



# **BICYCLE AND PEDESTRIAN PLAN**

Chippewa-Eau Claire Metropolitan Planning Area 2017-2027



**MPO** | Chippewa - Eau Claire  
Metropolitan Planning Organization

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**Bicycle and Pedestrian Plan 2017-2027**  
**Chippewa-Eau Claire Metropolitan Planning Organization**

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# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	i
<b>CHAPTER 1 – INTRODUCTION AND BACKGROUND</b> .....	1
1.1 Benefits of Active Transportation.....	1
1.2 Why Now? .....	2
1.3 Purpose.....	3
<b>CHAPTER 2 – VISION, GOALS, AND OBJECTIVES</b> .....	5
<b>CHAPTER 3 – EXISTING CONDITIONS</b> .....	9
3.1 Current Levels of Walking and Bicycling .....	9
3.1.1 Population and Demographic Characteristics .....	9
3.1.2 Commute Mode Share .....	12
3.1.3 Trail Counts .....	14
3.1.4 Bicycling Heat Map .....	14
3.1.5 Health and Equity .....	16
3.2 Existing Facilities.....	17
3.2.1 Off-Street Paved Trails .....	17
3.2.2 On-Street Bikeways .....	21
3.2.3 Sidewalks .....	24
3.2.4 Intersections and Crossings.....	24
3.2.5 Related Facilities.....	27
3.3 Summaries of Relevant Plans, Policies, and Programs.....	31
3.3.1 Plans.....	31
3.3.2 Policies.....	32
3.3.3 Programs .....	33
3.4 Crash Analysis .....	36
3.4.1 Type .....	37
3.4.2 Location .....	38
3.4.3 Demographics .....	41
3.4.4 Time and Conditions.....	43
3.4.5 20-Year Crash Analysis .....	44
3.4.6 Wisconsin Pedestrian and Bicycle Crash Analysis: 2011-2013.....	44
3.4.7 Vision Zero .....	46
3.5 Assessment of Current Bicycle and Pedestrian Friendliness .....	47

3.5.1 Bicyclist Stress Level.....	47
3.5.2 Bike Network Analysis .....	54
3.5.3 Walk Score.....	57
3.6 Public Engagement .....	59
3.6.1 Open Houses .....	59
3.6.2 Online Survey Results.....	59
3.6.3 WikiMap .....	60
<b>CHAPTER 4 – RECOMMENDATIONS</b> .....	<b>65</b>
<b>CHAPTER 5 – IMPLEMENTATION</b> .....	<b>69</b>
5.1 Implementation Principles .....	69
5.2 Funding Sources.....	70
5.2.1 Federal Funding Administered by State Agencies.....	70
5.2.2 State Funding Sources.....	73
5.2.3 Local Funding Sources .....	74
5.2.4 Non-Governmental Funding Sources.....	74
5.3 Costs for Pedestrian and Bicyclist Infrastructure Improvements.....	76
<b>CHAPTER 6 – EVALUATION AND MONITORING</b> .....	<b>79</b>
6.1 Performance Measures.....	79
6.2 Performance Standards .....	80

## APPENDICES

<b>APPENDIX A – ADVISORY TEAM</b> .....	<b>A-1</b>
<b>APPENDIX B – SUMMARIES OF RELEVANT PLANS</b> .....	<b>B-1</b>
<b>APPENDIX C – PUBLIC ENGAGEMENT</b> .....	<b>C-1</b>
<b>APPENDIX D – BICYCLE DESIGN GUIDELINES</b> .....	<b>D-1</b>
<b>APPENDIX E – FEDERAL HIGHWAY ADMINISTRATION PEDESTRIAN AND BICYCLE RESEARCH AND PROGRAM ACTIVITIES</b> .....	<b>E-1</b>

## FIGURES

Figure 1: Population Table.....	9
Figure 2: Population Trends and Projections Table.....	9
Figure 3: Population Trends and Projections Chart.....	11
Figure 4: Population Pyramid Charts.....	11
Figure 5: Commute Mode Share Chart.....	12
Figure 6: Walk and Bike to Work across Wisconsin Chart .....	13
Figure 7: Walk to Work and Bike to Work Charts .....	13
Figure 8: Trail Counts Chart.....	14

Figure 9: Bicycling Heat Map.....	15
Figure 10: County Health Data Table .....	16
Figure 11: Off-Street Paved Trail Mileage Table .....	18
Figure 12: Proposed Off-Street Paved Trail Mileage Table .....	18
Figure 13: On-Street Bikeways Mileage Table.....	21
Figure 14: On-Street Bikeway Facilities.....	22
Figure 15: On-Street Bikeways.....	23
Figure 16: Road Diet.....	28
Figure 17: Traffic Calming Measures .....	29
Figure 18: Preferred Bike Racks at Sam Davey Elementary School .....	29
Figure 19: Generally Unacceptable Bike Racks .....	30
Figure 20: Bike Fixit Station.....	30
Figure 21: Eau Claire Transit Bus with Bike Rack.....	30
Figure 22: Bike Share by BCycle Dash .....	31
Figure 23: Chippewa Falls Safe Routes to School Map .....	34
Figure 24: Altoona Safe Routes to School.....	34
Figure 25: Eau Claire Safe Routes to School Map .....	35
Figure 26: Crash Rate Chart .....	36
Figure 27: Pedestrian Injuries at Impact Speeds Chart .....	38
Figure 28: Crashes by Municipality Chart.....	38
Figure 29: Crashes by Age Chart.....	42
Figure 30: Crashes by Time of Day Chart .....	43
Figure 31: Crashes by Month Chart.....	43
Figure 32: Bicycle and Pedestrian Crashes Chart.....	44
Figure 33: Fatal Pedestrian and Bicyclist Crash Types .....	45
Figure 34: Types of Bicyclists Chart .....	48
Figure 35: Types of Bicyclists Table .....	48
Figure 36: Bicycle Riding Confidence Level Chart.....	48
Figure 37: Bicycle Conditions Ratings Table.....	49
Figure 38: Level of Traffic Stress Criteria Table.....	50
Figure 39: Generalized Bicycling Conditions for Rural Roadways Table.....	50
Figure 40: Correlation between Urban and Rural Traffic Stress Ratings Table .....	50
Figure 41: Street Mileage by Bicyclist Comfort Level Table.....	53
Figure 42: Bicycle Facilities by Bicyclist Type and Street Characteristics .....	53
Figure 43: Bike Network Analysis Scoring Categories and Eau Claire Score .....	55
Figure 44: Walk Score Description.....	57
Figure 45: Walk Score Map .....	58
Figure 46: Online Survey Summary and Eau Claire Urbanized Area Demographics Table .....	59
Figure 47: 2011-2014 Wisconsin Statewide Transportation Improvement Program Chart.....	73
Figure 48: Potential Federal Funding Sources for Bicycle and Pedestrian Projects.....	75
Figure 49: Estimated Costs for Pedestrian and Bicyclist Infrastructure Improvements Table .....	76
Figure 50: Vision to Evaluation .....	79

## MAPS

Map 1: Metropolitan Planning Area .....	10
Map 2: Bicycle Facilities .....	19
Map 3: Highway Crossings.....	26
Map 4: Bicyclist and Pedestrian Crashes, 2011-2015.....	39
Map 5: Bicyclist Stress Level .....	51
Map 6: Bike Network Analysis.....	56
Map 7: WikiMap – Current Routes and Destinations.....	61
Map 8: WikiMap – Barriers and Desired Routes.....	63

# EXECUTIVE SUMMARY

## Introduction and Background

Walking is the original and most fundamental mode of transportation. Nearly every trip includes walking. Therefore, we are planning for everyone when we plan for pedestrians and people who use wheelchairs or other mobility devices. Bicycling is a faster mode of transportation than walking, so it can meet many transportation needs, particularly for the short-distance trips that make up the majority of our trips. On top of providing transportation, walking and biking provide benefits to health, safety, economic development, and the environment.

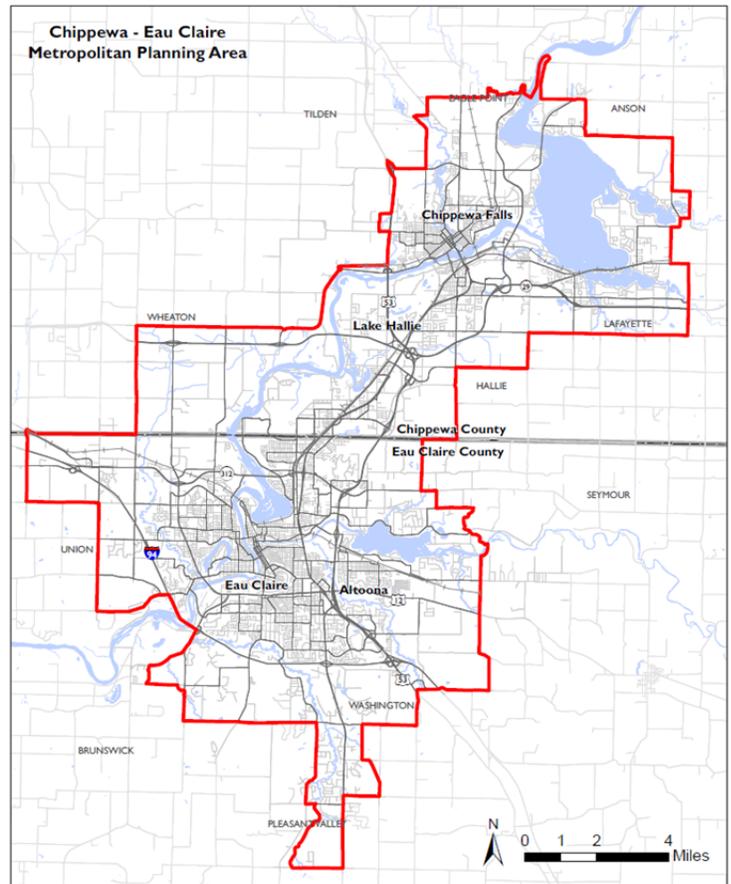
This plan builds on more than 20 years of bicycle and pedestrian planning in the metropolitan area (see sidebar). An extensive trail network has been built, and the final gap between Lake Hallie and Chippewa Falls will soon be completed. The sidewalk network has also been expanded.

Despite this expansion, more and better infrastructure for walking and biking are needed. In concert with infrastructure projects, improved bicycle and pedestrian programming would help educate people about safe walking and biking, encourage people to choose to walk and bike, and enforce traffic laws to help keep streets safe for all users. Policies can be put in place to institutionalize walking and biking as high-priority modes of transportation and recreation.

## Existing Conditions

As of the 2010 Census, the population of the Metropolitan Planning Area (MPA) was nearly 112,000 in an area covering over 160 square miles. Population in this area is projected to continue growing and is expected to be near 125,000 by 2027, the outer edge of this plan's time frame.

Census data show the Eau Claire Urbanized Area has a walk-to-work rate of 4.0%, higher than both the Wisconsin and national rates. Its bike-to-work rate is 0.8%, equal to the Wisconsin rate and higher than the national rate. These rates equate to 2,200 walking commuters and 440 bicycle commuters.



## Bicycle and Pedestrian Plans

- *Bicycle Transportation Plan for the Eau Claire Urbanized Area, 1995-2020*
- *Chippewa Falls Bicycle and Pedestrian Plan (1995)*
- *Chippewa Valley Trail System Master Plan (Wisconsin DNR, 1996)*
- *City of Eau Claire Bicycle and Pedestrian Plan (2010)*
- Safe Routes to School plans
  - Chippewa Falls (2015)
  - Altoona (2017)
  - Eau Claire (2017)
- *Altoona Parks, Recreation, and Trails Master Plan (2017)*
- *Chippewa, Dunn, and Eau Claire Counties Bicycle and Pedestrian Plan (2017)*

The existing bicycle and pedestrian facilities in the Metropolitan Planning Area include off-street trails that accommodate people walking and biking, on-street bikeways including bike lanes and sharrows (marked, shared lanes), and pedestrian facilities such as sidewalks and crosswalks.

- **Off-street paved trails** include portions of two state trails, the Chippewa River State Trail and the Old Abe State Trail. Additional off-street trails that are not part of the state trail system have also been developed by local units of government. The total mileage of this off-street paved trail network within the MPA is 63.7 miles. Proposed off-street trails for future construction total 35.6 miles. Trail issues include maintenance, signage, challenging street crossings, and funding for expansion. (See page 17.)



- **On-street bikeways** like bike lanes and sharrows have been established in Chippewa Falls and Eau Claire. Their current mileage totals 17.7 miles. The City of Altoona has plans to establish bike lanes on 3.8 miles of its streets. Expanding the network of on-street bikeways will provide safe access by bicycle to more destinations and make bicycling a more viable transportation option. Recent research recommends reducing use of sharrows due to safety concerns. (See page 21.)



- **Pedestrian facilities** such as sidewalks and crosswalks are the primary means of transportation for people who walk, in addition to off-street trails. The City of Eau Claire has a total of 367 miles of sidewalks, and Chippewa Falls has a total of 56 miles of sidewalks. Numerous gaps in the sidewalk network exist and need to be filled. Painted crosswalks are intended to designate where people are meant to cross the street. Crosswalk issues include drivers failing to yield, lax enforcement, inadequate maintenance, and an absence of clear and consistent policy determining their placement. (See page 24.)



## ***Safety and Crashes***

One of the most significant impediments to walking and biking is a lack of safety. People walking and biking are inherently vulnerable on a road system dominated by motor vehicles. Many people choose not to walk or bike due to a lack of adequate facilities – such as off-street trails, on-street bikeways, or sidewalks – that would improve safety for people walking and biking.

Nationally, the number of fatal crashes among pedestrians and bicyclists has been trending up since 2009-2010, according to the U.S. Department of Transportation. Former U.S. Secretary of Transportation Anthony Foxx put it this way, “This is the safest time for transportation in history, except for pedestrians and bicyclists.”

In the Metropolitan Planning Area, for the five year period from 2011 through 2015, there were 203 reported crashes between people biking or walking and people driving on roads and streets, including four fatalities. This is an average of 41 crashes per year. Other facts about these crashes include the following. (See page 36 for more details.)

- *Crash victims*
  - Pedestrian: 52%, Bicyclist: 48%
  - Male: 65%, Female: 35%
  - Age: 29 or younger: 67%, 30 or older: 33%
- *Municipality*: Eau Claire: 77%, Chippewa Falls: 12%, Lake Hallie: 3%, Altoona: 2%, Towns: 6%
- *Location*: Intersection: 67%, Non-intersection: 33%
- *Time of day*: The three hours with the highest percentage of crashes were the consecutive hours of 3:00, 4:00, and 5:00 PM. Those three hours account for 11%, 7%, and 8% of the crashes respectively, or 26% combined.
- *Month*: The highest prevalence of crashes occurs during late spring/early summer – May and June (20%) – and late summer/fall – August, September, and October (35%).
- *Hit-and-run*: Of the 203 reported crashes, 21% were hit-and-run crashes, in which the person driving fled the scene after hitting the person walking or biking. In addition to the need to reduce crashes, it is imperative for the survival of the victim to reduce hit-and-run crashes.

In 2014, the rate of fatal or injurious bicycle and pedestrian crashes in the MPA was 30.5 per 100,000 population, somewhat lower than the Wisconsin rate of 34.1 and the national rate of 37.8.

When planning bicycle facilities to make riding safer and reduce crashes, it is important to design facilities that will meet the needs of the broader public. Most people are interested in bicycling but concerned about the safety of riding. These “Less confident” riders are described here, along with the other two main types of bicyclists:

### **Types of Bicyclists**

Less confident	Only feel safe on separated paths/trails with few traffic crossings
Moderately confident	Prefer separated paths, but will ride on roads where space is available or bike lanes are provided and traffic is manageable
Most confident	Confident and comfortable riding with traffic in most situations, even without bike lanes

The Bicycle Level of Traffic Stress assessment was developed with the needs of these different bicyclists in mind. Its ratings are based primarily on traffic volume, posted speed limit, number of travel lanes, width of the roadway, and presence of bike lanes. This analysis was performed on streets that are functionally classified as collectors, minor arterials, or principal arterials (some major highways were not included). This table shows the total mileage and percentage of such streets in the MPA. (See page 47.)

**Street Mileage by Bicyclist Comfort Level**

<b>Rating</b>	<b>Miles</b>	<b>Percent of Total</b>
1 - Comfortable for most ages and abilities	65	11%
2 - Comfortable for most adults	255	41%
3 - Suitable for experienced cyclists	164	27%
4 - High stress	132	21%
Total	616	100%

To improve the connectivity of the street network for bicyclists, it will be important to lower the stress level on vital routes. Some ways of doing that include traffic calming, reduced speed limits, installation of on-street bicycle facilities such as bike lanes, or other treatments appropriate to the conditions.

**Public participation** was essential to the development of this plan. The information gathered from more than 280 participants through various techniques has guided and shaped the plan. The primary modes of outreach were open-house-format meetings, an online survey, and an online WikiMap. Through news media coverage of the plan in five print and television stories, more people learned about the planning effort. This involvement and awareness will be important to build support for the implementation of the plan. (See page 59.)

