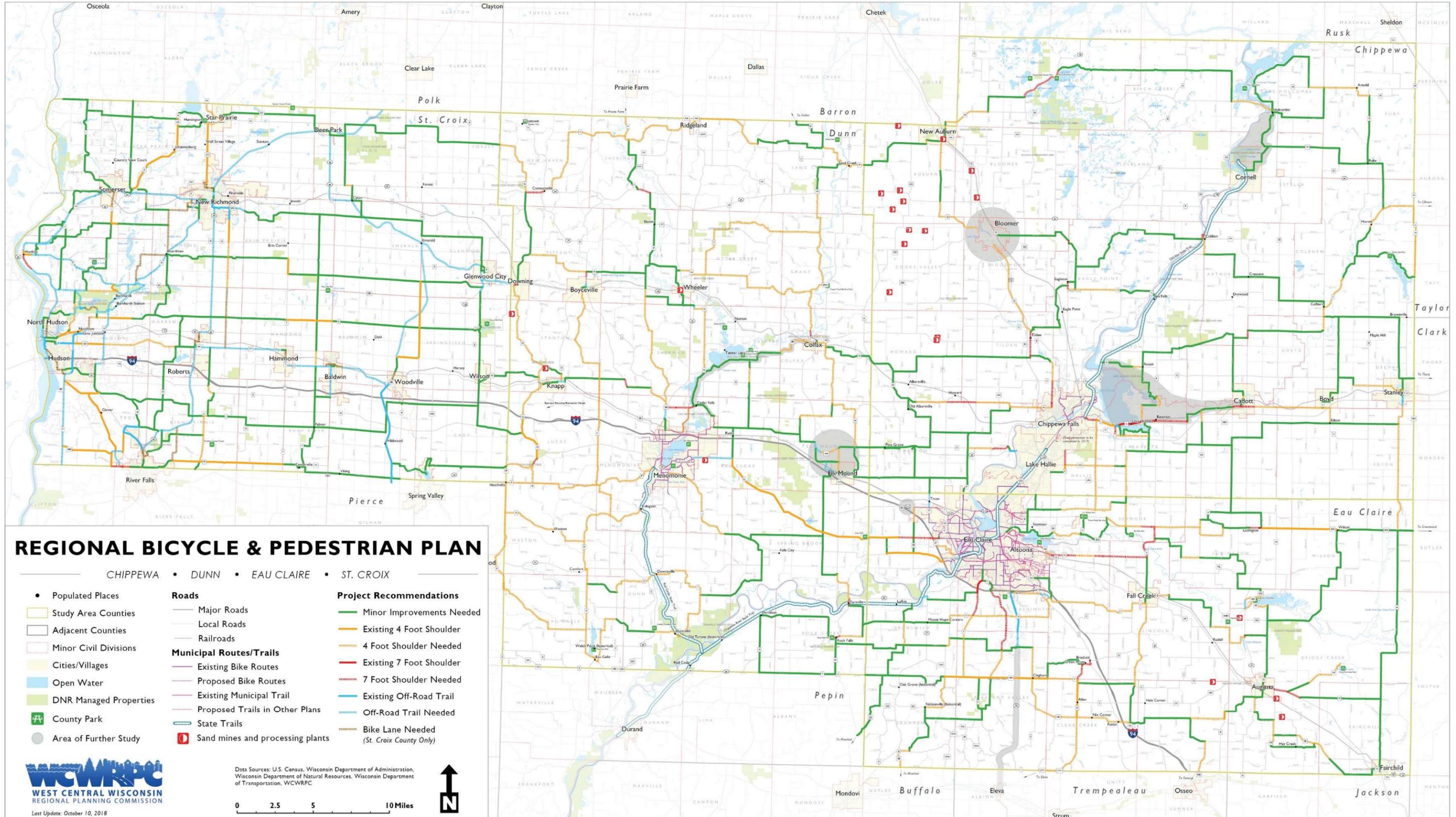
The Map 4.1 shows the envisioned bicycle route network for the four counties. Maps 4.2-4.5 show each of the county maps and the suggested improvements to make the bicycle network suitable for a larger span of adult riders. Lastly, Map 4.6 shows the four-county map with the recommended improvements.

It should be noted that these maps depict suggested routes, some of which have a number of obstacles and would not be presently advisable, without the recommended improvements especially for less experienced bicyclists. About 40 percent of the road routes suggested will need improvements and may take years to be completed as funding becomes available.

However, as routes are improved, counties should coordinate marketing of the route network and bicycle route signage as well as maps and online tools. These actions will broaden public awareness of bicycling opportunities. Many jurisdictions in Wisconsin print maps that bicyclists can pick up at bike shops and government offices. These maps are designed to help bicyclists find the most comfortable route for their trip, whether for transportation or recreation. They can also be provided as large-scale PDFs online. Online maps potentially have unlimited distribution, while paper maps are limited by the quantity printed.

Bicycle route signage could be standard but should be supplemented with coordinated wayfinding signage. Alternatively bicycle route signage could be

designed specifically for the western Wisconsin bicycle routes or by county-however wayfinding signage should be uniform in terms of the type of content and should take destinations across county lines into account. Each municipality having its own guidelines for signage should be avoided to improve the bicycling experience.