With the guidance of the Advisory Team, the plan adopted the following Vision and Goals. The related objectives, specific actions, responsible entities, and a timeline for implementing these are included in the plan. (See page 65.)

***Vision***

In 2027, in the Chippewa-Eau Claire Metropolitan Planning Area, people of all ages, abilities, incomes, and backgrounds will safely enjoy walking and biking on our area’s well-connected transportation network of off-street trails, on-street bikeways, and sidewalks for everyday transportation needs, recreation, health, quality-of-life, environmental benefit, and economic generation.

***Goals***

- **Improve safety and comfort for bicyclists and pedestrians** with facilities, education, and enforcement designed to reduce crashes with drivers; improve safe walking, biking, and driving practices; and eliminate preventable pedestrian and bicyclist deaths
- **Expand the connectivity of the bicycle and pedestrian transportation network** to provide improved access to destinations through better use of existing facilities and construction of new facilities to complete the network
- **Increase the number of people walking and biking** for transportation, recreation, health, overall community quality-of-life, environmental benefit, and economic generation; use direct encouragement, accommodation, planning, and policy change

# CHAPTER 1 – INTRODUCTION AND BACKGROUND

## 1.1 Benefits of Active Transportation

Walking is the original and most fundamental mode of transportation. Nearly every trip includes walking. Therefore, we are planning for everyone when we plan for pedestrians and people who use wheelchairs or other mobility devices. Bicycling is a faster mode of transportation than walking, so it can meet many transportation needs, particularly for the short trips that make up the majority of our trips. On top of providing transportation, walking and biking provide benefits to health, safety, economic development, and the environment.

Some of the benefits experienced by the individuals who walk or bike for transportation and recreation include:

- Improved personal health
- Increased mobility and access, particularly for youth, older adults, and the financially constrained, thereby increasing social equity
- Money saved on transportation
- Increased opportunities for social interactions
- Enjoyment

More broadly, empowering people to substitute active transportation trips for automobile trips has the potential to provide numerous public benefits:

- Increased transportation options
- Improved safety for all road users
- Reduced traffic congestion
- Improved access to public transit
- Decreased air, water, and noise pollution
- Support of climate change emission reduction goals
- Stimulation of the local economy
- Increased opportunities for tourism
- Revitalization of urban areas
- Decreased road maintenance costs
- Avoidance of the high costs of roadway and/or transit capacity expansions

Recognition of these personal and public benefits is widespread and growing. Interest in walking and biking and demand for improved accommodations is growing along with this recognition. Citizens, advocacy groups, and public health professionals are among those urging our communities to invest in active transportation for a high quality of life and an enhanced public image. Active transportation provides responses to challenging issues of our time, making it likely that support for walking and biking will continue to grow.

## 1.2 Why Now?

The time is right to take another step forward for bicycle and pedestrian planning in the Chippewa-Eau Claire Metropolitan Planning Area.

The first foray into bicycle planning by the Metropolitan Planning Organization (MPO) came in 1995 with the *Bicycle Transportation Plan for the Eau Claire Urbanized Area, 1995-2020*. That same year, Chippewa Falls wrote its first bicycle and pedestrian plan. In 1996, the Wisconsin Department of Natural Resources wrote the *Chippewa Valley Trail System Master Plan*, which kicked off trail construction in the area.

More recently, Eau Claire established a Bicycle and Pedestrian Advisory Commission (2006) and wrote a bicycle and pedestrian plan (2010). Safe Routes to School planning was conducted in Altoona (2008), Chippewa Falls (2015), and Eau Claire (2002-2006). The *Chippewa Valley Bike Map* was designed and produced in 2015, providing bicycle comfort ratings to streets in the area for the purpose of selecting good travel routes. The multimodal *Long Range Transportation Plan for the Chippewa-Eau Claire Metropolitan Planning Area – 2045*, adopted in 2016, recommended the completion of a bicycle and pedestrian plan for the metropolitan area.

In the 20+ years since those initial plans, much progress has been made. The area’s state trail system – including the Chippewa River State Trail, Old Abe State Trail, and Red Cedar State Trail – is nearly complete. The established trails extend through the metropolitan area to Menomonie, Durand, and Cornell. The final gap between Lake Hallie and Chippewa Falls has received funding and will be built within the next three years. The cities of Eau Claire, Chippewa Falls, and Altoona; the Village of Lake Hallie; and several towns have all built miles of paved trails in addition to the state trail corridor. On-street bicycle facilities, namely bike lanes and sharrows, have been installed. The extent of the sidewalk network has been broadened.

Despite all this, more and better infrastructure for walking and biking are needed. In concert with infrastructure projects, improved bicycle and pedestrian programming would help educate people about safe walking and biking, encourage people to choose to walk and bike, and enforce traffic laws to help keep streets safe for all users. Policies can be put in place to institutionalize walking and biking as high-priority modes of transportation and recreation – “Complete Streets” is a strong policy example, as it helps ensure that streets are designed with all users in mind: people who walk, bike, take public transit, or drive.

### **Complete Streets are streets for everyone.**

They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.  
-National Complete Streets Coalition

More bicycle and pedestrian planning efforts are upcoming or underway. Eau Claire, Chippewa, and Dunn counties will write individual plans and a combined regional plan, coordinating with the recently-completed St. Croix County Bicycle and Pedestrian Plan. Additional Safe Routes to School planning is underway in Eau Claire and Altoona. Plans for a system to identify and sign bike routes across the area are in the early stages. These efforts will be conducted with the assistance of the West Central Wisconsin

Regional Planning Commission. Altoona is also in the process of writing a Parks, Recreation, and Trails master plan that will include future bike and pedestrian facilities. The City of Eau Claire is updating its bicycle routes with intent to connect them to routes in neighboring communities as well.

This metropolitan bicycle and pedestrian plan seeks to build on what has come before and connect to what is coming. MPOs plan with a “3C” planning process: continuous, comprehensive, and coordinated.

- **Continuous:** This plan builds on plans from over 20 years that have advanced walking and biking and it will connect with upcoming plans that continue to do so.
- **Comprehensive:** This plan looks at walking and biking across the whole metropolitan area because people are walking and biking across jurisdictional lines. Walking and biking are planned for in the context of the broader multimodal transportation system.
- **Coordinated:** Advisory team members for this plan represent local governments and state agencies with the goal of including their interests in a cohesive whole.

## 1.3 Purpose

This plan seeks to advance efforts for the future of bicycle and pedestrian transportation in the Chippewa-Eau Claire Metropolitan Planning Area. This plan will address the metropolitan area as a whole and recommend actions that governments, agencies, and groups may implement.

The new plan will build on the existing bicycle and pedestrian plans, policies, and infrastructure of the MPO and member governments. The plan will make recommendations related to projects, programs, and policies:

- **Projects:** Further develop a network of bikeways that connect within and across the metropolitan area and address pedestrian hotspots
- **Programs:** Promote programs that educate the public about street safety and encourage people to walk and bike
- **Policies:** Recommend policies to strengthen governments’ land use decisions, engineering approaches, and enforcement actions on behalf of bicyclists and pedestrians

To develop this plan, the following sources were consulted and actions undertaken to research and analyze existing conditions, public sentiment, and future need.

- **Review:** Local plans, state guidance, and federal resources were reviewed and summarized. Data on the local population, commute mode share, and crashes was analyzed.
- **Input:** Public input was garnered through open houses, an online survey, and an online WikiMap.
- **Recommendations:** An Advisory Team of 15 members from local governments, state agencies, and advocacy groups guided the process, including the development of a Vision, Goals, and Objectives document and subsequent recommendations.

With this plan, local governments can strengthen their commitment to safe walking and biking with reasons and resources to do so. The MPO seeks to provide assistance to such efforts, beginning with this plan.

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## CHAPTER 2 – VISION, GOALS, AND OBJECTIVES

The Vision, Goals, and Objectives lay the foundation for all plan recommendations. Together, they describe the preferred future of walking and bicycling in the metropolitan area and guide actions to achieve the desired outcomes. The Vision expresses our area’s aspirations and future intentions around walking and bicycling. It is simultaneously bold and achievable. The Goals are broad statements that reflect the achievement of the vision, make it more explicit, and help guide actions. Goals describe the end results to be achieved. While the Goals are somewhat general, the Objectives are more specific and measurable, enabling benchmarking and evaluation of progress.

A description of the process used to develop the Vision, Goals, and Objectives is included in Appendix A. It looks at the priorities to pursue, strengths to build on, and issues to address that the Advisory Team identified and that went into the formation of the Vision, Goals, and Objectives.

### **Vision**

In 2027, in the Chippewa-Eau Claire Metropolitan Planning Area, people of all ages, abilities, incomes, and backgrounds will safely enjoy walking and biking on our area’s well-connected transportation network of off-street trails, on-street bikeways, and sidewalks for everyday transportation needs, recreation, health, quality-of-life, environmental benefit, and economic generation.

### **Goals and Objectives**

- **Improve safety and comfort for bicyclists and pedestrians** with facilities, education, and enforcement designed to reduce crashes with drivers; improve safe walking, biking, and driving practices; and eliminate preventable pedestrian and bicyclist deaths
  - Adopt Complete Streets policies, which are designed to accommodate the needs of all road users – pedestrians, bicyclists, public transit users, and drivers – and mitigate the barrier effect of large roads with high traffic volumes
  - Expand safe pedestrian facilities to fill gaps in the sidewalk network and designate more crosswalks
  - Local units of government shall meet all Americans with Disabilities Act (ADA) standards, including pedestrian accommodation during all phases of construction, in order to improve safe accessibility for all users
  - Expand safe, low-stress on-street bicycle facilities by building a network of planned routes and constructing protected bike lanes
  - Educate bicyclists and pedestrians about safe riding and walking practices and laws, both children and adults
  - Educate drivers about the laws and safe driving practices for sharing the road with bicyclists and pedestrians, particularly during driver’s education courses and through media attention
  - Enforce traffic laws to promote safety and increase compliance with driver, bicycle, and pedestrian regulations to reduce speeding, red light/stop sign running, and failure to yield the right of way

- **Expand the connectivity of the bicycle and pedestrian transportation network** to provide improved access to destinations through better use of existing facilities and construction of new facilities to complete the network
  - Hire staff with knowledge and expertise in walking, bicycling, and ADA and train current staff to deepen knowledge of walking, bicycling, and ADA. Foster collaboration between these professionals.
  - Improve access to destinations that bicyclists and pedestrians travel to or desire to travel to, such as school/university, work, parks, mountain bike/hiking areas, grocery stores, retail shops, restaurants, special events, and downtown
  - Create bikeways, trails, and sidewalks in strategic locations and to connect gaps in the active transportation network. When possible, include these as part of regular street construction and reconstruction projects. These facilities should incorporate current best practices in pedestrian and bicycle facility design.
  - Enhance the off-street trail system to provide low-stress biking and walking facilities throughout the metropolitan area and improve access to the trails
    - Close the final gap in the Chippewa Valley Trail System between Lake Hallie and Chippewa Falls
    - Ensure that the trails are well-maintained with a surface that meets user demand
    - Provide the appropriate amount of facilities along trails (benches, rest areas, bathrooms, trailheads, parking, etc.)
  - Overcome barriers to bicycle and pedestrian travel – both natural and human-made, including roads with high-volume/high-speed traffic – with enhanced crossings, bridges, or underpasses in strategic locations
  - Encourage intergovernmental cooperation and political buy-in within communities and across the metropolitan area to strengthen collaborative efforts to develop bicycle and pedestrian facilities
  - Provide linkages between the bicycle/pedestrian network, public transit, and automobile facilities to foster multimodal travel; include bike parking at such locations
  - Provide consistency in signage for street signs, wayfinding signs, trail signs, and trail map signs
  - Promote the Chippewa Valley Bike Map to help people select comfortable routes to ride, keep it updated, create new maps, and provide online and mobile-technology maps and wayfinding applications
- **Increase the number of people walking and biking** for transportation, recreation, health, overall community quality-of-life, environmental benefit, and economic generation; use direct encouragement, accommodation, planning, and policy change
  - Encourage more bicycling and walking with programs through schools, employers, parks, recreation providers, local governments, small businesses, Senior Americans Day, and more
  - Promote programs to donate and repair bikes for people with low incomes
  - Install more bicycle parking racks that are effective, secure, and well-sited
  - Attract tourists to the area to enjoy walking and biking during their visit and promote events or activities that encourage walking and biking, such as a scavenger hunt with incentives
  - Accommodate long-distance bicyclists who may be using the Wisconsin State Bikeways System or U.S. National Bicycle Route System
  - Encourage the development of bike share programs

- Create or update local bicycle and pedestrian plans
- Implement Safe Routes to School planning recommendations to increase the number of students safely walking and biking to school
- Establish or strengthen Citizen Advisory Boards such as Eau Claire's Bicycle Pedestrian Advisory Committee
- Invite neighborhood associations to participate in bicycle and pedestrian matters
- Apply for or upgrade Bicycle Friendly and Walk Friendly Community status
- Identify and develop consistent funding opportunities and grants that increase funds: for walking and biking; for areas that need expansion and maintenance of trails, bikeways, and sidewalks; and for law enforcement strategies
- Monitor usage of bicycle and pedestrian facilities with tools like trail counters
- Adopt local land use policies and zoning ordinances that foster walkability and bikeability. These could include:
  - Site plans that provide walk/bike access
  - Local bike parking requirements and design/placement standards
  - Reduced car parking minimum requirements where appropriate
  - Subdivisions that accommodate bicycle and pedestrian travel
  - Incorporating trails in designs
  - Compact land use

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## CHAPTER 3 – EXISTING CONDITIONS

### 3.1 Current Levels of Walking and Bicycling

This section considers the number of people walking and bicycling in the Chippewa-Eau Claire Metropolitan Planning Area (MPA). Data on walking and bicycling are from the Census and its American Community Survey and describe the commute to work. To put those numbers in the context of the overall population for the MPA, population and demographic characteristics will be described.

#### 3.1.1 Population and Demographic Characteristics

The Chippewa-Eau Claire Metropolitan Planning Area (MPA) encompasses approximately 162 square miles with an estimated 2010 population of 111,905 people. The planning area includes the cities of Eau Claire, Chippewa Falls, and Altoona; the Village of Lake Hallie; as well as portions of the towns of Brunswick, Pleasant Valley, Seymour, Union, and Washington in Eau Claire County; and Anson, Eagle Point, Hallie, Lafayette, Tilden, and Wheaton in Chippewa County. Map 1 shows the Metropolitan Planning Area. Figure 1 displays the population within the MPA boundary by municipality and also breaks down the area of the MPA by municipality.

Figure 2 shows the population trends of the MPA from 1990 to 2015 and the projected growth over the next 15 years. From 1990 to 2015, the population growth was 24,233, representing a 26.5% increase, which equates to a compound annual growth rate of 0.9%. The 10-year timeframe of this plan coincides most closely with the available data showing 2015 to 2025. The projected population growth during that period is 7,486, or 6.5%, equating to a compound annual growth rate of 0.6%. While this rate may be somewhat slower than the preceding 25 years, it is clear that population in the MPA will continue to grow steadily.

**Figure 1: Population Table**

Population and Area Distribution within the Metropolitan Planning Area by Municipality, 2010		
Municipality: City=c, Village=v, Town=t	Population	Area (sq. miles)
Altoona (c)	6,706	4.6
Chippewa Falls (c)	13,661	11.4
Eau Claire (c)	65,931	31.9
Lake Hallie (v)	6,448	14.1
Anson (t)	1,226	6.2
Brunswick (t)	106	2.0
Eagle Point (t)	1,320	9.8
Hallie (t)	73	3.4
Lafayette (t)	4,092	15.7
Pleasant Valley (t)	811	3.9
Seymour (t)	3,082	8.1
Tilden (t)	84	2.0
Union (t)	1,402	12.2
Washington (t)	6,043	21.9
Wheaton (t)	920	13.7
<b>TOTAL</b>	<b>111,905</b>	<b>161.6</b>

Source: U.S. Census, Wisconsin Department of Transportation

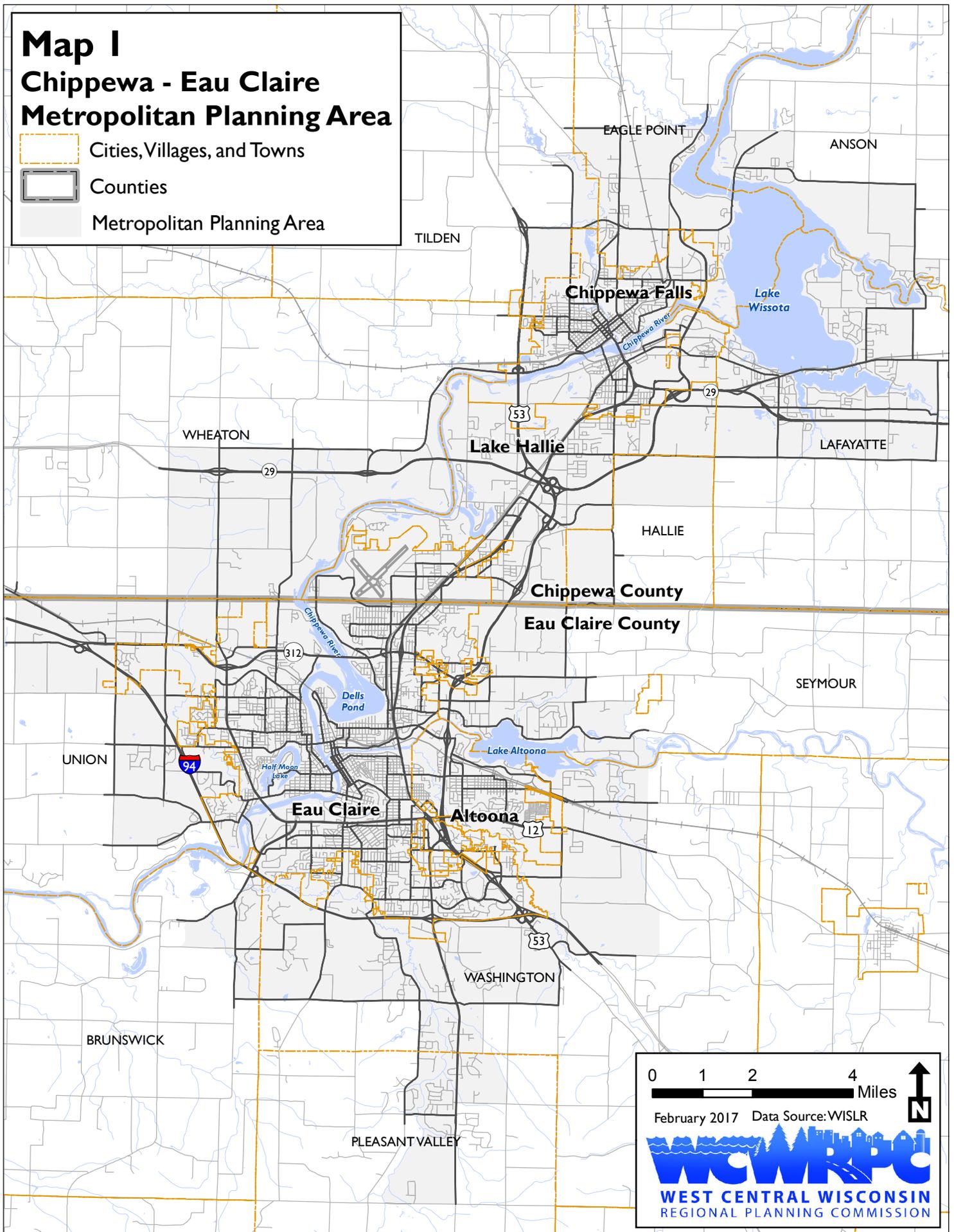
**Figure 2: Population Trends and Projections Table**

MPA Population Trends and Projections, 1990-2030							
Year	1990	2000	2010	2015	2020*	2025*	2030*
Total Population	91,415	104,005	111,905	115,648	119,391	123,134	126,876

Source: Wisconsin Departments of Administration and Transportation; \*projection

# Map I Chippewa - Eau Claire Metropolitan Planning Area

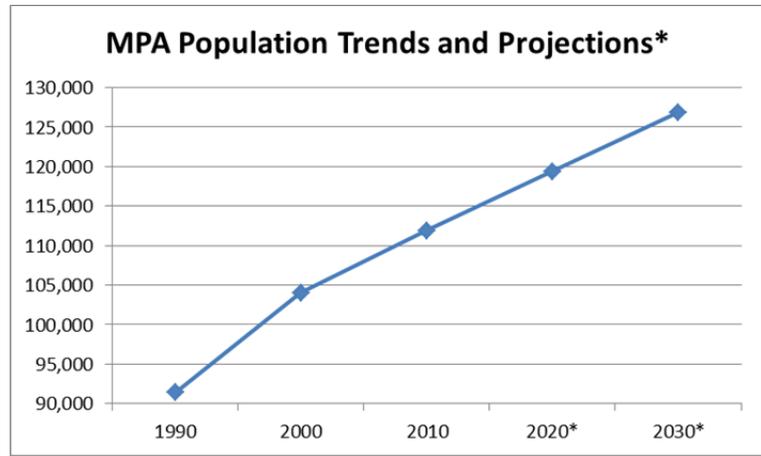
-  Cities, Villages, and Towns
-  Counties
-  Metropolitan Planning Area



The MPO includes the Cities of Altoona, Chippewa Falls and Eau Claire; the Village of Lake Hallie; the Towns of Anson, Brunswick, Eagle Point, Hallie, Lafayette, Pleasant Valley, Seymour, Tilden, Union, Washington, and Wheaton; and Chippewa and Eau Claire Counties

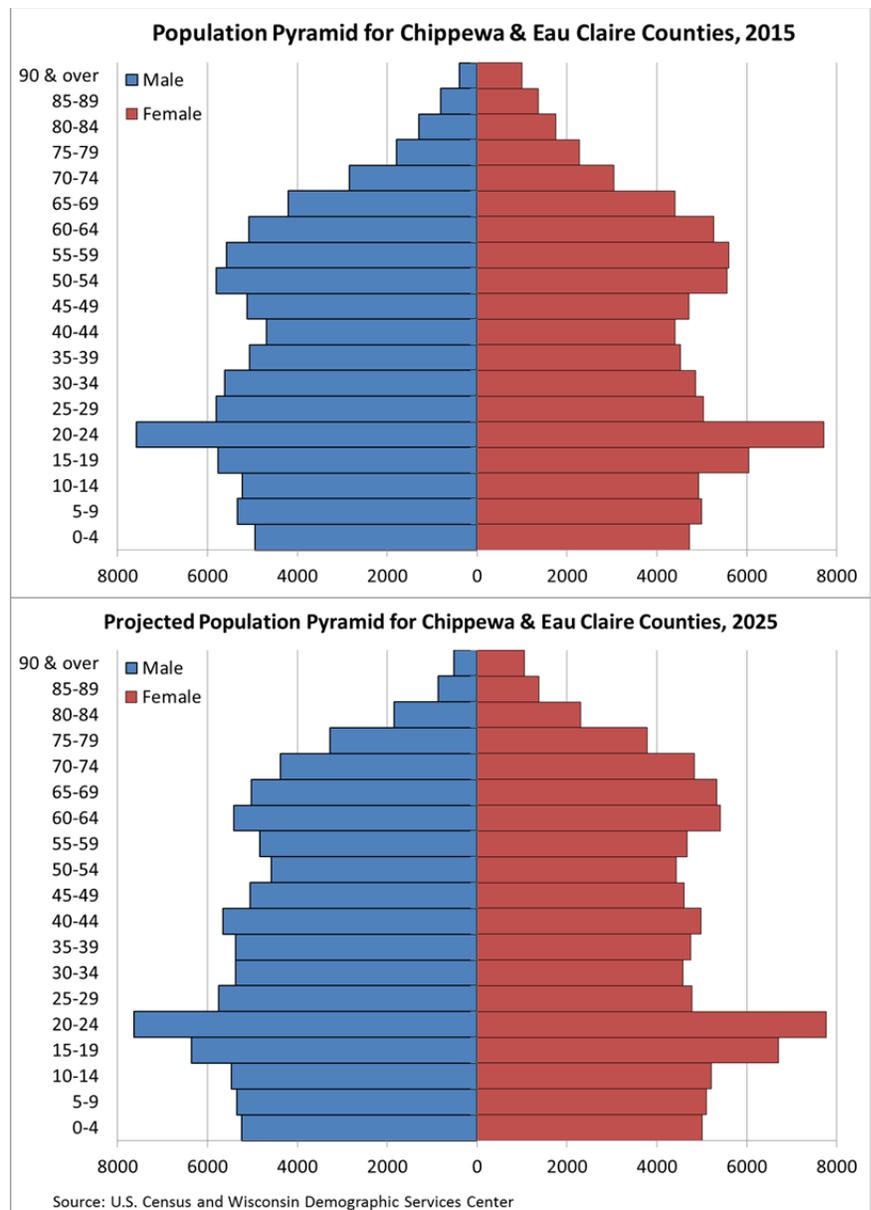
**Figure 3: Population Trends and Projections Chart**

Figure 3 shows population trends and projections for the MPA and displays the faster growth rate between 1990 and 2000 and the consistent growth rate experienced from 2000 to the present and projected into the future. A larger population will place greater demand on the transportation system, and walking and biking provide a form of alternative transportation that does not contribute to traffic congestion and does reduce the need to build new roads or expand existing ones.



**Figure 4: Population Pyramid Charts**

In Figure 4, population pyramids display the population in all of Chippewa and Eau Claire counties, not just within the MPA. The first one shows existing population in 2015, and the second shows projected population in 2025. It shows the population of males and females by age cohort. One of the values of a population pyramid is that it not only can give a picture of the current age and gender of a population, but it can also help give a sense of what the future age and gender make-up could be, as in the projection.



Among other things, these population pyramids reveal that the largest age cohort is 20-24 year olds. Unlike other cohorts that show aging over time, this cohort remains constant and will likely continue to be the largest cohort. Much of this is attributable to the university and college students studying here, particularly at the University of Wisconsin Eau Claire (2016-2017 enrollment: 10,902) and Chippewa Valley Technical College (2014-2015 total

enrollment at all campuses: 13,430). This age group and other members of the Millennial Generation (aged 17 to 37 in 2015) have shown reduced car ownership and a preference for public transit, biking, and walking. Providing good walking and biking infrastructure, programs, and policies would help meet their demand for these forms of transportation. As more Millennials become independent adults and choose where they want to live, cities that offer good walking and biking accommodations are better positioned to attract them than cities that do not. Retaining graduates of local universities is a key goal, and being a walkable/bikeable community can aid in that goal.

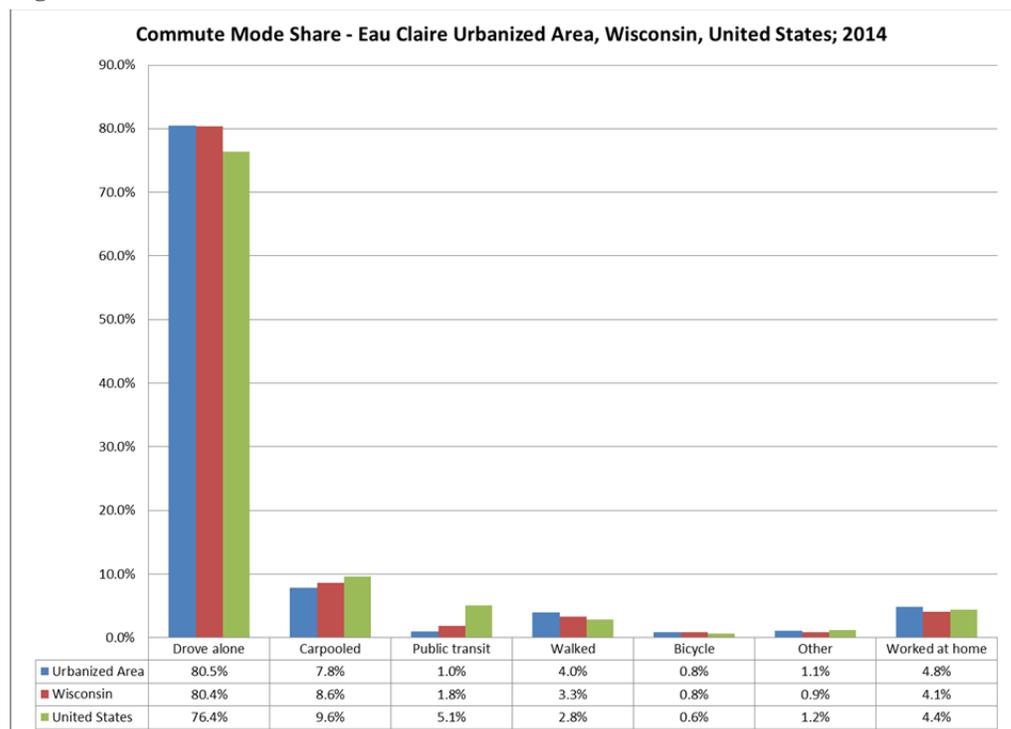
The next largest group is the Baby Boomer Generation (aged 50 to 69 in 2015). While they might not have the highest rates of biking and walking for transportation, currently, some of them may downsize their living arrangements and move to apartments, condos, and smaller houses in and near downtowns and central city neighborhoods. Enhancing the walkability of downtowns will make them more livable and attractive, thereby helping to boost downtown businesses.

### 3.1.2 Commute Mode Share

A source of data about walking and biking rates is the U.S. Census and its American Community Survey. These measurements ask respondents how they get to work, including by walking or biking. Responses are based on the previous week of commuting, so they may be affected by time of year and weather. Additionally, this measurement does not capture any of the other purposes for which people may walk and bike, such as getting to school, going grocery shopping, or visiting the library.

Figure 5 displays each commuting mode’s share for 2014, for the Eau Claire Urbanized Area, the State of Wisconsin, and the United States. The Eau Claire Urbanized Area has a walk-to-work rate of 4.0%, higher than both the Wisconsin and the national rates. Its bike-to-work rate is 0.8%, equal to the Wisconsin rate and higher than the national rate. These rates equate to 2,200 walking commuters and 440 bicycle commuters.

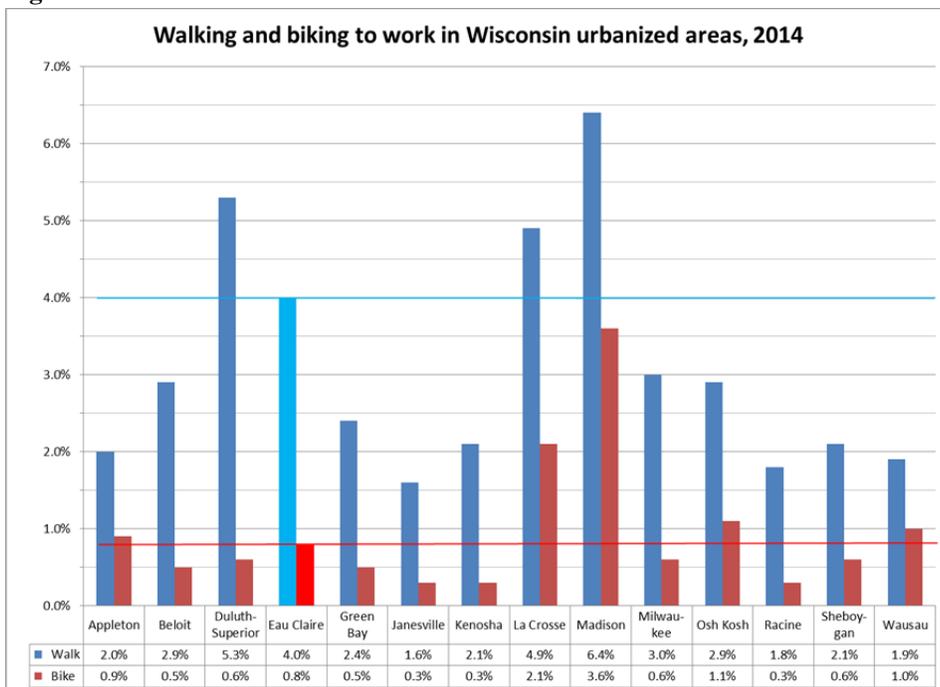
**Figure 5: Commute Mode Share Chart**



Source: U.S. Census American Community Survey, 2014 5-year estimate

**Figure 6: Walk and Bike to Work across Wisconsin Chart**

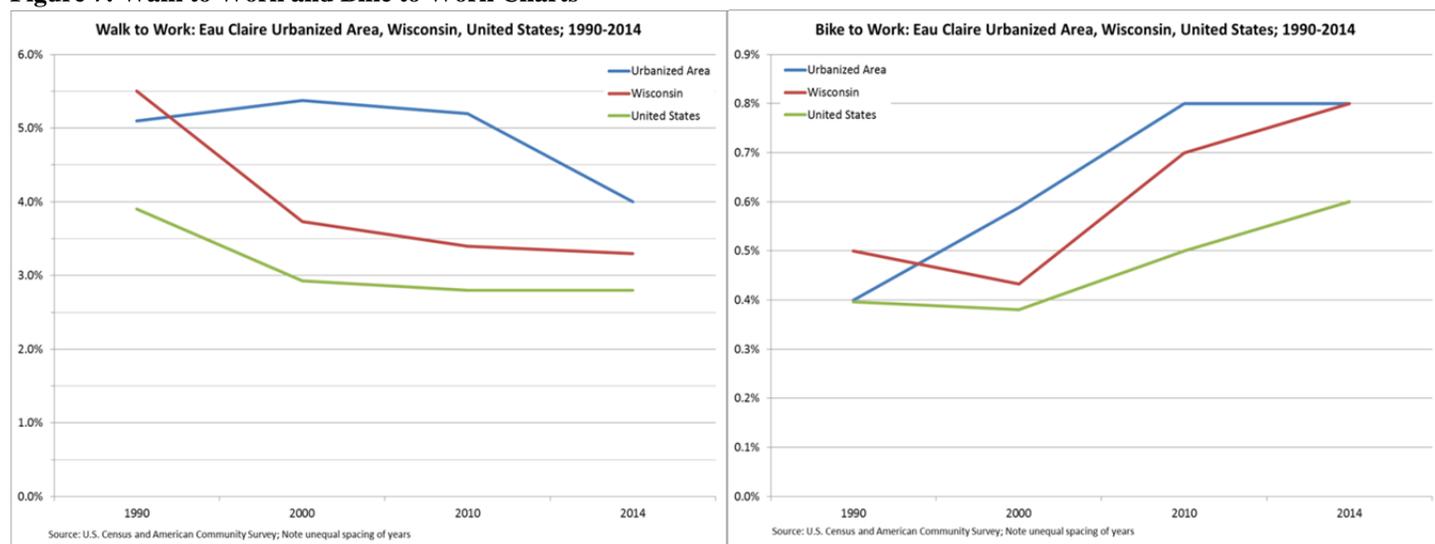
In addition to seeing how the Eau Claire urbanized area compares to the State of Wisconsin and the United States, it is useful to see how it stacks up relative to other urbanized areas in Wisconsin. In Figure 6, compared to those other urbanized areas in Wisconsin, Eau Claire has the fourth highest rate of walking to work (4.0%) and the sixth highest rate of biking to work (0.8%). These peer areas have worked hard to improve their own walking and biking, and this plan draws on some of their lessons.