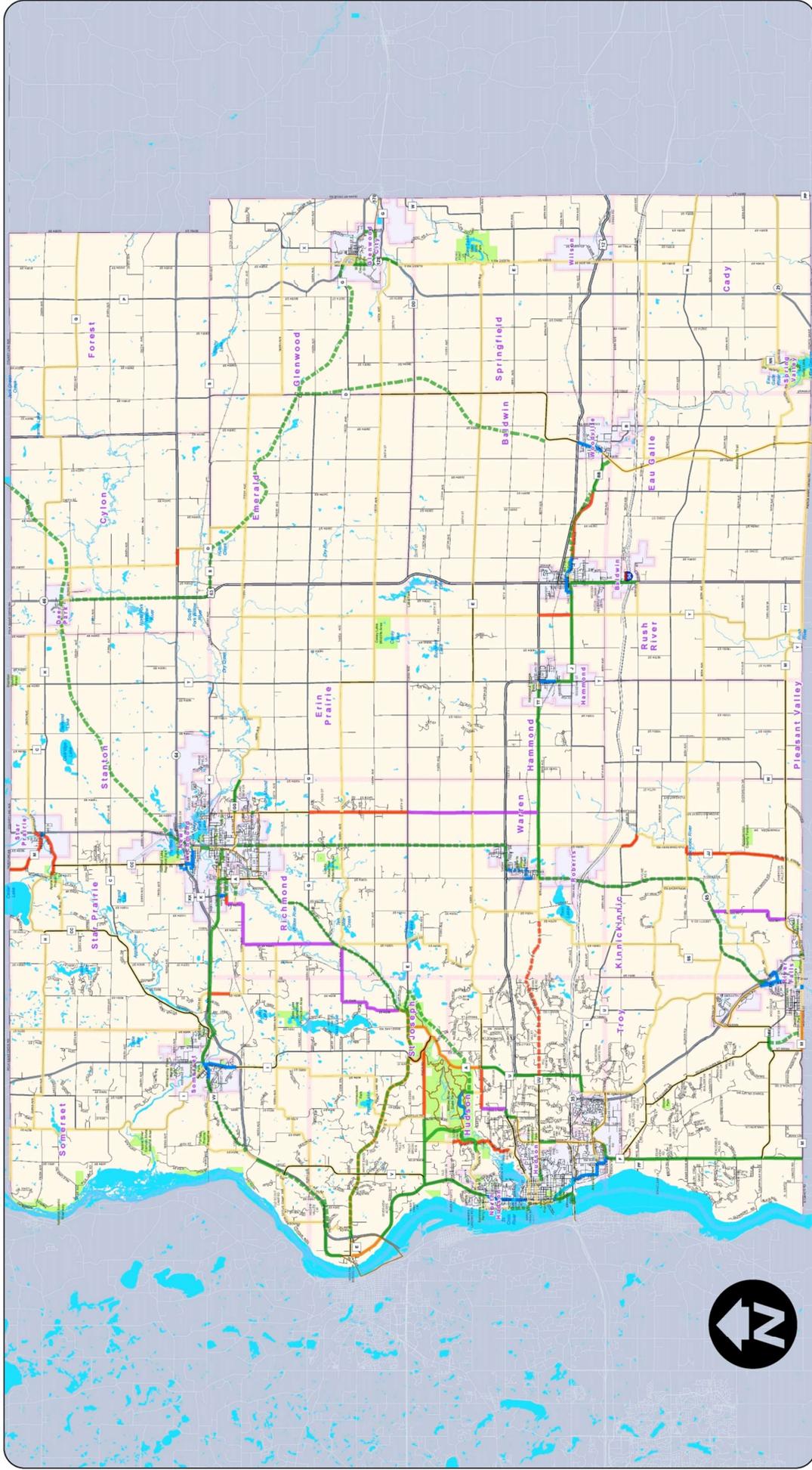


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St. Croix County Community Development
 1101 Cornichon Rd.
 Hudson, WI
 Phone: 715.384.4680
 Email: cd@co.stcroix.wi.us
www.co.stcroix.wi.us

ST. CROIX COUNTY
Bicycle and Pedestrian
 PLAN

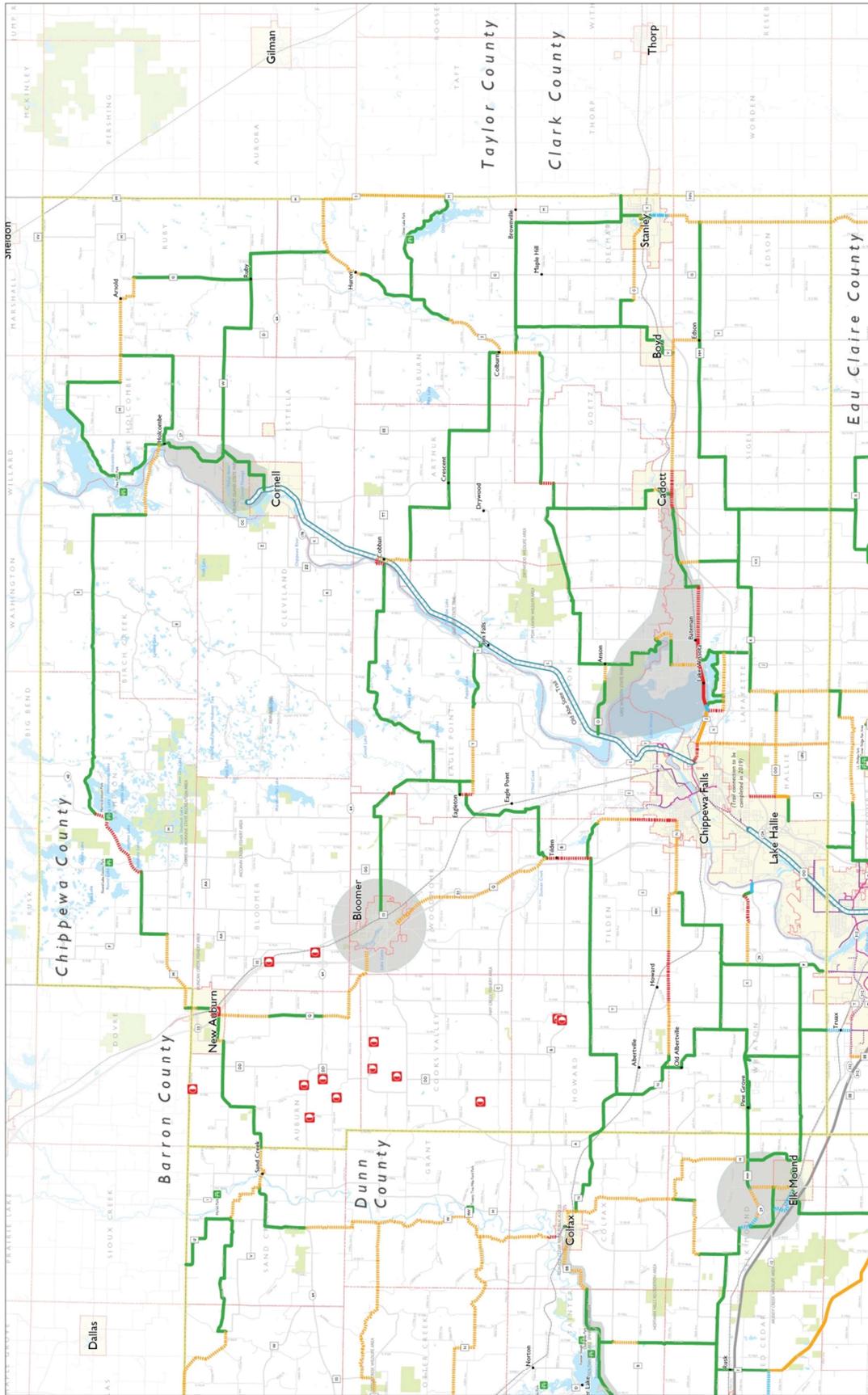
Bikeway and Trail
Network Recommendations



Existing Path
 Existing Paved Shoulders
 Municipal Boundaries
 Path (Full Build Alignment)
 Bike Lanes (Full Build Alignment)
 Paved Shoulders (Full Build Alignment)
 Minor Enhancements (Full Build Alignment)
 Path
 Bike Lanes
 Minor Enhancements
 Separated Bike Lanes
 Advisory Bike Lanes
 Paved Shoulders
 Wider Paved Shoulders
 Minor Enhancements

0 1 2 4 6 8 Miles

Date Printed: 3/21/2017



REGIONAL BICYCLE & PEDESTRIAN PLAN

CHIPEWA COUNTY, WI



North arrow pointing up.

- Project Recommendations**
- Minor Improvements Needed
 - Existing 4 Foot Shoulder
 - 4 Foot Shoulder Needed
 - Existing 7 Foot Shoulder
 - 7 Foot Shoulder Needed
 - Existing Off-Road Trail
 - Off-Road Trail Needed