In terms of walking and biking rates over time, Figure 7 shows rates of walking to work and biking to work and compares the Eau Claire urbanized area to the State of Wisconsin and the nation as a whole (2014 American Community Survey). For walking to work, the Eau Claire urbanized area (4.0%) remains higher than Wisconsin (3.3%) or the United States (2.8%). For biking to work, the Eau Claire urbanized area doubled its rate from 0.4% to 0.8% between 1990 and 2010 and remained at that rate in 2014. This rate is equal to Wisconsin's rate and higher than the United States (0.6%) in 2014.

This historical evidence points to the need to reverse the decline in walking to work rates and get the bike to work rates growing again, as they did before 2010.

**Figure 7: Walk to Work and Bike to Work Charts**



### 3.1.3 Trail Counts

Trail counts are another indicator of bicycle and pedestrian activity.

Figure 8 is a chart based on data that the City of Eau Claire collected, and it shows trail counts taken by automatic counters at three different locations in the City. The total number of counts in 2016 was over 287,000. This represents about a 23% increase over 2015 and about a 44% increase over the period from 2011 to 2013, which was fairly constant at about 200,000 counts.

A regular trail counting program like this, across the metropolitan area, would provide useful information to individual municipalities and to the metropolitan area as a whole.

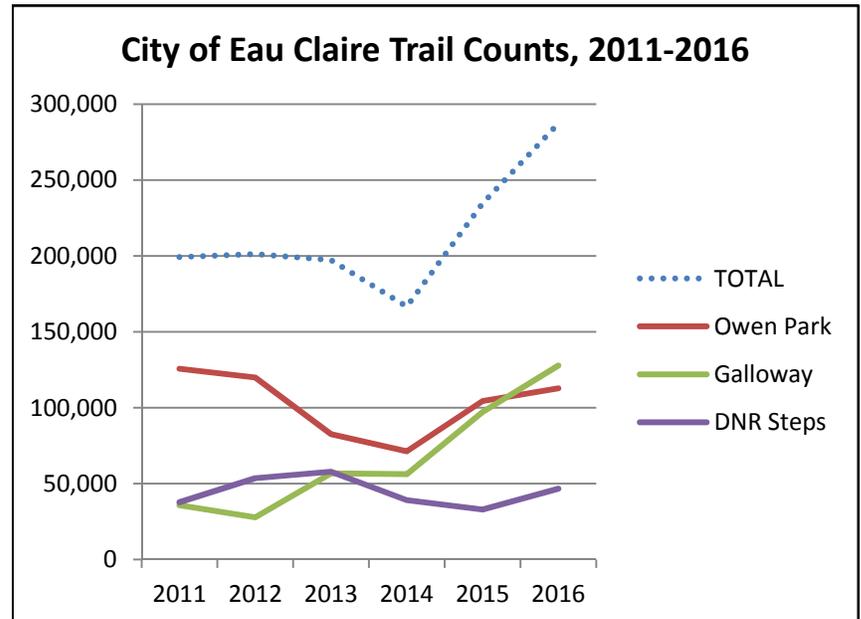
Knowing counts for different segments of trails could help prioritize improvements and maintenance, aid in applying for grants and funding, and give local governments and citizens a better impression of how well-utilized the trails are, perhaps promoting their use.

### 3.1.4 Bicycling Heat Map

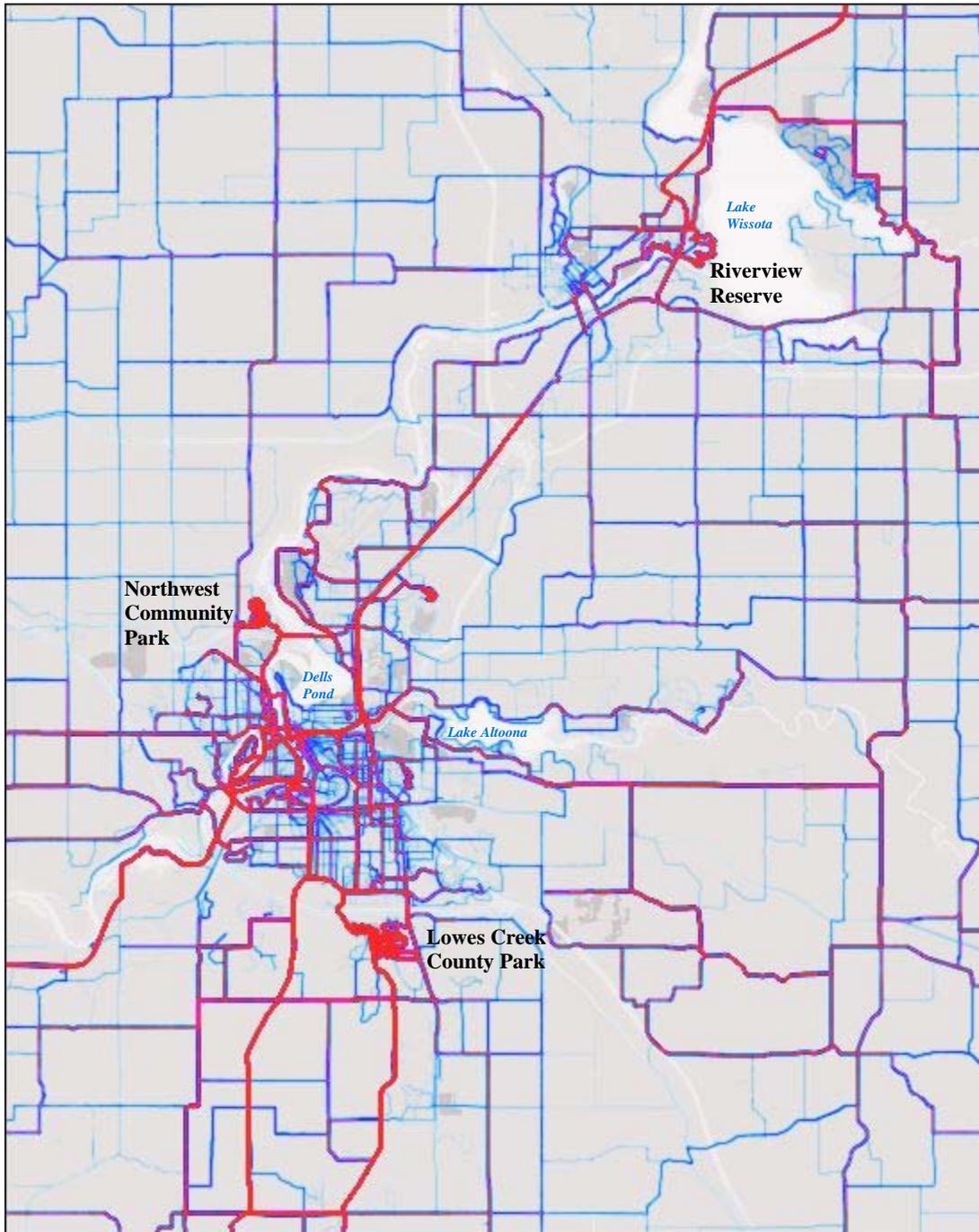
A mobile app for tracking bicycling and running called Strava shows heat maps of activity that can help give a sense of where people ride. This is primarily directed toward recreational riding, but the maps are revealing, nonetheless. The map in Figure 9 displays bicycling activity only, not running activity. The color of the line shows the amount of use: from light blue at the low end to dark blue to red at the high end.

Areas that receive highest use include the trails, both paved and unpaved, and county highways with good riding conditions. The gap in the paved trail system between Lake Hallie and Chippewa Falls is observable. Popular mountain biking destinations include Lowes Creek, Northwest Community Park, and Riverview Reserve (Area 178). Road bicyclists are active south of Eau Claire, along Riverview Drive, and around Lake Wissota, among other locations.

**Figure 8: Trail Counts Chart**



**Figure 9: Bicycling Heat Map**



Source: Strava bike activity tracking

### 3.1.5 Health and Equity

Research on the connections between transportation, land use, and health have expanded greatly in recent years. A growing body of evidence suggests that connected land development patterns, greater density, and a walkable/bikeable street network result in an increase in physical activity for transport and recreation purposes, as well as a higher level of accessibility to community services. This increase in physical activity and access to health-related services translates into positive health and economic outcomes, including a reduction in disease and chronic illnesses, healthier weights, and a decrease in overall health care spending. Supportive environments for walking and biking can also reduce vehicle use and subsequent air pollution from cars.

Information about health is commonly accessible at the county level. Figure 10 shows relevant information about health in Chippewa and Eau Claire counties and how they rank out of Wisconsin’s 72 counties. While both counties rank in the top third of the state, they each have room for improvement in terms of access to exercise opportunities, physical inactivity, and adult obesity, each of which could be improved by enhancing walkability and bikeability.

Since 1990, the obesity rate for Wisconsin adults has more than doubled. The presence of an excessive amount of body fat can increase the risk for heart disease, high blood pressure, diabetes, or other chronic

**Figure 10: County Health Data Table**

	Overall rank (out of 72 counties)	Access to exercise opportunities <sup>1</sup>	Physical inactivity <sup>2</sup>	Adult obesity <sup>3</sup>
Chippewa County	23	63%	21%	30%
Eau Claire County	21	67%	17%	29%

<sup>1</sup> Percentage of population with adequate access to locations for physical activity  
<sup>2</sup> Percentage of adults over age 20 reporting no leisure-time physical activity  
<sup>3</sup> Percentage of adults that report a BMI of 30 or more  
*Source: Wisconsin County Health Rankings*

diseases. These chronic conditions are some of the leading causes of preventable death, according to the Centers for Disease Control and Prevention (CDC). Public health professionals in Chippewa and Eau Claire counties have obesity reduction as a goal.

The CDC recommends that adults get at least 150 minutes of physical activity each week. By making walking and biking safer, more comfortable, and better connected to destinations, more people will have access to exercise opportunities for transportation and recreation. Such access to exercise opportunities would likely lead to an increase in physical activity and, in turn, could help reduce obesity and improve health.

A new study published in the American Journal of Public Health has concluded that physical separation of bicyclists from motor traffic is “crucial” to reducing the higher than average cyclist injury rates seen across the U.S. "It is crucial to provide physical separation from fast-moving, high-volume motor vehicle traffic and better intersection design to avoid conflicts between cyclists and motor vehicles. More and better bicycle infrastructure and safer cycling would encourage Americans to make more of their daily trips by bicycle and, thus, help raise the currently low physical activity levels of the US population." The study's prime example is provided by Minneapolis, where the city grew its cycle network by 113% between 2000 and 2015, delivering a 79% reduction in severe injuries per 100,000 cycle journeys. This also tallied with a 203% growth in cycling in the areas where safe infrastructure was present. Compared

with major streets with parked cars and no bicycle facilities, cycle tracks [i.e. separated bike lanes] on roads without parked cars were 89% safer; regular, unprotected bicycle lanes on major roads without parked cars were 53% safer; and lightly trafficked residential streets without any bicycle facilities were 56% safer.

Transportation investments, both in terms of project type and distribution within a region, have strong connections to social equity. Access to jobs and other needs (known as jobs access or destinations access), household transportation and housing costs, and the aforementioned health considerations are all important equity issues directly connected to transportation and land use decisions.

## 3.2 Existing Facilities

The existing bicycle and pedestrian facilities in the Metropolitan Planning Area include **off-street paved trails** that accommodate people walking and biking, **on-street bikeways** including bike lanes and sharrows, and **pedestrian facilities** such as sidewalks and crosswalks. Map 2 shows the existing bicycle facilities.

Other related facilities include street design that encourages biking and walking, biking amenities such as bike racks, and connections to public transit.

### 3.2.1 Off-Street Paved Trails

The off-street paved trails in the Metropolitan Planning Area include portions of two state trails that are part of the Chippewa Valley Trail System: the Chippewa River State Trail and the Old Abe State Trail. When the final 2.5 mile segment of it is complete, these two trails plus a third, the Red Cedar State Trail, will extend 80 miles. This trail system was first planned for in 1996 in the Department of Natural Resources' *Chippewa Valley Trail System Master Plan*.

- Chippewa River State Trail – 30 miles from Phoenix Park in downtown Eau Claire, at the confluence of the Eau Claire and Chippewa rivers and travels south along the Chippewa River. The trail joins the Red Cedar State Trail in the Dunnville Wildlife Area near the confluence of the Red Cedar and Chippewa Rivers and ends at the City of Durand.
- The Old Abe State Trail – currently designated as a 20 mile trail that connects from Lake Wissota, just north of Chippewa Falls, to Brunet Island State Park in Cornell. Once the final 2.5-mile section of trail between Lake Hallie and Chippewa Falls is complete, the urban portion of the trail from Eau Claire through Lake Hallie to Chippewa Falls, approximately a 15-mile stretch, can be designated as the Old Abe Trail in its entirety. This will bring the total length of the Old Abe Trail to approximately 35 miles.
- Red Cedar State Trail – 14.5 miles from Menomonie south to the connection with the Chippewa River State Trail at the Dunnville Wildlife Area (not in the MPA).

Additional off-street paved trails that are not part of the state trail system have also been developed. Many of these branch off from the state trail system, but others are disconnected from the broader trail network. These non-state trails help provide more accessibility to residential areas and other destinations that the state trails do not approach.

Many of the paved trails could be considered sidepaths, in that they parallel a road and are within the road right-of-way. Some of these urban sidepaths can appear like sidewalks – the trail along Hastings Way, for instance, is a 10-foot wide concrete sidepath, rather than a typical 5-foot wide sidewalk. These types of

facilities are intended to accommodate people biking (and walking), so they do not have to ride in the busy adjoining road.

Within the Metropolitan Planning Area, the total mileage of all these off-street paved trails is seen in Figure 11. The mileage is broken down by the individual cities of Eau Claire, Altoona, and Chippewa Falls; the Village of Lake Hallie; and the sum of all the towns. Towns with trail mileage in the MPA include: Washington, Seymour, Wheaton, Eagle Point, and Anson. The total of this off-street paved trail mileage is 63.7 miles.

### Proposed Off-Street Paved Trails

In addition to the existing network of off-street paved trails, units of government within the MPA have proposed to build 35.6 additional miles of off-street paved trails in the future, as shown in Figure 12. These proposed trails come from planning documents, like Eau Claire’s 2010 Bicycle and Pedestrian Plan and GIS files of bicycle facilities shared from local governments. These proposed trails would both connect gaps in the existing trail network and extend the trail network to areas that currently lack access. Off-street trails are the preferred type of bicycle facility for most riders, particularly less confident ones, so they are the type of infrastructure that is most likely to encourage new riders to get on a bike.

New trail construction can be quite expensive, however, so funding such projects can be a challenge amidst municipal budgets that are already constrained. One source of funding, the Transportation Alternatives Program (TAP), can provide money for bicycle-pedestrian infrastructure projects. Local off-street trail projects have received TAP funding in the past. Several projects were submitted in the latest round of applications, including a project to connect the last 2.5-mile gap in the Chippewa Valley State Trail System between Chippewa Falls and Lake Hallie. This trail is crucial to bike and pedestrian connectivity in the MPA. Finding additional funding to continue building out the trail system is a key objective supported by this plan. Design standards for trails/paths can be found in the Design Guidelines in Appendix D.

**Figure 11: Off-Street Paved Trail Mileage Table**

<b>Off-Street Paved Trail Mileage</b>	
City of Eau Claire	36.9
City of Altoona	9.5
City of Chippewa Falls	6.8
Village of Lake Hallie	2.8
Towns	7.7
<b>TOTAL</b>	<b>63.7</b>

**Figure 12: Proposed Off-Street Paved Trail Mileage Table**

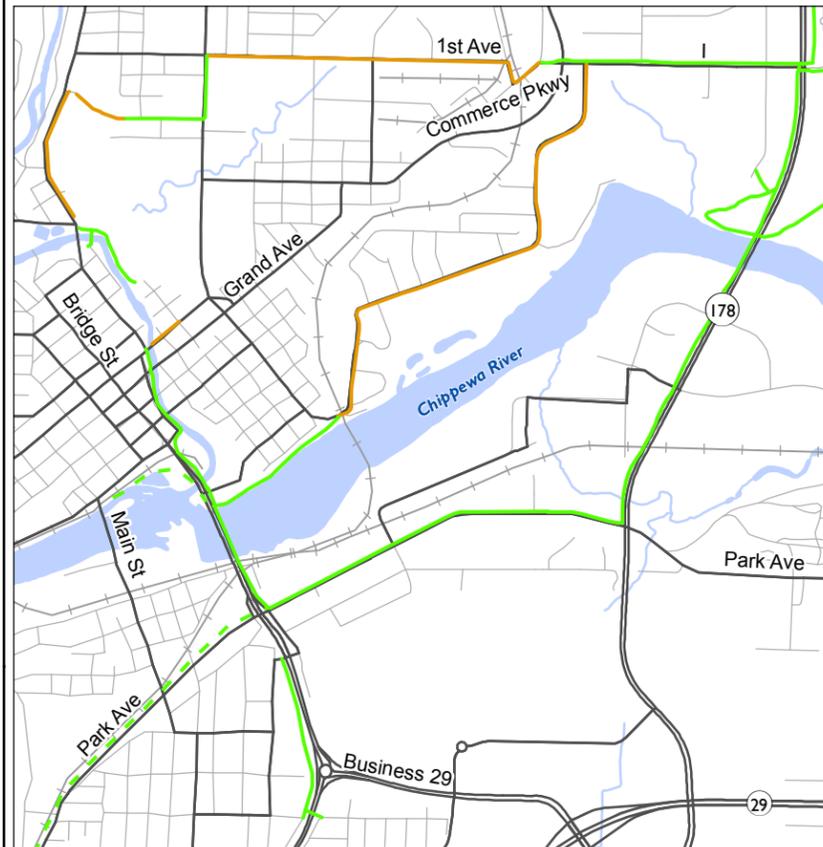
<b>Proposed Off-Street Paved Trail Mileage</b>	
City of Eau Claire	24.2
City of Altoona	7.3
City of Chippewa Falls	1.5
Village of Lake Hallie	1.3
Towns	1.4
<b>TOTAL</b>	<b>35.6</b>

# Chippewa - Eau Claire Metropolitan Bicycle and Pedestrian Plan

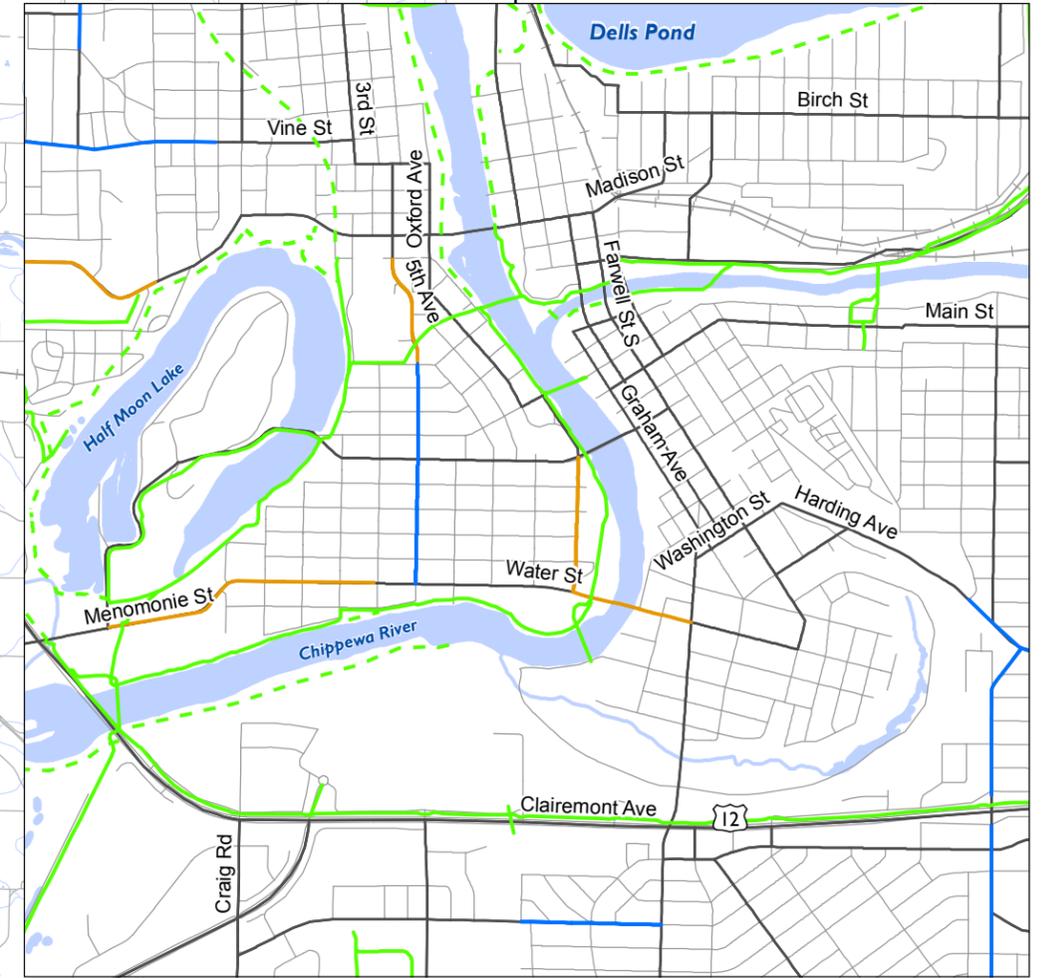
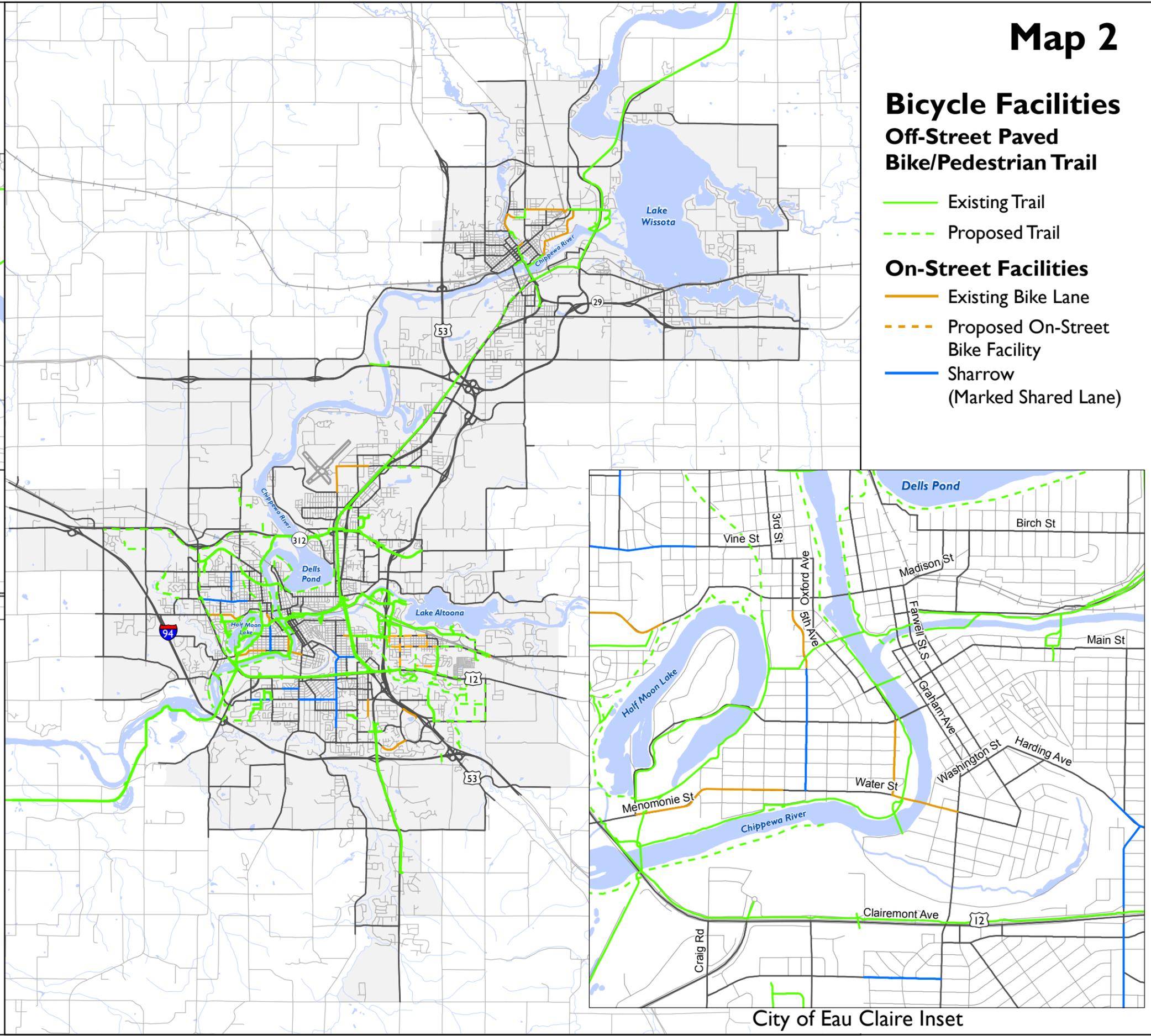
## Map 2

### Bicycle Facilities Off-Street Paved Bike/Pedestrian Trail

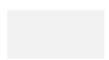
-  Existing Trail
-  Proposed Trail
- On-Street Facilities**
-  Existing Bike Lane
-  Proposed On-Street Bike Facility
-  Sharrow (Marked Shared Lane)

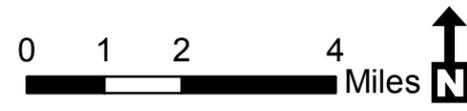


City of Chippewa Falls Inset



City of Eau Claire Inset

 Metropolitan Planning Area



February 2017  
Data Sources:  
Local governments,  
WISLR



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### 3.2.2 On-Street Bikeways

On-street bikeways are facilities that are intended to make it safer and more comfortable for bicyclists to ride on the street with or near vehicle traffic. On most local, residential streets, vehicle volume is lower and vehicle speed is slower, making these streets generally safe to ride without any bicycle infrastructure improvements. Residential streets can be enhanced as bicycle boulevards or neighborhood greenways, which designate a residential street as a preferred bicycle route with signage, pavement markings, and physical installations like traffic circles that make it easy for people who bike to use and are somewhat less accommodating for people who drive.

The on-street bikeway facilities are typically placed on streets functionally classified as collectors, minor arterials, or principal arterials. The reason to provide such facilities on streets with high vehicle mobility is the same as for drivers who use this network – these streets are direct, permit fast travel, have fewer stops, and allow access to destinations. People who bike for transportation typically want their network of routes to serve their needs as seamlessly as possible without frequent detours or circuitous travel, and this generally requires on-street bikeways to enhance safety and comfort.

Figure 14 on the following page shows various bicycle facilities, both on-street and off-street, and compares them by their degree of physical separation from vehicular traffic. The Design Guidelines in Appendix D give design standards for on-street facilities.

Within the Metropolitan Planning Area, the cities of Eau Claire and Chippewa Falls have 17.7 miles of on-street bikeways, as shown in Figure 13 below. Bike lanes are the most common, followed by sharrows. The bike lanes in Eau Claire are standard bike lanes. In Chippewa Falls, however, some of the bike lanes are extra-wide, and signs indicate that there is room for vehicle parking on the right and bicycle travel on the left. With the requisite street width, this treatment can accommodate vehicle traffic, parking, bicycle traffic, and it can help narrow the travel lanes to provide traffic calming. Care must be taken with all bike lanes to allow enough space for bicyclists to avoid the hazard of opening car doors. The City of Altoona has plans to establish bike lanes on 3.8 miles of its streets.

The City of Eau Claire categorizes two street segments as bike boulevards, which are streets with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority. Thorp Commons and Valmont Avenue are those two, but neither of them fit the standard definition of a bike boulevard. Thorp Commons is a one-block long “shared space,” which is an urban design approach that seeks to minimize the segregation of pedestrians and vehicles by removing features such as curbs, road surface markings, traffic signs, and traffic lights. Valmont Avenue has sharrows but none of the signage to identify it as a bike boulevard or the volume management measures designed to discourage motor vehicle through trips. With more investment it could become a bike boulevard and a bike-friendly alternative to the busy, nearby Brackett Avenue.

**Figure 13: On-Street Bikeways Mileage Table**

	On-Street Bikeways Mileage		
	City of Eau Claire	City of Chippewa Falls	MPA
Bike Boulevards	0.5		<b>0.5</b>
Bike Lanes	6.1	3.3	<b>9.4</b>
Sharrows	8.1		<b>8.1</b>
<b>TOTAL</b>	<b>14.4</b>	<b>3.3</b>	<b>18.0</b>

**Figure 14: On-Street Bikeway Facilities**



Source: *Separated Bike Lane Planning and Design Guide*, Federal Highway Administration

There are some other on-street bikeways to consider in Figure 15:

**Figure 15: On-Street Bikeways**

**Wide curb lanes** – an outermost lane of a roadway that is wide enough to be safely shared side by side by a bicycle and a wider motor vehicle at the same time. Generally, the minimum-width standard is 14 feet. This outer lane does not have a painted line separating motorists from the bicyclists, and it also does not permit parking.



Wide Curb Lane, Source: Human Transport

**Paved shoulders** – on a rural road, the shoulder can be paved both for safety of people driving and also for use by people walking or biking. For safe use by people walking and biking, the shoulder ought to be four to five feet wide for moderate-traffic roads and six to eight feet wide for higher-traffic roads. In places that are deemed important bicycle and pedestrian routes that lack sufficient shoulder width, the desired width can be accomplished through a combination of “lane diets,” narrowing the traffic lane, and widening the road.



Paved Shoulder, Source: Toole Design Group

**Bicycle boulevards** – streets with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority. Bicycle Boulevards use signs, pavement markings, and speed and volume management measures to discourage through trips by motor vehicles and create safe, convenient bicycle crossings of busy arterial streets.



Bicycle Boulevard, Source: Reconnect Rochester

Selection of an appropriate on-street bikeway must consider various factors such as the street’s functional classification, existing street geometry (right-of-way width, curb-to-curb width, lane width, horizontal or vertical curves), current speed and volume of motor vehicle traffic, proportion of heavy truck traffic, crash history, presence of parked cars, maintenance, snow removal, and more. In general, streets with average daily traffic (ADT) of 3,000 vehicles or more should have designated bicycle facilities, such as a bike lane that gives riders their own differentiated space not shared with motor vehicles. The more separation from traffic that a facility provides, the greater the safety and comfort it affords. If the goal is to get more people biking, separated facilities should be preferred. Appendix D discusses this idea further.

Though sharrows (marked shared lanes) have become more commonly-used in recent years, new research is pointing to evidence that shows they do not provide the safety benefits initially intended. Application of sharrows should be limited to streets with ADT of 3,000 vehicles or less. Sharrows do not substitute for facilities that designate separate space for people biking, such as bike lanes. The Bicycle Design Guidelines in Appendix D discuss this point further.

### *3.2.3 Sidewalks*

Sidewalks are the primary location of transportation for people who walk. Off-street trails are used by people who walk, as well, but sidewalks are much more prevalent and provide more direct access to most destinations.

Tracking the presence and construction of sidewalks around the Metropolitan Planning Area has been inconsistent across municipalities. Only the City of Eau Claire has a GIS inventory of its sidewalks. Analysis of the GIS shapefile of Eau Claire's sidewalks revealed that the length of all the sidewalks in the City is 366.6 miles, as of the spring of 2015.

In its 2010 Bicycle and Pedestrian Plan, the City of Eau Claire identified gaps in the sidewalk network that need to be filled by constructing new sidewalks. The City's Bicycle and Pedestrian Advisory Commission and the Department of Public Works collaborated to identify these gaps. The total length of all of these gap areas is 39.3 miles. This does include future sidewalks outside of Eau Claire in the adjoining towns that would help provide pedestrian mobility to Eau Claire residents. The City is working to fill these gaps, often in conjunction with adjacent street projects.

The City of Chippewa Falls has approximately 56 miles of sidewalks, as identified by the City's Public Works Department.

### *3.2.4 Intersections and Crossings*

Crossing streets and roads is one of the most dangerous aspects of walking and biking. Of the 203 reported crashes between motor vehicles and people walking and biking in the MPA from 2011 through 2015, 141 of them, or 63.8%, occurred at intersections or were intersection-related.