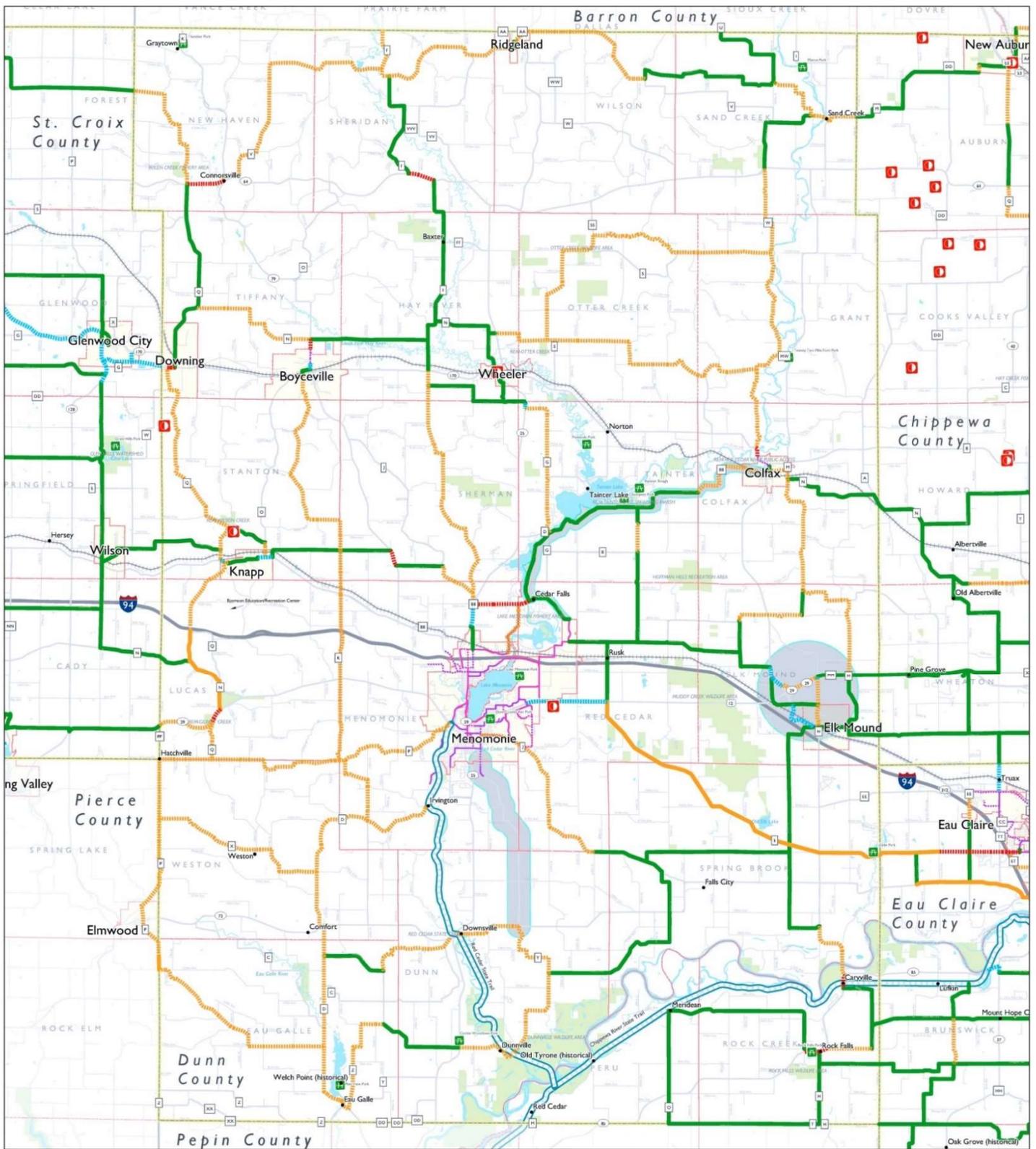
- Municipal Routes/Trails**
- Existing Bike Routes
 - Proposed Bike Routes
 - Existing Municipal Trail
 - Proposed Trails in Other Plans
 - State Trails

- County Park
- Sand mines and processing plants
- DNR Managed Properties
- Area of Further Study



Data Sources: U.S. Census, Wisconsin Department of Transportation, Wisconsin Department of Transportation, WCVBC

Last Update: November 2018



REGIONAL BICYCLE & PEDESTRIAN PLAN

DUNN COUNTY, WI

0 1.25 2.5 5 Miles



Data Sources: U.S. Census, Wisconsin Department of Administration, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, WCWRPC
Last Update: November, 2018



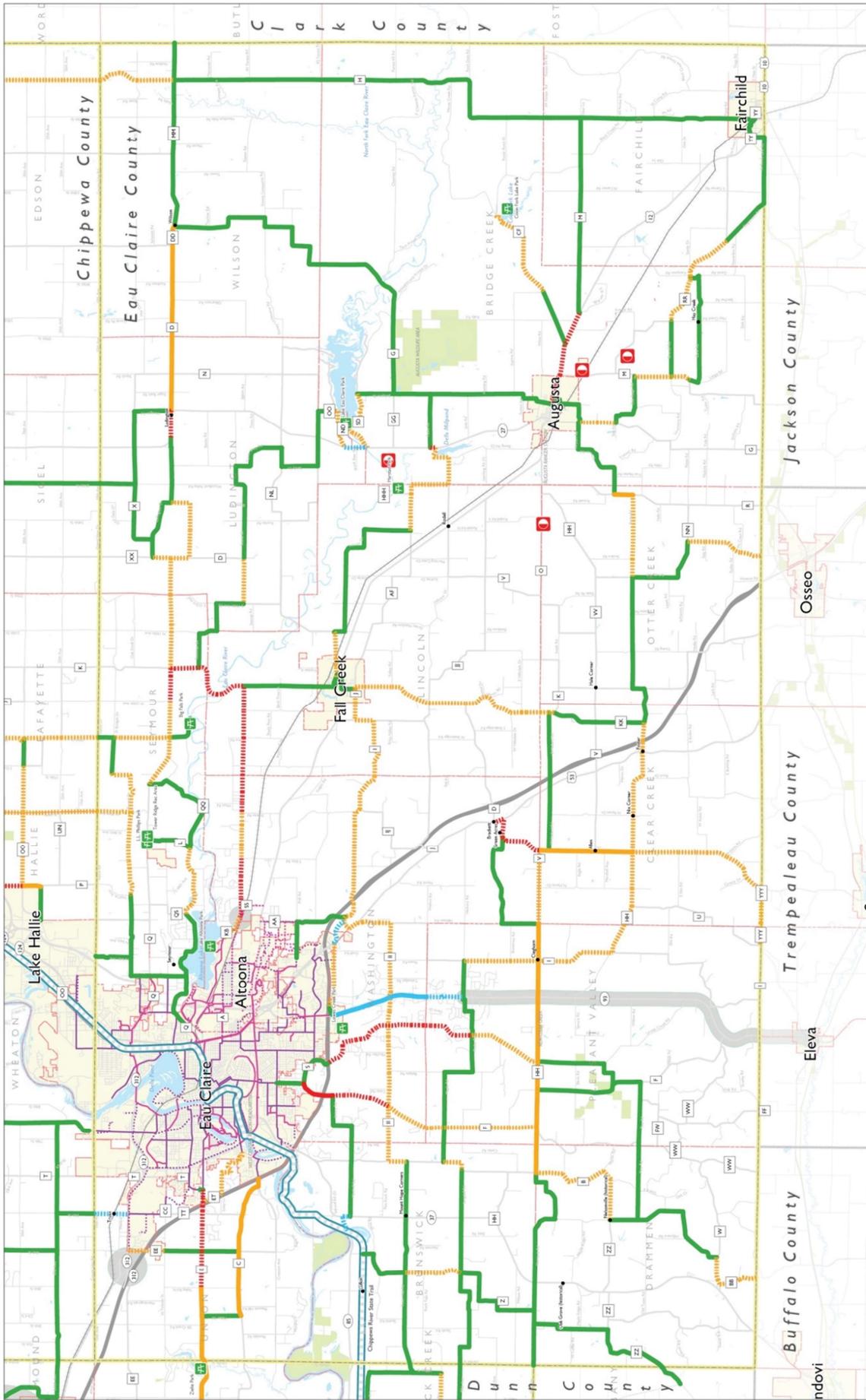
- County Park
- Sand mines and processing plants
- DNR Managed Properties
- Area of Further Study

City of Menomonee Routes/Trails

- Existing Bike Routes
- Proposed Bike Routes
- Existing Municipal Trail
- Proposed Trails in Other Plans
- State Trails

Project Recommendations

- Minor Improvements Needed
- Existing 4 Foot Shoulder
- 4 Foot Shoulder Needed
- Existing 7 Foot Shoulder
- 7 Foot Shoulder Needed
- Existing Off-Road Trail
- Off-Road Trail Needed



REGIONAL BICYCLE & PEDESTRIAN PLAN

EAU CLAIRE COUNTY, WI

- County Park** (Green square with 'P')
- Sand mines and processing plants** (Red square with 'S')
- DNR Managed Properties** (Green square)
- Area of Further Study** (Grey circle)
- Municipal Routes/Trails**
 - Existing Bike Routes (Purple line)
 - Proposed Bike Routes (Dotted purple line)
 - Existing Municipal Trail (Pink line)
 - Proposed Trails in Other Plans (Dotted pink line)
 - State Trails (Blue line)
- Project Recommendations**
 - Minor Improvements Needed (Green line)
 - Existing 4 Foot Shoulder (Yellow line)
 - 4 Foot Shoulder Needed (Dotted yellow line)
 - Existing 7 Foot Shoulder (Red line)
 - 7 Foot Shoulder Needed (Dotted red line)
 - Existing Off-Road Trail (Blue line)
 - Off-Road Trail Needed (Dotted blue line)



Data Sources: U.S. Census, Wisconsin Department of Transportation, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, WCRPC

Last Update: November 2018



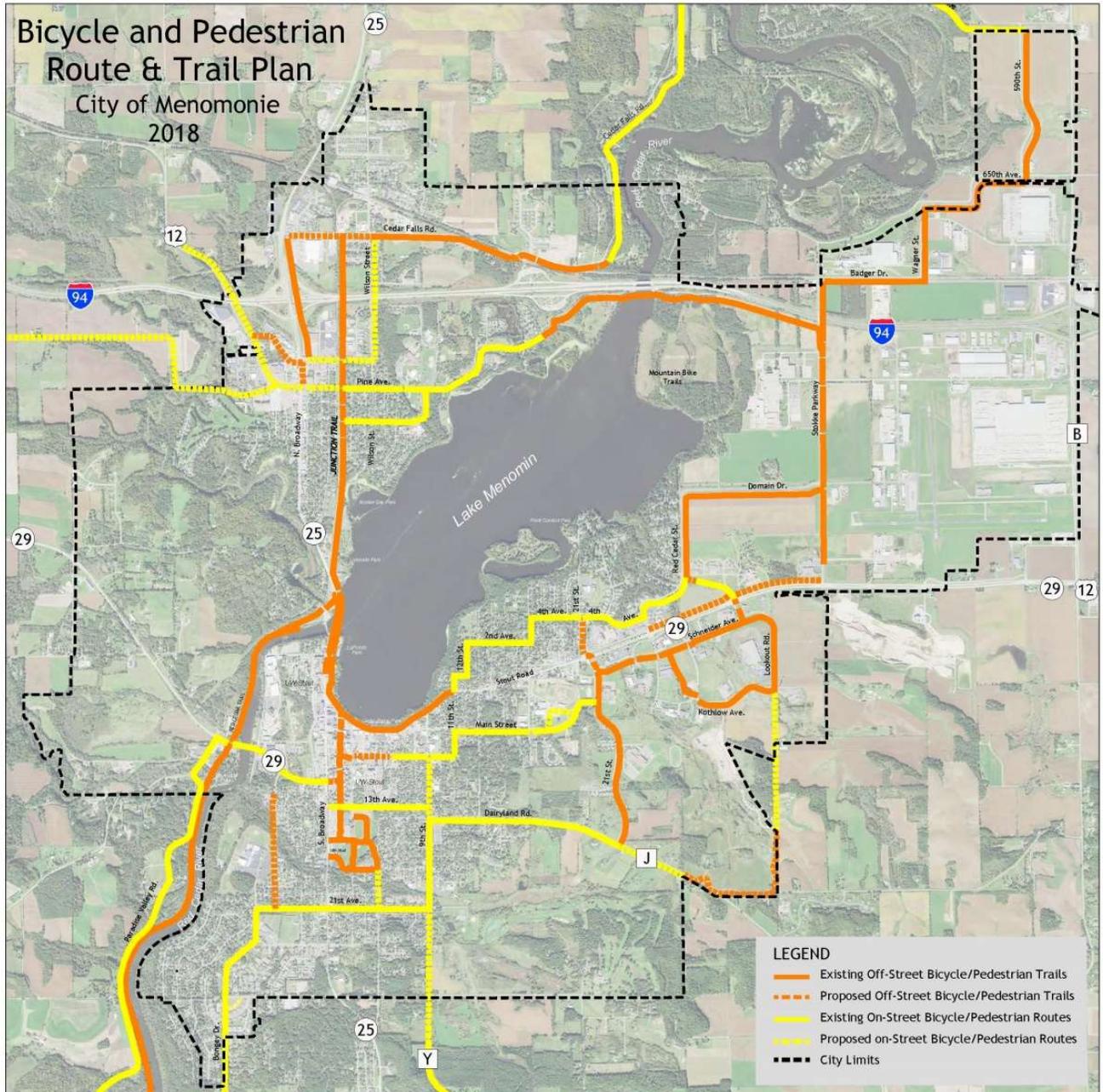
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Appendix A

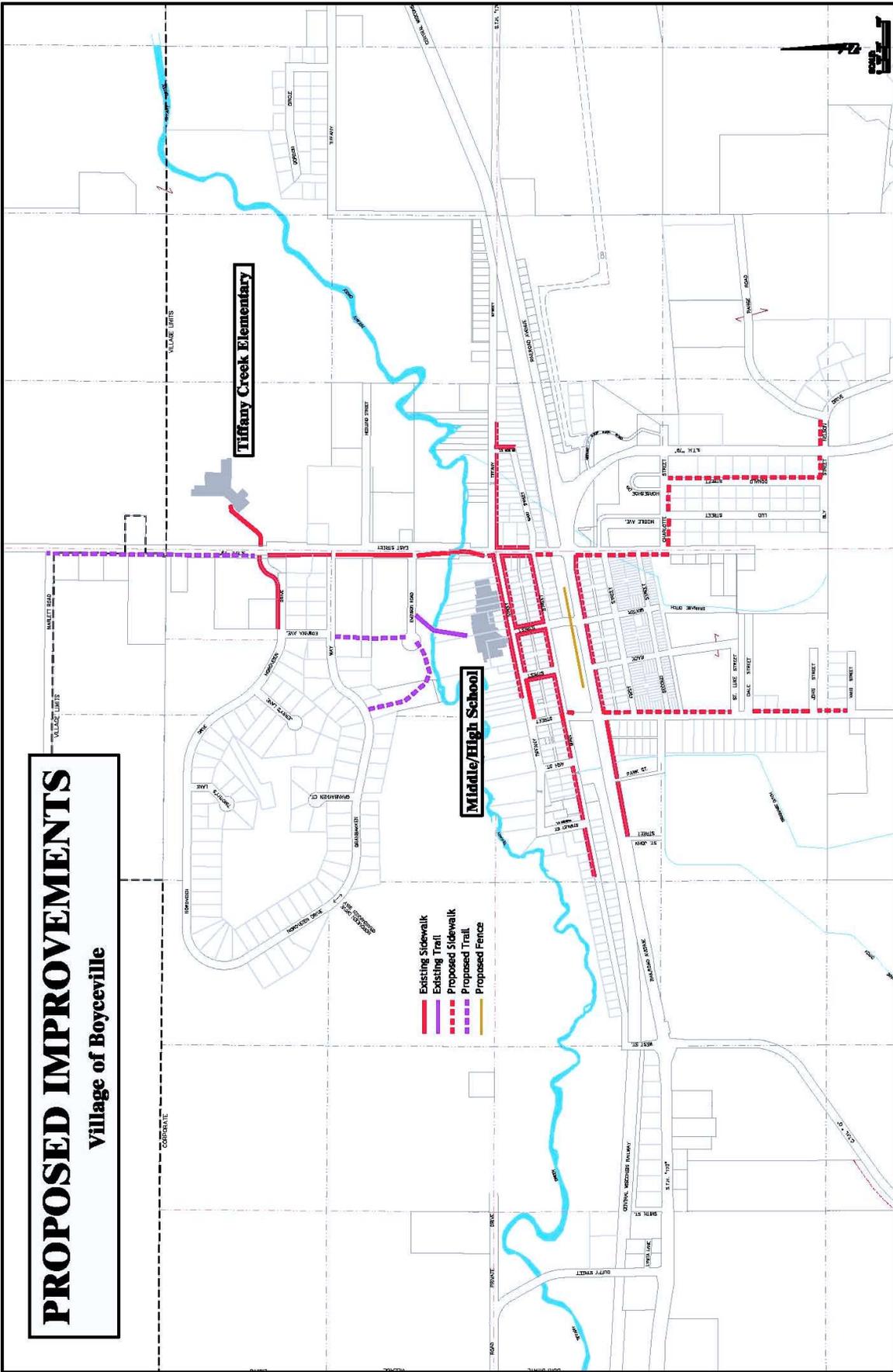
- *City of Menomonie Bicycle Routes and Multi-Use Trails Map, 2017*