Infrastructure treatments that are designed to make intersections safer include crosswalks, signage, pedestrian signals at signalized intersections, and pedestrian crossing signals at locations without regular traffic signals. An example is a HAWK signal (*High-intensity Activated crossWalk* beacon, a traffic control device used to stop road traffic and allow pedestrians to cross safely), which Eau Claire installed on Menomonie Street.

Other infrastructure treatments allow pedestrians and bicyclists to cross separated from the grade level of the motor vehicles. That is, an underpass or tunnel to cross below the street or an overpass or bridge to cross above the street. While these treatments do physically separate people who drive and people who bike and walk, many who walk and bike consider such facilities to be an inconvenience and will instead cross at grade level. For this reason, it is important to consider providing grade level crossing protections like crosswalks and pedestrian signals.

Among the most difficult crossings are those at major highways. These constructed barriers could require bicyclists and pedestrians to travel well out of their way to get to their destinations. These barriers can include major highways such as I-94, USH 53, STH 29, and STH 312. Within the MPA, there are 69 locations where roads or trails cross one of these four highways with overpasses, underpasses, or at-grade

crossings, as seen in Map 3. An analysis of these crossings was performed using guidelines in the Wisconsin Department of Transportation's *Rural Bicycle Planning Guide*. Though the focus is on bicyclists, it applies to pedestrians, as well. Fifty of these crossings are safe for bicyclists because they are either for non-motorized travel only, feature sidepaths or sidewalks, or offer a safe mixed-traffic situation. The remaining 19 crossings are all mixed with vehicles, have high vehicle speeds and/or volumes, or cross at-grade without a traffic signal. Of these, five are moderate for crossing and 14 are not recommended for bicyclists to negotiate. Additionally, some crossings are far apart and require added riding to cross the highway. For instance, the distance from the unsafe crossing of I-94 at USH 53 to the safe crossing of I-94 at STH 93 is 1.8 miles. There is development occurring along this corridor, especially south of I-94, which is increasing demand for bicycle accommodations. These factors should lead to a greater consideration of how and where bicyclists cross highways and if any accommodations or new infrastructure are warranted. Municipalities need to accommodate multimodal travel across highways.

### **Crosswalks**

According to state law, at both signalized and unsignalized intersections, there is an implied (legal) crosswalk for pedestrians at each leg, whether or not the crosswalk is marked. People driving are required by that state law to yield the right of way to pedestrians in a marked or unmarked crosswalk. People walking must give motorists appropriate and safe distance to stop before stepping off the curb. While this is the way the law is supposed to work, in practice it is more likely that people who drive will not stop even for a person at a clearly marked crosswalk.

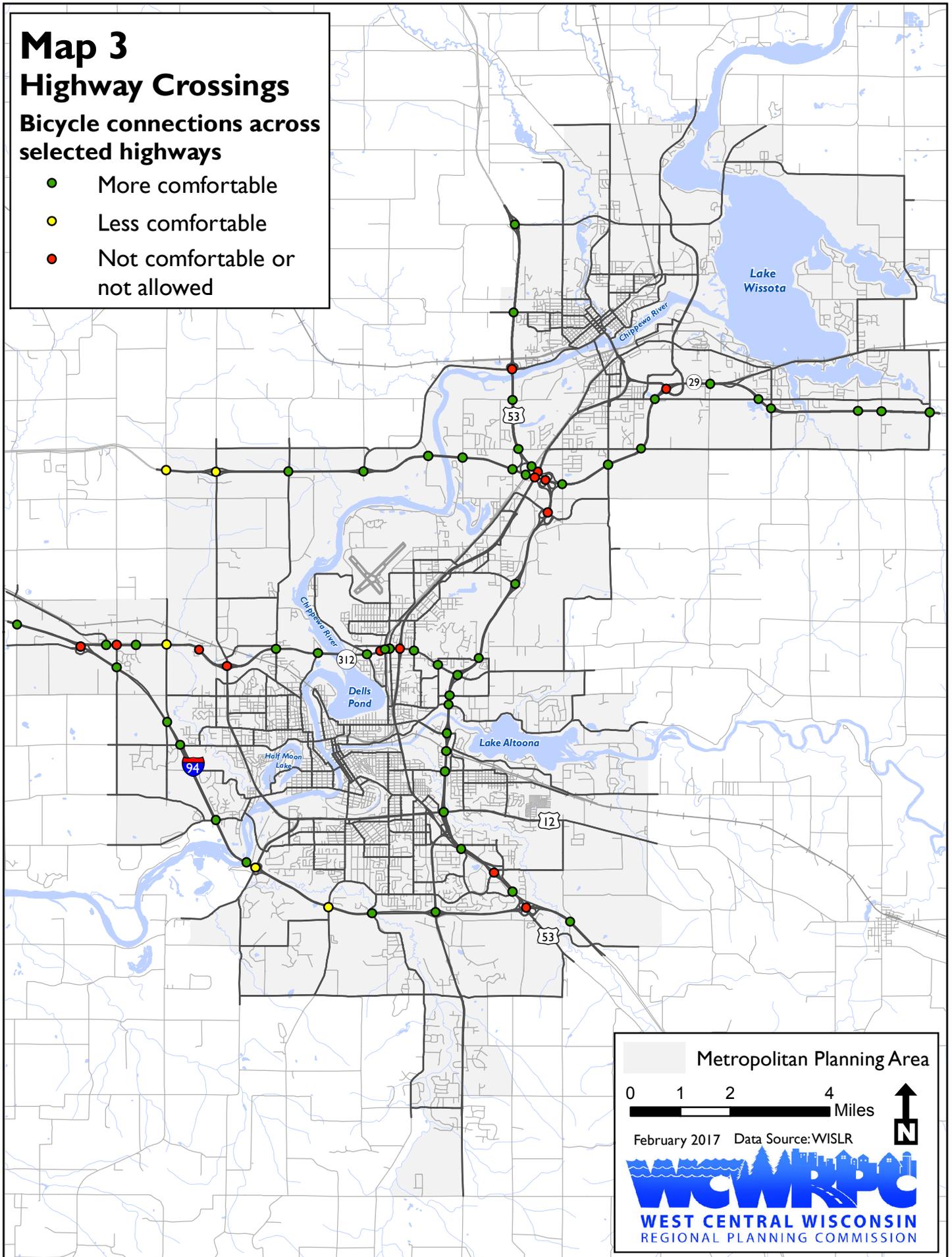
The City of Eau Claire tracks its marked crosswalks and currently has 763 of them at locations throughout the City. These crosswalks are most prevalent downtown, in other business districts, on busy streets in residential neighborhoods, and near schools, often as part of a Safe Routes to School plan.

The City of Eau Claire has established a crosswalk policy team. This team is tasked with identifying and analyzing the current state of crosswalks and crosswalk practices in the City. It will make recommendations about crosswalk policies, including design, type of paint, and signage. It will also develop a decision chart tool to identify locations that are candidates for future crosswalks.

# Map 3 Highway Crossings

## Bicycle connections across selected highways

- More comfortable
- Less comfortable
- Not comfortable or not allowed



### 3.2.5 Related Facilities

#### Traffic Calming

Most streets will not have on-street bicycle facilities such as bike lanes. Even without such facilities, these streets can be safe and comfortable for people biking. Most residential, neighborhood streets are good for bicycling because of their slower vehicle speeds, narrower width, two-way traffic, and cars parked on the street serving as a traffic calming obstruction. Traffic calming reduces automobile speeds or volumes, mainly through the use of physical measures in order to improve the quality of life in both residential and commercial areas and increase the safety and comfort of pedestrians and bicyclists. Traffic calming measures are primarily engineering approaches but also include education and enforcement efforts.

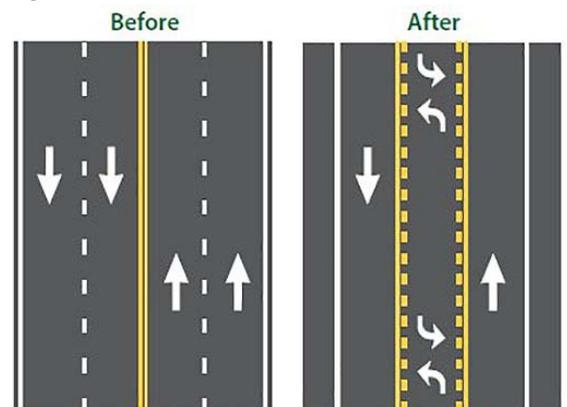
Engineering approaches are grouped into four categories based upon the means by which they reduce volumes or speeds. The following is a description of the categories and examples of facilities:

- *Horizontal Deflection* – refers to two types of traffic calming measures. The first type hinders the driver’s ability to drive in a straight line by creating a horizontal shift in the roadway. This shift forces drivers to slow their vehicles in order to safely navigate the measure. The second type of horizontal deflection measure is designed to narrow the width of the travel lane. Doing so reduces the usable surface of the roadway causing drivers to slow their vehicles to maintain an acceptable level of comfort. Although horizontal deflection measures are mainly used to address speed concerns, applications that narrow the travel lane can improve pedestrian safety by reducing the length of the crossing. Horizontal deflection measures may also have the secondary effect of reducing volumes by leading drivers to choose other streets; however, the effects will typically be minor.
  - Median island, pedestrian refuge island – slow traffic by narrowing driving lanes. Pedestrian refuge islands are medians where pedestrians can stop before they finish crossing the road.
  - Angled slow point - angled deviations to deter the path of travel so that the street is not a straight line (by installation of offset curb extensions)
  - Chicane – an artificial feature creating extra turns in a road
  - T intersection – changes in alignment that convert T-intersections with straight approaches into curving streets that meet at right angles to reduce speeds
  - Parking lanes/narrower driving lanes – parked cars and narrower lanes help slow passing traffic by making slower speeds seem more natural to drivers
  - Striped bicycle lanes/narrower driving lanes – narrower travel lanes help slow passing cars and designated bicycle lanes help make the street safer and more comfortable to ride
  - Mid-block bulb-outs – narrow the travel lanes and help pedestrians cross the street mid-block
  - Traffic circle (not roundabout) – raised circular islands constructed in the center of residential street intersections. They reduce vehicle speeds by forcing motorists to maneuver around them and are sometimes used instead of stop signs.
  - Roundabouts – Like traffic circles, roundabouts require traffic to circulate counterclockwise around a center island. But unlike circles, roundabouts are used on higher volume streets to allocate rights-of-way among competing movements. They are

found primarily on arterial and collector streets, often substituting for traffic signals or all-way STOP signs.

- Street trees and plantings along the street – urban street trees create vertical walls framing streets, providing a defined edge, helping motorists guide their movement and assess their speed (leading to overall speed reductions)
- *Vertical Deflection* – refers to traffic calming measures that create a change in the height of the roadway. When designed properly, vehicles must slow down over these measures in order to avoid unpleasant bumping sensations. As with horizontal deflection measures, vertical deflection measures are mainly used to reduce vehicle speeds, with only minor effects on traffic volumes. Vertical deflection measures can also be used to improve the safety of pedestrian crossings.
  - Speed bumps: speed hump, speed table, speed cushion - a family of traffic calming devices that use vertical deflection to slow motor-vehicle traffic in order to improve safety conditions
    - Speed hump – has a gentle slope that slows traffic down without jolting the passengers or hurting the car
    - Speed table – long speed hump with a flat section in the middle
    - Speed cushion – slows down neighborhood traffic while allowing emergency vehicles to go through without slowing down
  - Raised crosswalk – slows traffic and makes it easy to cross the street with wheelchairs or strollers and increases the visibility of pedestrians
- *Physical Obstruction* – refers to measures that prevent particular vehicle movements, thereby discouraging or eliminating cut-through traffic. The overall traffic volume reduction depends upon the nature of the traffic calming measure and the number of movements obstructed.
  - Diagonal median – replaces a four-leg intersection with two curves, forcing vehicles to turn
  - Full or half street closure – prevents travel in one or both directions on a street by blocking half the street or the full street with a physical barrier. Bicyclists are permitted through the barrier.
- *Signs and Pavement Markings* – can be used as traffic calming measures that regulate traffic movements in lieu of physical changes to the roadway. In certain applications, these measures may produce the same effect as the physical traffic calming measures. However, police enforcement is often required to ensure motorist compliance.
  - Road diet, also known as roadway reconfiguration or road right-sizing – the most common road diet is the 4-lane to 3-lane reconfiguration shown in Figure 16. This low-cost change has been shown to enhance safety, mobility, and access for all road users. Additionally, it can create a Complete Streets environment to accommodate a variety of transportation modes, including space for bike lanes on the outside.

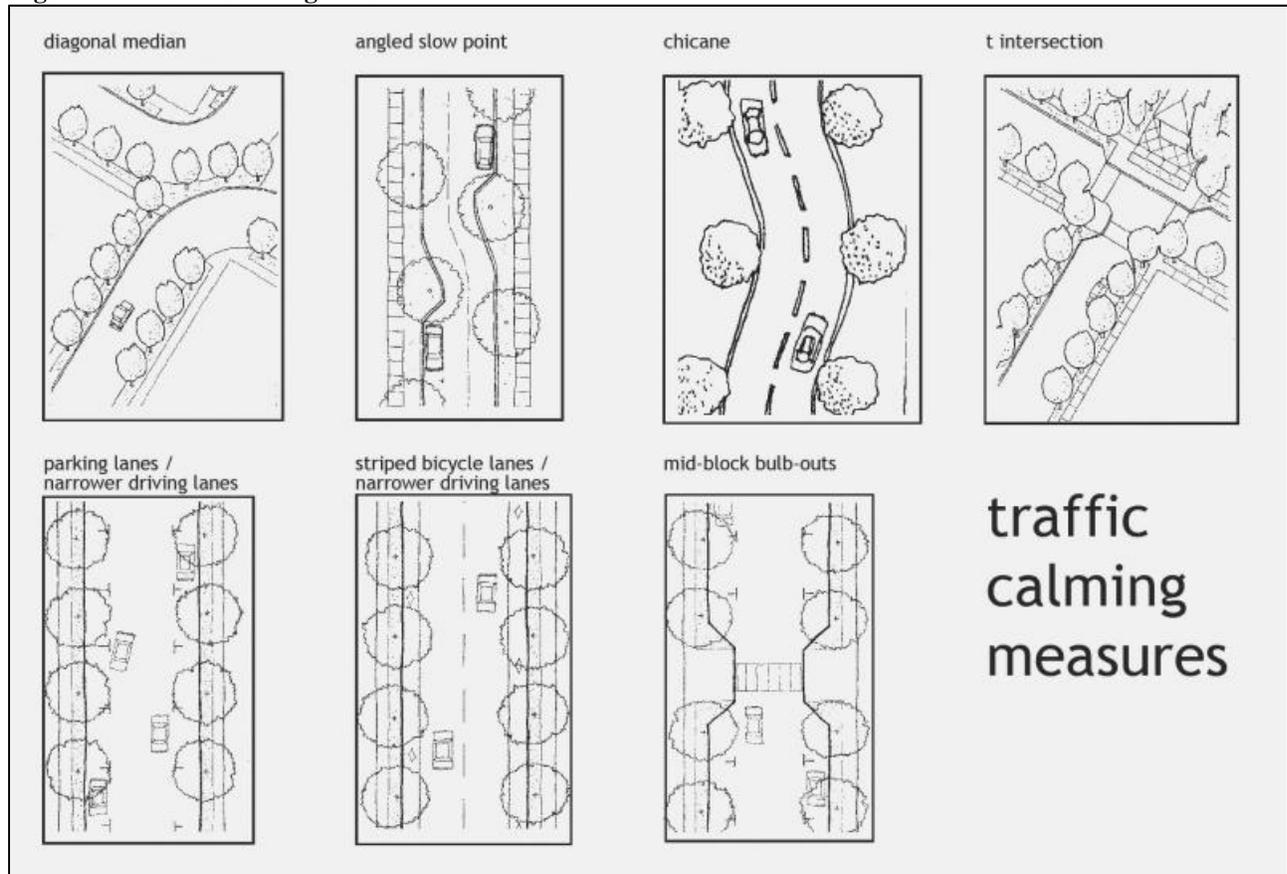
**Figure 16: Road Diet**



Source: Federal Highway Administration

Figure 17 shows several of these traffic calming measures.