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Appendix B

- *Village of Boyceville 2009 Comprehensive Plan Proposed Improvements Map*
- *Village of Boyceville 2009 Comprehensive Plan Future Roads & Trails Map*



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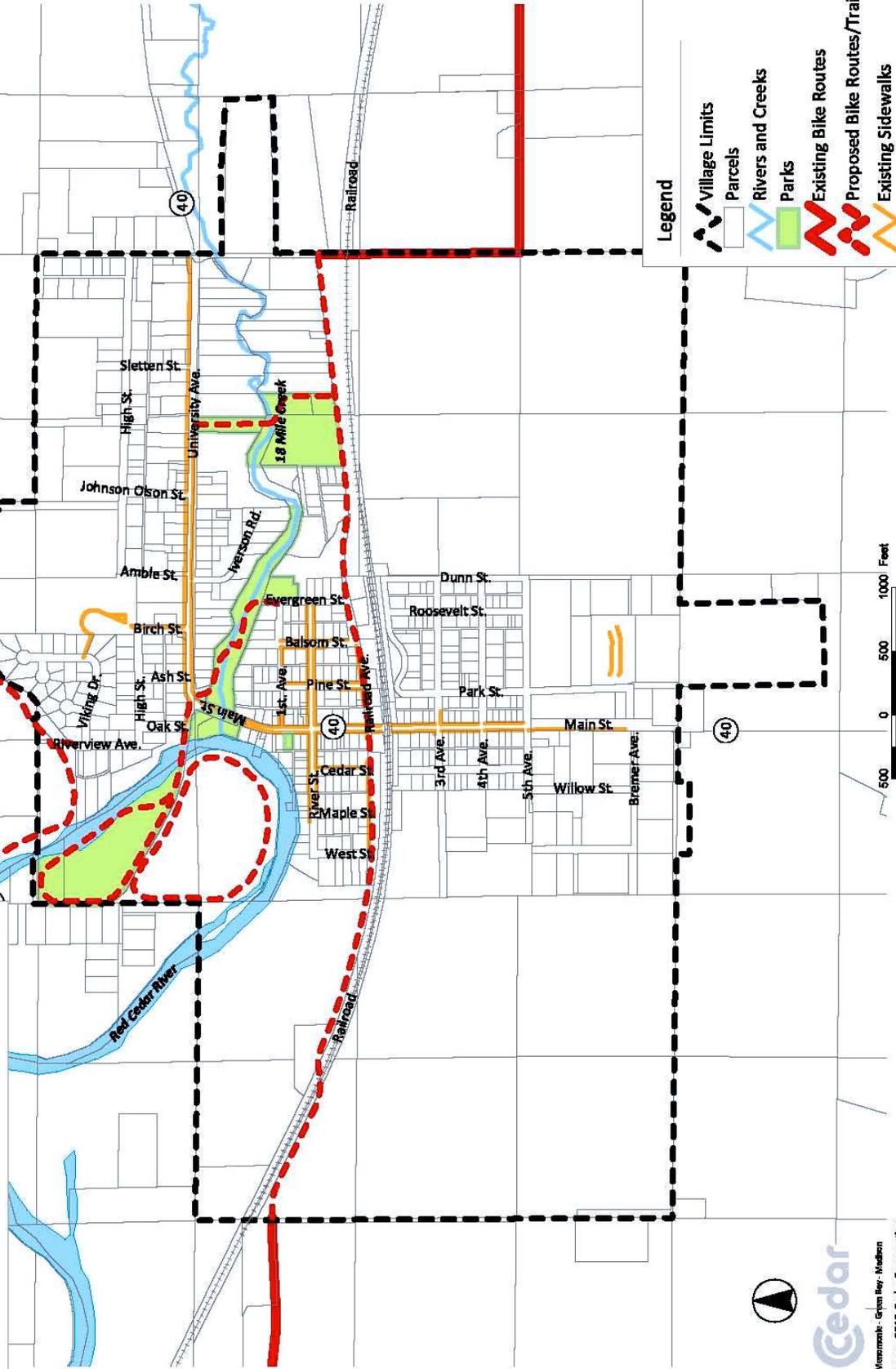
Appendix C

- *Village of Colfax 2014 Comprehensive Plan Sidewalks, Bicycle Routes, and Multi-Use Trails Map*

Sidewalks, Bicycle Routes and Multi-Use Trails

Village of Colfax
Map 4-3

Note: Some proposed multi-use trails are shown on private property in and outside the Village. These represent preferred locations that allow users to enjoy the natural resources of the community. Some of these trails cannot be built without the cooperation of property owners through the purchase of land or obtaining an easement.



Legend

- Village Limits
- Parcels
- Rivers and Creeks
- Parks
- Existing Bike Routes
- Proposed Bike Routes/Trails
- Existing Sidewalks

Appendix D

Bicycle Route Network Plan Projects

Project ID	Project Description	From Street	To Street	Facility Recommendation	Length (miles)	Cost Estimate (for Coordinated Projects)	Roadway Owner	Location
108	CTH V	860th St	10th St	4 Foot Shoulder	3.78	\$637,236	County	Town of Sand Creek
109	CTH V	Main St	705th St	4 Foot Shoulder	5.39	\$909,608	County	Village of Ridgeland, Town of Wilson
110	CTH V	1260th Ave	Village of Ridgeland Line	4 Foot Shoulder	13.55	\$2,286,576	County	Town of Sheridan, Town of Wilson
114	CTH Q	320th St	Hwy 64	4 Foot Shoulder	4.50	\$ 759,911	County	Town of New Haven
116	CTH W	Hwy 64	Hwy 170	4 Foot Shoulder	10.52	\$1,775,563	County	Town of Sand Creek, Town of Grant, Town of Colfax
117	CTH S	CTH S	CTH W	4 Foot Shoulder	3.10	\$523,368	County	Town of Otter Creek, Town of Grant
119	CTH SS to CTH S	1180th Ave	CTH N	4 Foot Shoulder	4.70	\$ 793,624	County	Town of Otter Creek
120	CTH N	Hwy 25	1020th Ave	4 Foot Shoulder	8.11	\$1,368,947	County	Town of Hay River, Town of Otter Creek, Town of Grant
124	CTH BB to CTH M to CTH H	850th Ave	Hwy 29	4 Foot Shoulder	12.51	\$2,111,830	County	Town of Colfax, Village of Colfax
125	CTH E	830th St	Hwy 40	4 Foot Shoulder	1.09	\$184,583	County	Town of Elk Mound
128	CTH HH	Hwy 12	906th St	4 Foot Shoulder	1.28	\$216,825	County	Town of Elk Mound
130	CTH H	Hwy 29	University St	4 Foot Shoulder	1.61	\$272,414	County	Town of Elk Mound, Village of Elk Mound
132	CTH H	270th Ave	Hwy 85	4 Foot Shoulder	2.21	\$373,072	County	Town of Spring Brook, Town of Rock Creek
136	CTH B	690th St	770th Ave	4 Foot Shoulder	0.96	\$161,885	County	Town of Tainter

Project ID	Project Description	From Street	To Street	Facility Recommendation	Length (miles)	Cost Estimate (for Coordinated Projects)	Roadway Owner	Location
137	CTH G	Hwy 25	800th Ave	4 Foot Shoulder	4.85	\$818,223	County	Town of Tainter
140	CTH J	Dairyland Rd	630th St	4 Foot Shoulder	5.00	\$843,899	County	Town of Red Cedar
144	CTH F	Hwy 170	700th Ave	4 Foot Shoulder	8.62	\$1,455,408	County	Town of Hay River, Town of Sherman, Town of Menomonie
146	CTH J	750th Ave	CTH F	4 Foot Shoulder	1.45	\$244,712	County	Town of Sherman, Town of Menomonie
147	CTH Y	Hwy 25	130th Ave	4 Foot Shoulder	10.16	\$1,714,897	County	Town of Dunn
148	CTH Z	Hwy 72	230th Ave	4 Foot Shoulder	3.09	\$521,129	County	Town of Dunn, Town of Eau Galle
150	CTH N	CTH Q	Hwy 79	4 Foot Shoulder	4.52	\$762,139	County	Town of Tiffany
154	CTH K	Hwy 170	CTH D	4 Foot Shoulder	17.28	\$2,917,340	County	Village of Boyceville, Town of Stanton, Town of Sherman, Town of Lucas, Town of Menomonie
157	CTH Q	Tainter St	Hwy 12	4 Foot Shoulder	7.62	\$1,286,924	County	Village of Downing, Town of Stanton
160	CTH Q	Hwy 12	Hwy 94	4 Foot Shoulder	2.66	\$449,837	County	Village of Knapp, Town of Stanton, Town of Lucas
161	CTH O	790th Ave	Hwy 12	4 Foot Shoulder	0.50	\$83,679	County	Town of Stanton, Village of Knapp
164	CTH Q	Hwy 29	CTH P	4 Foot Shoulder	1.31	\$221,541	County	Town of Lucas
166	CTH P	CTH K	Hofland Rd	4 Foot Shoulder	3.63	\$613,012	County	Town of Menomonie, City of Menomonie
167	CTH P	CTH K	CTH D	4 Foot Shoulder	20.57	\$3,472,594	County	Town of Weston, Town of Lucas, Town of Spring Lake, Village of Elmwood, Town of Rock Elm, Town of Eau Galle
168	CTH X	CTH P	CTH D	4 Foot Shoulder	6.14	\$1,036,173	County	Town of Weston
169	CTH D	440th Ave	130th Ave	4 Foot Shoulder	18.06	\$3,048,315	County	Town of Menomonie, Town of Weston, Town of Eau Galle

Project ID	Project Description	From Street	To Street	Facility Recommendation	Length (miles)	Cost Estimate (for Coordinated Projects)	Roadway Owner	Location
111	CTH F	Barron Dunn Aveq	CTH V	4 Foot Shoulder	1.37	\$230,602	Local	Town of Sheridan
118	1180th Ave	CTH SS	CTH S	4 Foot Shoulder	3.28	\$553,119	Local	Town of Otter Creek
121	1020th Ave to 1015th Ave	CTH N	765th St	4 Foot Shoulder	2.13	\$358,917	Local	Town of Grant
126	690th Ave	Hwy 40	910th St	4 Foot Shoulder	1.16	\$195,382	Local	Town of Elk Mound
134	110th Ave	Hwy 85	100th St	4 Foot Shoulder	1.51	\$254,466	Local	Town of Rock Creek
141	Dairyland Rd	9th St	CTH J	4 Foot Shoulder	1.33	\$223,664	Local	City of Menomonie
142	530th St	CTH BB	Bundy Ln	4 Foot Shoulder	1.81	\$305,986	Local	Town of Menomonie, City of Menomonie
159	Central St	CTH Q	A St	4 Foot Shoulder	0.14	\$23,018	Local	Village of Knapp
165	Hofland Rd	Hwy 29	530th Ave	4 Foot Shoulder	0.56	\$93,955	Local	City of Menomonie
112	CTH K	1260th Ave	Hwy 64	4 Foot Shoulder	0.17	\$28,255	Local	Town of New Haven
143	CTH BB	Hwy 25	540th St	7 Foot Shoulder	1.81	\$535,812	County	Town of Menomonie, Town of Red Cedar
113	Hwy 64	CTH Q	CTH K	7 Foot Shoulder	1.24	\$365,572	State	Town of New Haven
115	Hwy 64	CTH F	CTH F	7 Foot Shoulder	0.88	\$260,413	State	Town of Sheridan
122	Hwy 170	910th Ave	Village of Colfax Line	7 Foot Shoulder	0.30	\$89,657	State	Town of Colfax
133	Hwy 85	CTH H	190th Ave	7 Foot Shoulder	0.44	\$129,509	State	Town of Rock Creek
135	Hwy 85	910th St	939th St	7 Foot Shoulder	0.76	\$225,620	State	Town of Rock Creek

Project ID	Project Description	From Street	To Street	Facility Recommendation	Length (miles)	Cost Estimate (for Coordinated Projects)	Roadway Owner	Location
149	Hwy 79	770th Ave	750th Ave	7 Foot Shoulder	0.54	\$158,130	State	Town of Sherman
151	Hwy 79	CTH N	1037th Ave	7 Foot Shoulder	0.34	\$99,888	State	Town of Tiffany
156	Hwy 170	Wilson St	CTH Q	7 Foot Shoulder	0.25	\$73,800	State	Village of Downing
163	Hwy 29	CTH Q	CTH Q	7 Foot Shoulder	0.48	\$141,882	State	Town of Lucas
129	CTH H	906th St	CTH H	Off-road trail	0.06	\$28,845	County	Town of Elk Mound
170	CTH H	CTH H	Hwy 29	Off-road trail	0.05	\$23,219	County	Town of Elk Mound
131	Hwy 12	570th Ave	Division St	Off-road trail	1.33	\$657,491	Federal	Town of Elk Mound, Village of Elk Mound
139	Hwy 12	Look Out Rd	CTH E	Off-road trail	2.69	\$1,336,245	Federal	City of Menomonie, Town of Red Cedar
158	Hwy 12	CTH Q	CTH Q	Off-road trail	0.13	\$63,222	Local	Village of Knapp
162	Hwy 12	1st St	Boundary Rd	Off-road trail	0.49	\$243,447	Local	Village of Knapp
127	Hwy 40	620th Ave	CTH H	Off-road trail	0.82	\$405,526	State	Town of Elk Mound
145	Hwy 25	700th Ave	CTH BB	Off-road trail	0.76	\$375,842	State	Town of Menomonie
153	Hwy 79	Hedlund St	Tiffany St	Off-road trail	0.20	\$97,050	State	Village of Boyceville
138	Hwy 25	970th Ave	CTH G	Off-road trail	0.18	\$91,028	Unknown	Town of Tainter
155	Trail North of CTH G	320th St	Hwy 170	Off-road trail	1.01	\$502,099	Unknown	Town of Glenwood