**Figure 17: Traffic Calming Measures**



Source: Tri-County Regional Planning Commission (Pennsylvania)

### Bicycle Facilities

Facilities that make bicycling easier, more pleasant, and more secure can help encourage more people to ride. Such facilities include:

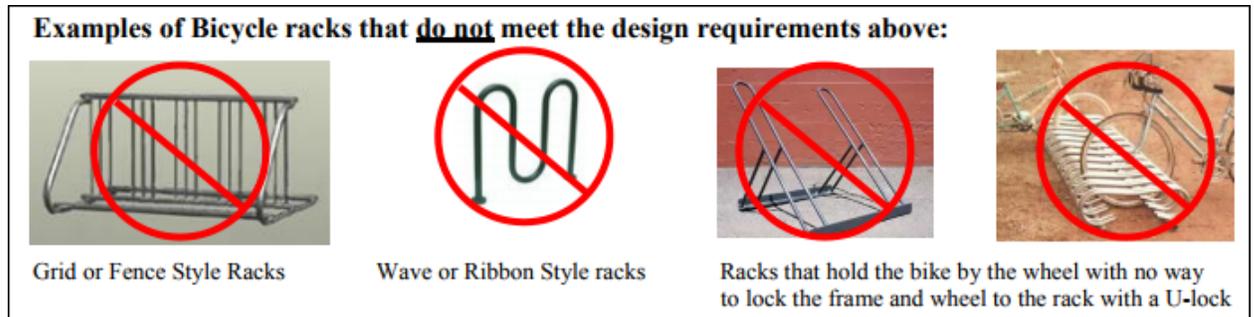
- *Bike parking and bike racks* – The City of Eau Claire Bicycle Parking Ordinance describes the type of bike racks that should be used, the spacing between them, and the locations to install them. The racks have to support the bike frame in two places and prevent the wheel from tilting. Typically, this is an upside down-U shaped rack, such as those at Sam Davey Elementary in Figure 18. Bike racks that are generally unacceptable are shown in Figure 19. The ordinance requires bike parking installation at multi-family dwellings, rooming houses, and non-residential uses. Commercial areas, such as downtown Eau Claire and downtown Chippewa Falls, can be more inviting to

**Figure 18: Preferred Bike Racks at Sam Davey Elementary**



people biking when they provide adequate bike parking. A 2012 Virginia Tech University study of Washington, D.C. commuters found that people with bike parking at their offices were 1.5 times more likely to commute by bike than workers without it.

**Figure 19: Generally Unacceptable Bike Racks**



Source: City of Eau Claire

- *Stations for bike repair* – The City of Eau Claire, through its Bicycle and Pedestrian Advisory Commission, installed two bicycle “Fixit” Stations – one at Lakeshore Park and one in Phoenix Park, as shown in Figure 20. These provide an air pump, simple tools, and a place to hang a bike while working on it. Such amenities make it easier for many riders to do basic bike maintenance and keep their bikes in good operation.
- *Locker room-type facilities* – Places where riders can shower and change clothes after their ride and before entering the office give people greater comfort in transitioning into their work day. Around the country, many private employers provide such facilities. Alternately, companies can purchase memberships at nearby fitness centers that have such facilities available. Some cities have municipally-owned bike centers, such as Chicago’s McDonald’s Cycle Center in Millennium Park, which provides lockers, showers, a snack bar with outdoor summer seating, bike repair, bike rental, and 300 bicycle parking spaces.

**Figure 20: Bike Fixit Station**



Users of the Eau Claire Transit system board and alight from buses at designated, signed bus stops. The rest of that journey, either to or from the bus stop, is usually done on foot or occasionally on bicycle. People need safe ways to walk or bike to their bus stops. People with bikes can place their bike on the rack mounted on the front of the bus, as shown in Figure 21, making it available to complete their trip after disembarking the bus.

**Figure 21: Eau Claire Transit Bus with Bike Rack**



## Bike Share

Bike share is a service in which bicycles are made available for shared use to individuals on a very short term basis. Bike share schemes allow people to borrow a bike at point "A" and return it at point "B". Many bike share systems offer subscriptions that make the first 30–45 minutes of use either free or very inexpensive, encouraging use as transportation. This allows each bike to serve several users per day. For many systems, smartphone mapping apps show nearby stations with available bikes and open docks.

The central concept of these systems is to provide free or affordable access to bicycles for short-distance trips in an urban area as an alternative to motorized public transit or private vehicles, thereby reducing traffic congestion, noise, and air pollution. Bicycle-sharing systems have also been cited as a way to solve the "last mile" problem and connect users to public transit networks.

The reasons people use bike-share vary considerably. Many users do not have their own bicycle and do not plan to purchase one, but they are interested in using bikes as a service. Some who would otherwise use their own bicycle have concerns about theft or vandalism, parking or storage, and maintenance requirements. Some use it as a connection to public transit.

Members of the Eau Claire community, led by the University of Wisconsin-Eau Claire, are researching the feasibility of launching a bike share system in Eau Claire. They are pursuing a relatively new type of bike share referred to as "flexible" or "on-bike" bike sharing. These systems are less expensive because the bikes have the locks built in and can lock anywhere, rather than requiring station docks. The bikes can be unlocked with a smart phone, so no transaction kiosks are required, either. Leaders of this effort are currently pursuing private sponsors and considering contracting with BCycle and its Dash program, as shown in Figure 22.

Figure 22: Bike Share by BCycle Dash



## 3.3 Summaries of Relevant Plans, Policies, and Programs

### 3.3.1 Plans

Numerous plans and policy documents relevant to this Plan, from across the metropolitan area and beyond, were reviewed during the process of developing this Existing Conditions analysis. The review focused on plans and studies prepared by the Wisconsin Department of Transportation (WisDOT), metropolitan/regional plans, and local plans. More detailed summaries of the plans are contained in Appendix B.

- **Statewide Documents** from the Wisconsin Department of Transportation give high-level guidance on the state's overall transportation system and specific policy and engineering guidance on bicycle and pedestrian improvements.

- **Metropolitan and Regional Plans** include past guidance from this MPO on bicycle policies and infrastructure and general transportation recommendations. The three-county Chippewa Valley Trail System Master Plan lays out the off-street trail network that is now nearing completion.
- **Local Government Plans** from towns, village, cities, and counties were reviewed for their inclusion of bicycle and pedestrian elements. Most of these plans acknowledge the need to improve the active transportation network, particularly through off-street trails. The more urban areas include walking and biking as transportation modes while the more rural areas tend to characterize walking and biking as recreational activities.

### 3.3.2 Policies

Policies treating bicycle and pedestrian matters in the metropolitan area vary by municipality. State level statutes serve as the default on some topics, particularly dealing with ownership and operation of the bicycle. Federal policy requirements, particularly under the Americans with Disabilities Act (ADA), affect pedestrian accommodations. Following is a list of general topics and some specific policies and issues within those topics.

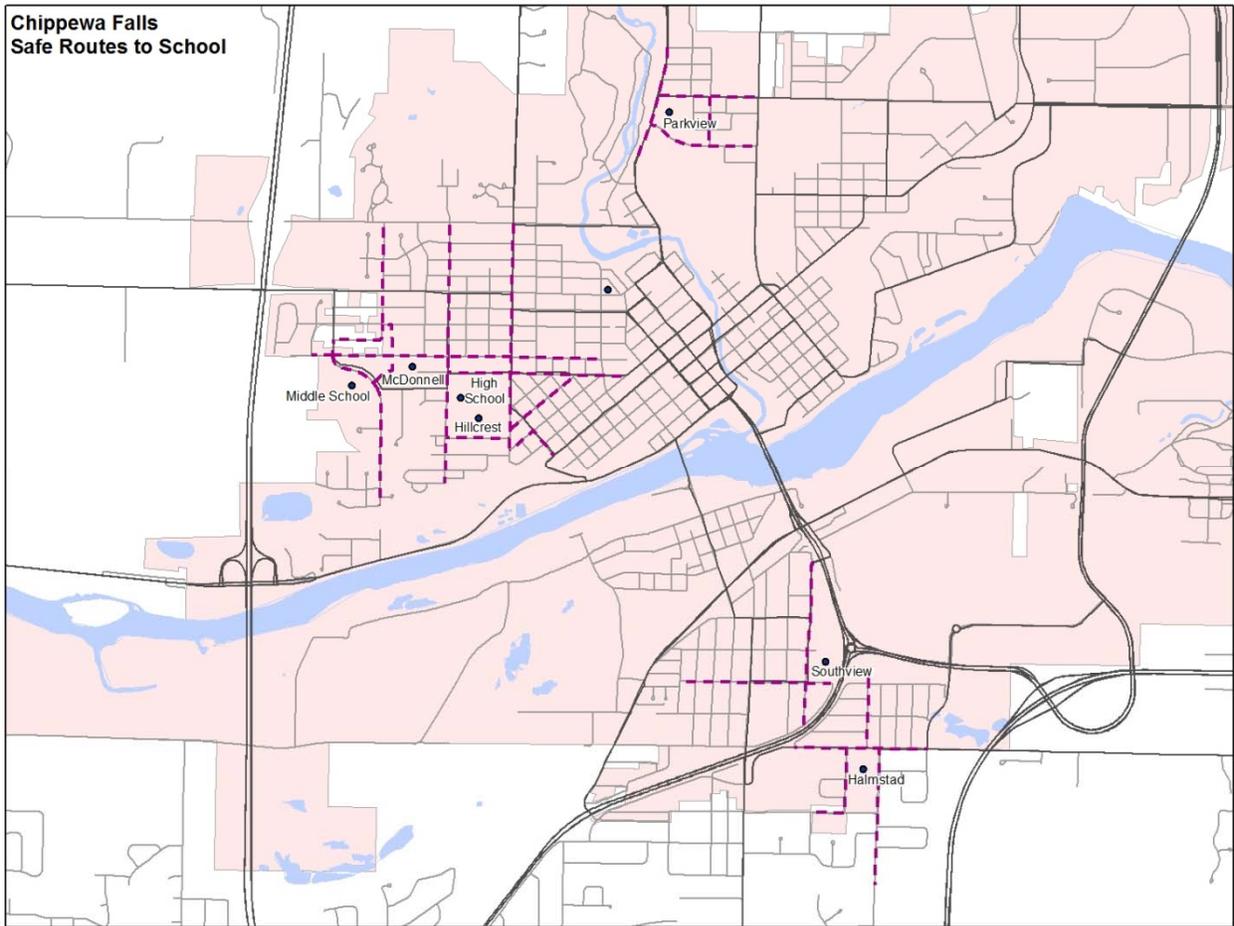
- Ownership and Operation of the bicycle
  - Typically adopts State Statutes
  - Covers licensing, safety, speed, age, hours, riding on sidewalks, parking
- Maintenance of Pavement Markings, Streets, and Trails
  - Repainting crosswalks and bike lanes
  - Ensuring trails are well-paved
- Transportation Planning and Engineering
  - The WisDOT *Facilities Design Manual* has sections providing detailed engineering design guidance on sidewalk design, Complete Streets design standards, mitigation for pedestrians and bicyclists during construction, and more
  - Designation of the bicycle way
  - Sidewalks
    - Some require sidewalk construction uniformly, others leave it up to council discretion, and others do not require sidewalk construction
    - Transition points between cities and towns are where sidewalks often change
    - Construction areas must be designed to accommodate pedestrians
    - Parking lots need to be designed for pedestrian movement
- Land Use Planning
  - Eau Claire
    - Bicycle Parking Requirements – sets bicycle parking standards and requirements for new construction of and additions to multi-family dwellings, rooming houses, and non-residential uses
    - Site plans: Pedestrian and Bicycle Access and Circulation Standards – provides for the inclusion of safe and convenient access and circulation for bicyclists and pedestrians to building entrances from sidewalks or streets in new site plans
- Governance
  - Eau Claire: Bicycle Pedestrian Advisory Committee (BPAC)
- Law Enforcement

### 3.3.3 Programs

Bicycle and pedestrian programs can generally be categorized into *Education and Encouragement* or *Enforcement* type activities. Following is a list of such programs that occur or have occurred in one or more of the municipalities in the metropolitan area:

- *Education and Encouragement*
  - Safe Routes to School planning and infrastructure – see Figure 23, Figure 24, and Figure 25 for maps of routes in Eau Claire and Chippewa Falls and a design concept for Bartlett Avenue in Altoona
  - Bike Week – fun and educational events to promote biking, June
  - Bike to Work Week – activities and incentives to encourage bike commuting, May
  - Walk or Bike to School Day – a day to encourage, assist, and promote students walking/biking to school, October
  - Chippewa Valley Bike Map – a map of bicycle routes and their comfort levels
  - Bike Rodeos - clinics to teach children the skills and precautions to ride a bicycle safely
  - Wisconsin Bike Fed
    - Share & Be Aware – a data driven statewide campaign to make walking and biking even safer by educating all road users. Every person, whether walking, biking, or driving has a role to play in traffic safety. A team of Share & Be Aware ambassadors work across the state to spread these important road safety messages. They are available free of charge to teach classes at business/community groups, attend community events or participate in public meetings.
    - Bike Walk Civics – a workshop that teaches participants how to become powerful bike and walk advocates in their community
  - Bike Valet – free bike parking at *Sounds Like Summer* Concert Series and other events
  - Chippewa Off-Road Bike Association (CORBA) – volunteer based organization dedicated to building, improving, and promoting mountain bike and other singletrack-based opportunities in the Chippewa Valley, including trail running, snowshoeing, and hiking
- *Enforcement*
  - Crosswalk enforcement – officers warning or citing drivers who fail to yield to pedestrians
  - Speed enforcement – officers warning or citing drivers travelling over the speed limit, particularly on streets with higher pedestrian and bicycle usage
  - Bicycle lighting enforcement with bike light distribution – enforcing the requirement for bicyclists to have front and rear lights at night and giving free lights to those without
  - Bicycle patrols – officers riding bicycles as part of a regular patrol route or during a special event