Appendix E

E-Newsletter Examples

- **St. Paul Bicycle Coalition newsletter**
- **NJ Walks and Bikes Newsletter**



[View this email in your browser](#)



SAINT PAUL BICYCLE COALITION

Ride in Lieu of Monthly Meeting, Tues. Oct 16

In lieu of our monthly meeting, we're organizing an informal slow ride, leaving from the south steps of the State Capitol Building tomorrow, **Tuesday, October 16, at 6:30 PM.**

Walkable Communities Workshop

There will be a "Walkable Communities Workshop" on **Wednesday, October 24, 1-5pm**, McDonough Community Center, 1544 Timberlake Road, St Paul, MN 55117 saying "Join us for a community workshop focused on safer streets around McDonough Homes in the North End. Questions? Contact Betsy, PHA SHIP Office 651-298-4030

46th Street Study in South Minneapolis West of Ford Parkway Bridge

MinHiLine is urging folks to send comments on improvements they'd like to see to 46th Street in South Minneapolis. Hennepin County is doing a study of this street with a possible eye towards improving bike/pedestrian connections between the Ford Parkway Bridge and the 46th Street Blue Line LRT station.

Because many of us use the Ford Parkway Bridge to access Minneapolis and the LRT station, it seems like we have an interest in the outcome of this study, particularly given that the eventual housing development of the Ford Plant site will generate more bike and pedestrian traffic across this bridge and to/from the LRT. The study outline and contact information can be found at--
<https://www.hennepin.us/e46streetstudy>

Other News

- Bicycling could help save the planet says IPCC climate report--
<https://www.forbes.com/sites/carltonreid/2018/10/08/bicycling-could-help-save-the-planet-says-ippc-climate-report/#186d7ec62795>
- Thus, Safe Streets are one of the best tools we have to combat Climate Change-- <https://www.curbed.com/2018/10/10/17957532/climate-change-street-design-vision-zero>
- A court has found bad street design was partly liable for a boy's severe injuries when he was struck by a motor vehicle in New York City--
<https://www.curbed.com/2017/1/6/14194154/nyc-vision-zero-street-design-urban-planning>
- Metro Gold Line BRT is seeking community input for two different possible routes in downtown St Paul--
<https://www.surveymonkey.com/r/GoldLine5>





NJ BICYCLE & PEDESTRIAN RESOURCE CENTER

Educate. Encourage. Empower.

Issue: 74

September 30, 2016

QUICK LINKS

Who We Are
Complete Streets
NJAIM
BPAC

Reports
Bikes on Buses Video
Media Library



THE BPRC TEAM

Charles Brown
Senior Research
Specialist

James Sinclair
Project Coordinator

Nimotalai Azeez
Research Assistant

Robin Basalaev-
Binder
Research Assistant

Jeremy Glover
Research Assistant

Jasmine Jones-Bynes
Research Assistant

Michelle Mayer
Research Assistant

**Alan M. Voorhees
Transportation Center**



Dear Readers,

Welcome to this issue of the NJ Walks and Bikes Newsletter, a bi-weekly service prepared by the New Jersey Bicycle and Pedestrian Resource Center (NJBPRC). If you would like to learn more about NJBPRC, please visit us [here](#).

New Brunswick Ciclovía wraps up 2016 with its fourth event

Ciclovía returns this Sunday, October 2nd

New Brunswick's free open streets event, Ciclovía, returns this Sunday for its final event of 2016. From 11 a.m. to 4 p.m. on October 2, multiple streets in downtown New Brunswick will be converted into car-free avenues.

Along the route, pedestrians, bicyclists, and everyone in-between are invited to enjoy streets at their leisure. Participants will be able to walk, run, bicycle, skip, roller blade, and simply access major city streets that are normally dedicated to cars. The event creates and celebrates open



streets in New Brunswick, supporting the development of a more livable, active, and safe community.

Map of the October route

The event organizers are hoping for sunny skies, but Ciclovía will take place regardless of the weather.

[Please click here](#) for more details about the event.

E-bikes in New Jersey

Electric bike usage is on the rise; but NJ laws about them remain unclear

Electric bicycles (e-bikes) are growing in popularity around the globe. They allow riders to travel farther with less effort than a traditional bicycle, making them ideal for commuters worried about looking unpresentable, riders with mobility issues that make traditional cycling



Electric bicycles

impossible or daunting, and delivery workers with long shifts. Using e-bikes for trips usually made by car can decrease emissions of greenhouse gases and particulate matter; they fit in with national efforts to live greener and healthier lives.

Why are they slow to catch on in the United States? It may have to do with our legislation and regulations, which have been slow to adapt to changing technologies.

In New Jersey, e-bikes need to be registered with the Motor Vehicle Commission, but they cannot be registered due to their electric motor. This leaves e-bikes in a legal gray area.

Find out more by [reading the full article here](#).

Downtown Trenton Bicycle and Pedestrian Plan

Plan to be incorporated into upcoming Trenton 250 Master Plan

The Delaware Valley Regional Planning Commission has published the Downtown Trenton Bicycle and Pedestrian Plan in collaboration with the City of Trenton. The plan is intended to guide and influence bikeway policies, programs, and development standards. The

goal is to make bicycling in downtown Trenton safer, more comfortable, convenient, and enjoyable for all bicyclists. The ultimate goal of this plan is to increase the number of persons in Trenton who bicycle to work, to school, for errands, and for recreation.



Proposed bicycle lanes for Trenton

[Please click here](#) to learn more.

New Municipal Technical Assistance Program: Safe Routes to Transit

DVRPC is soliciting requests to receive technical assistance

You already know the problems your constituents encounter when they try to walk or bike to the train station. But developing solutions and identifying funding to design or construct those solutions can be intimidating. DVRPC's Safe Routes to Transit (SRTT) program can help identify potential improvements in your community, navigate the complex funding process, and bridge the gap between idea and implementation.



Philadelphia. Paul Reitano Photography

SRTT is a new program offering technical planning assistance to counties and municipalities as they develop projects that enhance bicycle and pedestrian access to rail stations. DVRPC will help counties or municipalities shape and/or perform planning-level design on these projects in order to strengthen applications to competitive funding sources.

The Commission invites counties and municipalities within the region to submit an online application identifying weaknesses in the transportation network that impede pedestrian and bicycle access to train stations. DVRPC will evaluate and select candidate stations based on these submissions and on the project sponsor's demonstrated commitment to pursue final design and construction immediately following DVRPC's study.

[Head to the DVRPC website](#) for more information.

Bike/Ped Newsfeed 

September 1 - September 30, 2016

[Road Warrior: Road deaths take an alarming turn](#)

September 15, 2016 - Northjersey.com

"With the help of seat belts and other technologies, road fatalities have been falling as steadily as autumn leaves for nearly half a century. So some folks were surprised last month when federal authorities announced that this trend had reversed course by more than 7 percent last year for the first time since 1966. What happened? Why are traffic deaths becoming more commonplace?"

[N.J. distracted driving bill isn't about your coffee, frustrated lawmakers insist](#)

September 22, 2016 - NJ.com

"It's the smartphone, stupid. Not your coffee. That's the message experts gave to lawmakers in the state Assembly, where a much-mocked and little-understood distracted driving bill was under discussion Thursday. Hearing expert testimony from both the National Transportation Safety Board and the AAA of New Jersey, it was hard to assign blame for the 8.8 percent increase in traffic fatalities this year to anything other than distracted driving caused by smartphone usage."

[Student waiting for school bus clipped by passing truck](#)

September 6, 2016 - NJ.com

"A student suffered a minor injury when she was struck by the mirror of a passing truck as she waited for her school bus Tuesday morning, township police said. The incident happened shortly before 7 a.m. while the 14-year-old Delsea Regional High School student waited for her bus on Tuckahoe Road between Grant and Birch avenues."

For more local NJ bike/ped headlines, national news, opinion pieces, and the crash report, [click here!](#)

BPRC - Now Active on Social Media!

Friend and follow us!

We have recently expanded our presence on both Twitter and Facebook!

You can find us at:

<https://www.facebook.com/nibikeped/>

and at:

<https://twitter.com/nibikeped>



Our Facebook page

Complete Streets in New Jersey

An up-to-date list of Complete Streets policies in New Jersey

There are currently **130** municipalities and 7 counties with Complete Streets policies in New Jersey. The Borough of Woodstown, the first municipality in Salem County to pass a Complete Streets policy, and the Borough of Gibbsboro in Camden County are the most recent additions.



This brings the total New Jersey population living in municipalities with Complete Streets policies to over 3.4 million people, or 39% of the population. Essex and Bergen Counties lead the way with 13 municipalities having adopted policies each, followed by Mercer County with 12.

To access the most up-to-date list of Complete Streets policies adopted in the state, please [click here](#).

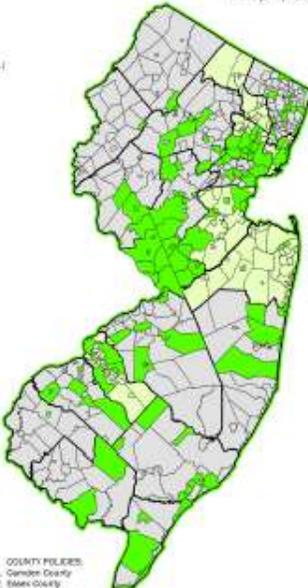


New Jersey Complete Streets Policies as of June 21, 2016



www.njdotped.org

- | | |
|----------------------------------|---------------------------------------|
| 1. City of Albany Park | 66. Township of Maplewood |
| 2. City of Atlantic City | 67. City of Margate |
| 3. Borough of Bay Head | 70. Borough of Marlboro |
| 4. Township of Beachwood | 71. Township of Medford |
| 5. Borough of Bergenfield | 72. Borough of Medford Hills |
| 6. Township of Bloomfield | 73. Township of Middlesex |
| 7. Township of Bound Brook | 74. Township of Milltown |
| 8. Borough of Bound Brook | 75. Township of Monroe Gloucester Co. |
| 9. Borough of Buena | 76. Township of Moorestown |
| 10. Borough of Caldwell | 77. Township of Morristown |
| 11. Borough of Carlisle | 78. Township of Montgomery |
| 12. City of Camden | 79. Borough of Morristown |
| 13. City of Cape May | 80. Town of Morrisville |
| 14. Borough of Chatham | 81. Borough of Mount Arlington |
| 15. Township of Cherry Hill | 82. Borough of New Milford |
| 16. Township of Chester | 83. Borough of Netcong |
| 17. Township of City of Orange | 84. City of New Brunswick |
| 18. Township of Clinton | 85. Borough of New Providence |
| 19. Township of Dennisville | 86. City of Newark |
| 20. Town of Dover | 87. City of North Wildford |
| 21. Township of Dover | 88. City of Northvale |
| 22. Township of East Amwell | 89. Borough of Northvale |
| 23. City of East Orange | 90. City of Plain City |
| 24. Township of East Windsor | 91. Princeton Township |
| 25. City of Egg Harbor | 92. Borough of Parsippany |
| 26. City of Elizabeth | 93. City of Perth Amboy |
| 27. Borough of Emerson | 94. Township of Plainsboro |
| 28. Township of Ewing | 95. City of Plainsboro |
| 29. Borough of Fair Haven | 96. Borough of Point Pleasant Beach |
| 30. Borough of Fair Hills | 97. Borough of Point Pleasant |
| 31. Borough of Fairwood | 98. Borough of Princeton |
| 32. Borough of Farmington | 99. Township of Princeton |
| 33. Borough of Fox Law | 100. Township of Roseland |
| 34. Township of Franklin | 101. Borough of Rutherford |
| 35. Borough of Freehold | 102. Township of Rutherford |
| 36. Borough of Freehold | 103. Borough of Rutherford |
| 37. City of Garfield | 104. Village of Ridgewood |
| 38. Borough of Glassboro | 105. Borough of River Edge |
| 39. Borough of Glassboro | 106. Township of Robbinsville |
| 40. Borough of Glen Ridge | 107. Borough of Roselle |
| 41. Township of Gloucester | 108. Borough of Rutherford |
| 42. City of Hackensack | 109. Borough of Sea Bright |
| 43. Town of Hackensack | 110. Town of Secaucus |
| 44. Borough of Hasbrouck Heights | 111. City of Somers Point |
| 45. Township of Hamilton | 112. Borough of Somerville |
| 46. Town of Hanover | 113. Township of South Orange Village |
| 47. Borough of Haddon Heights | 114. City of Somers |
| 48. Borough of Highland Park | 115. Borough of Tansey |
| 49. Borough of Hightstown | 116. Township of Toms River |
| 50. Township of Hillsborough | 117. City of Trenton |
| 51. City of Hoboken | 118. City of Union City |
| 52. Borough of Hopalong | 119. City of Vineland |
| 53. Borough of Hopewell | 120. Township of Voorhees |
| 54. Township of Hopewell | 121. Township of West Orange |
| 55. Township of Irvington | 122. Township of West Windsor |
| 56. City of Jersey City | 123. Township of West Windsor |
| 57. Township of Lacey | 124. Town of Westfield |
| 58. Township of Lakewood | 125. City of Wildwood |
| 59. City of Lambertville | 126. Borough of Wildwood |
| 60. Township of Lawrence | 127. Township of Woodbridge |
| 61. City of Linden | 128. City of Woodbury |
| 62. City of Linwood | 129. Borough of Woodstown |
| 63. Township of Livingston | 130. Township of Woodstock |
| 64. Township of Long Hill | |
| 65. Borough of Madison | |
| 66. Township of Marlton | |
| 67. Borough of Matawan | |



- COUNTY POLICIES:**
1. Camden County
 2. Essex County
 3. Hudson County
 4. Mercer County
 5. Middlesex County
 6. Monmouth County
 7. Passaic County
- Legend:**
- NJDOT Complete Streets Policy
 - County Complete Streets Policies
 - Municipal Complete Streets Policies



Voorhees Transportation Center, 33 Livingston Avenue, New Brunswick, NJ 08901

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