**Figure 23: Chippewa Falls Safe Routes to School Map**

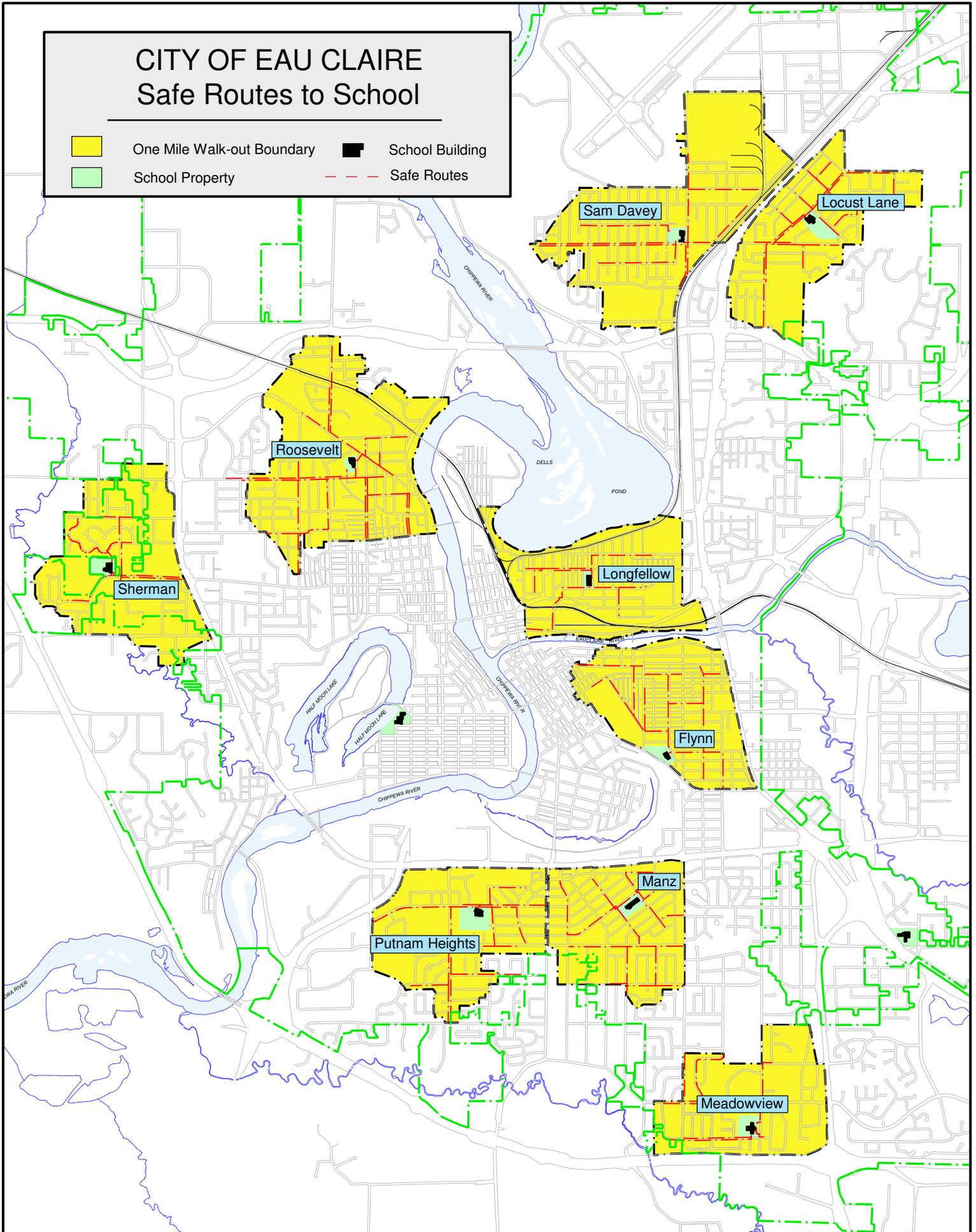


**Figure 24: Altoona Safe Routes to School**

### Altoona – Bartlett Avenue Corridor Concept



Figure 25: Eau Claire Safe Routes to School Map



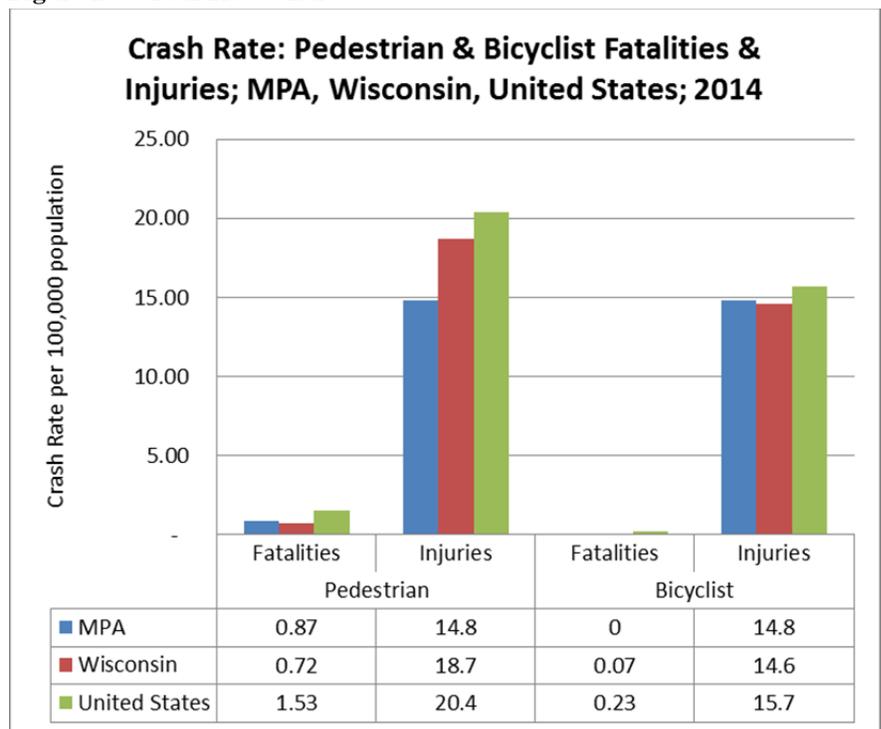
### 3.4 Crash Analysis

One of the most significant impediments to walking and biking is a lack of safety. People walking and biking are inherently vulnerable on a road system dominated by motor vehicles. Many people choose not to walk or bike due to a lack of facilities – such as off-street paved trails, on-street bikeways, or sidewalks – that increase the safety of walkers and bicyclists. This section will examine statistics about crashes that involve people walking and biking. The purpose is to better understand pedestrian and bicyclist crashes, where they happen, who is involved, and other contributing factors so that such conditions can be better managed through engineering, education, and enforcement efforts in order to reduce crashes, enhance safety, and increase walking and biking.

Nationally, the number of fatal crashes among pedestrians and bicyclists has been trending up since 2009-2010, according to the U.S. Department of Transportation. Former U.S. Secretary of Transportation Anthony Foxx put it this way, “This is the safest time for transportation in history, except for pedestrians and bicyclists.”

A comparison of crash rates for pedestrians and bicyclists between the Metropolitan Planning Area, the State of Wisconsin, and the United States can be seen in Figure 26. It shows the 2014 crash rate per 100,000 population of the three different geographies. Compared to the U.S., the MPA has a lower crash rate for all four categories: pedestrian fatalities, pedestrian injuries, bicyclist fatalities, and bicyclist injuries. The MPA has lower rates than Wisconsin for pedestrian injuries and bicyclist fatalities but higher rates for pedestrian fatalities and bicyclist injuries.

**Figure 26: Crash Rate Chart**



For the State of Wisconsin, researchers at the University of Wisconsin-Milwaukee prepared a report for the Wisconsin Department of Transportation: *Wisconsin Pedestrian and Bicycle Crash Analysis: 2011-2013*. Researchers studied pedestrian and bicyclist crashes across the state for the three-year period 2011-2013, giving close attention to the 4,857 pedestrian crashes and 3,365 bicyclist crashes during this period. They also examined pedestrian and bicyclist crash data going back to 2004. Several overall trends in Wisconsin pedestrian and bicycle safety emerged:

- Higher levels of walking and bicycling were associated with greater pedestrian and bicyclist safety: between 2006 and 2013, the number of people walking and bicycling to work increased, and the risk of pedestrian and bicyclist fatalities and injuries (per commuter) decreased.

- Of fatal traffic crashes reported between 2011 and 2013, approximately 10% involved pedestrians and 2% involved bicyclists. Approximately 9% of total trips were made by pedestrians and 1% were made by bicyclists, so these travel modes were overrepresented in fatal crashes.
- The highest concentrations (“hot spots”) of fatal and severe-injury pedestrian and bicycle crashes tend to be along signalized, multilane, arterial roadway corridors in urban and suburban areas with moderate to high levels of pedestrian or bicycle activity. Without controlling for pedestrian and bicycle volumes (or other measures of exposure), it is not possible to determine if these locations experienced more crashes simply because they had more activity or because their conditions were inherently more dangerous. Regardless, these types of locations warrant attention due to high numbers of crashes.

This plan is using the same data source for its analysis as the Wisconsin state report: the Wisconsin Transportation Operations and Safety Laboratory (TOPS). It is a partnership between the University of Wisconsin-Madison and WisDOT. This is a database of all crashes in Wisconsin occurring on public streets and roads that involve motor vehicles, including those crashes between motor vehicles and pedestrians or bicyclists. It does not include crashes between pedestrians, bicyclists, and each other. It is also important to note that crash data, while useful for analysis, does not include the many “near misses” or minor crashes that may be unreported.

These data include three significant limitations:

- *Unreported crashes* – Studies based on police crash databases do not include all crashes involving bicyclists or pedestrians with motor vehicles, as many do not result in filed crash reports. Bicyclist and pedestrian crashes that did not involve motor vehicles are not reported.
- *Lack of exposure data* – There is no indication of how many total people are walking and biking and, therefore, no ability to measure crash rates, only total crashes.
- *Injury severity levels recorded by law enforcement officers* - Police tend to overestimate the severity of traffic crash injuries.

With these limitations in mind, in the Metropolitan Planning Area for the five year period from 2011 through 2015, there were 203 reported crashes between people biking or walking and people driving on roads and streets. This is an average of 41 per year. This does not include the 51 such crashes in parking lots and seven such crashes on private property during the same time period. During this period, there were a total of 11,245 reported crashes in the MPA, so bicycle and pedestrian crashes represent more than 1.8% of the total.

Map 4 shows the locations of the 203 reported crashes. The map includes a layer showing the density of crashes. This density map was developed using a built-in tool from Spatial Analyst, within the ArcMap GIS program.

### 3.4.1 Type

Of the reported 203 crashes in the MPA, four people were killed, 31 received incapacitating injuries, 96 received non-incapacitating injuries, and 62 possibly received injuries (10 were unreported).

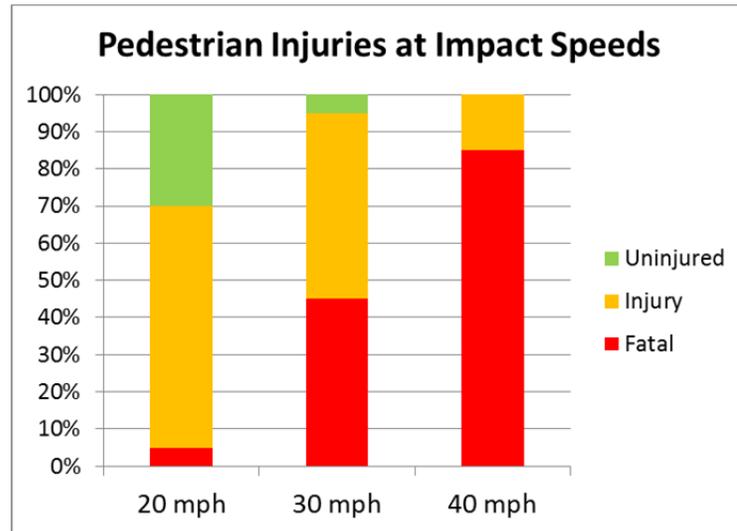
Though bicycle and pedestrian crashes were about 1.8% of the total, the four fatalities from bicycle and pedestrian crashes represent about 18% of the 22 total crash fatalities during the period. This trend

continues with bicycle and pedestrian crashes representing 16% of incapacitating injuries and 11% of non-incapacitating injuries.

Traffic speed is a strong factor in the severity of injuries to bicyclists and pedestrians in crashes with motor vehicles. Figure 27 conveys how pedestrian injury level varies with the speed of the motor vehicle, using a national analysis.

In the MPA, the victims of the crashes were closely divided between people walking and people biking. People walking were victims of 106, or 52%, of the 203 crashes. People biking were victims of 97, or 48%, of the 203 crashes.

**Figure 27: Pedestrian Injuries at Impact Speeds Chart**



Source: Federal Highway Administration

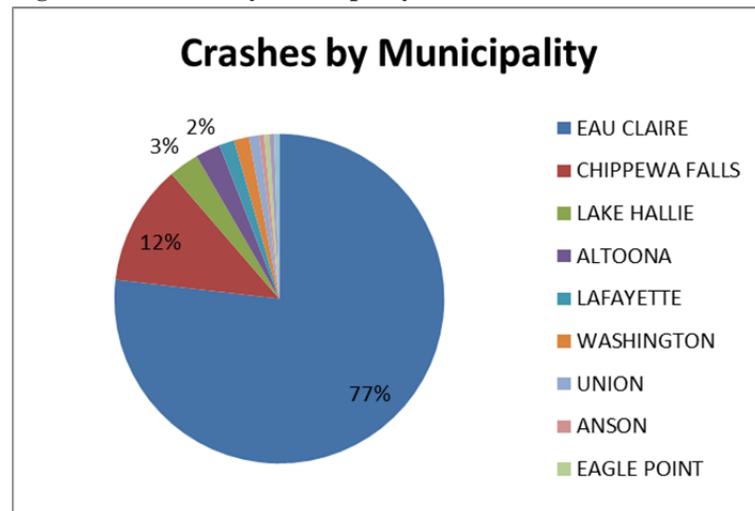
### 3.4.2 Location

The geographic distribution of the crashes in the MPA was heavily skewed to the City of Eau Claire with 77% of the crashes, as shown in Figure 28. This share of crashes is out of proportion to the City’s population, which is about 60% of the metropolitan area’s population.

Of these 203 crashes, two-thirds (67%) occurred at intersections, while one-third (33%) occurred at non-intersection locations. The 137 crashes that occurred at intersections break down as follows:

- 43% occurred at intersections with a traffic signal
- 23% occurred at intersections with a stop sign
- 29% occurred at intersections with no traffic control
- 5% other

**Figure 28: Crashes by Municipality Chart**



Of the crashes where the posted speed of the street or road was recorded:

- 47% occurred on streets where the speed limit was 25 miles per hour or less
- 32% occurred on streets where the speed limit was 30 miles per hour
- 19% occurred on streets where the speed limit was 35 miles per hour or greater
- 2% unreported

# Chippewa - Eau Claire Metropolitan Bicycle and Pedestrian Plan

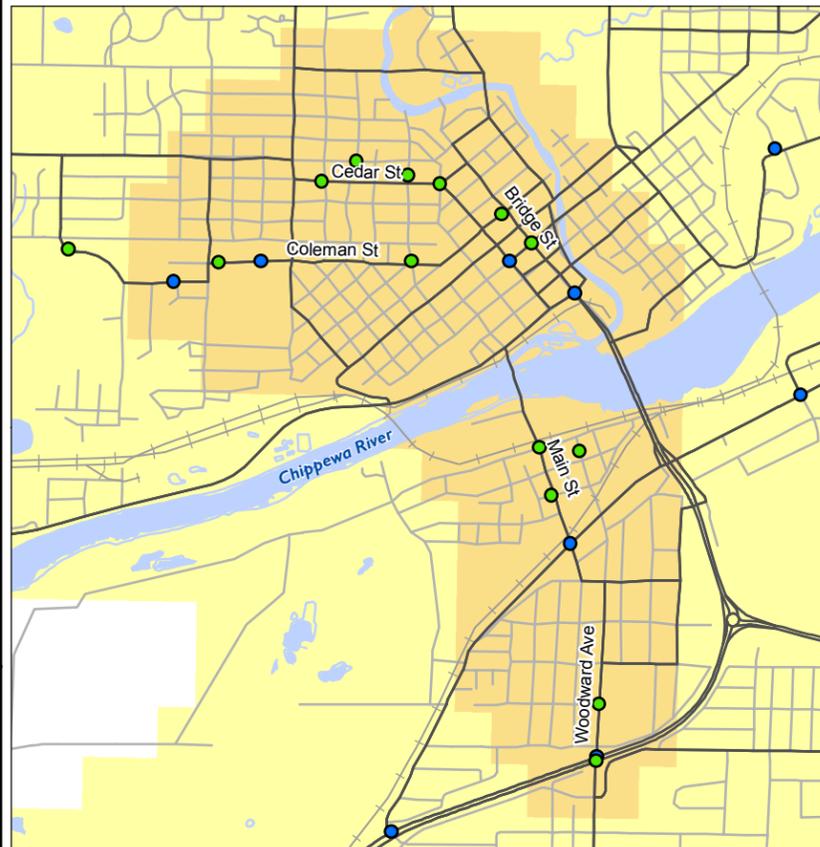
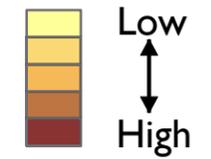
# Map 4

**Bicyclist and Pedestrian  
Crashes, 2011-2015**  
203 crashes

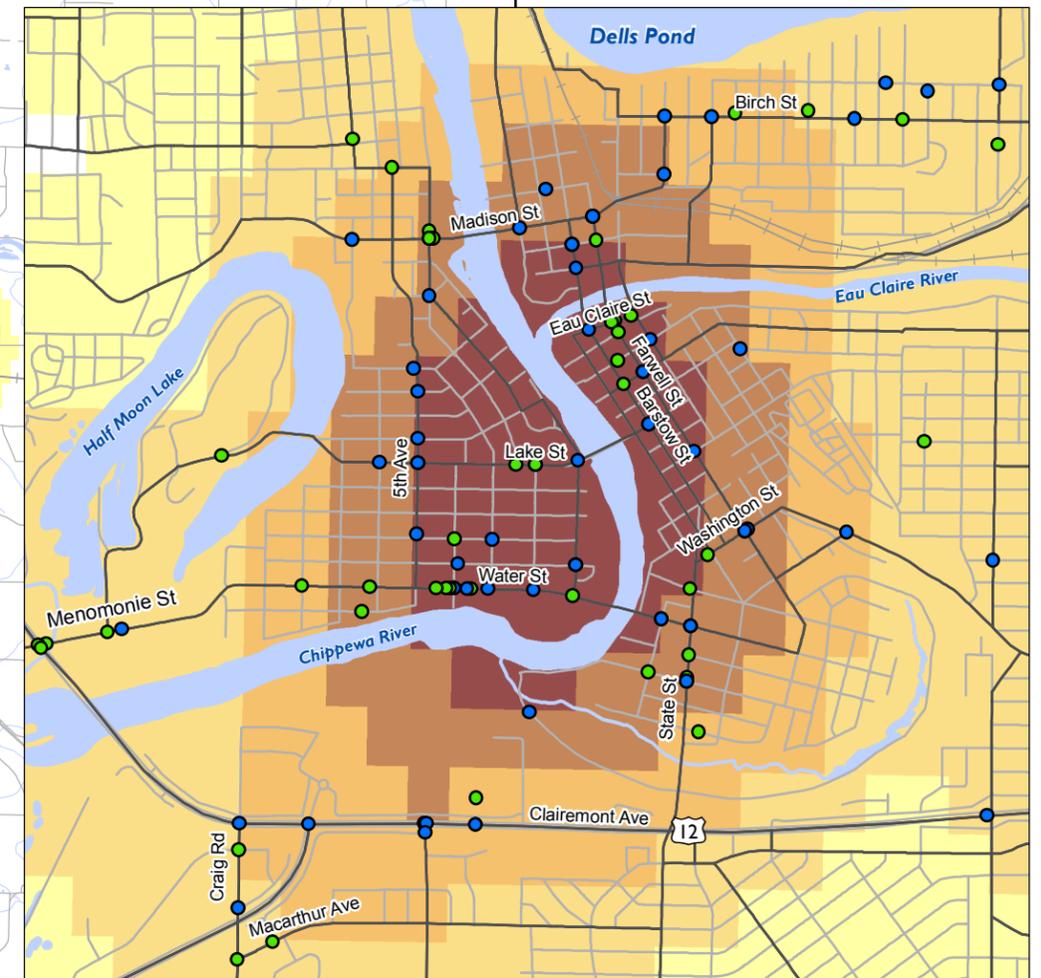
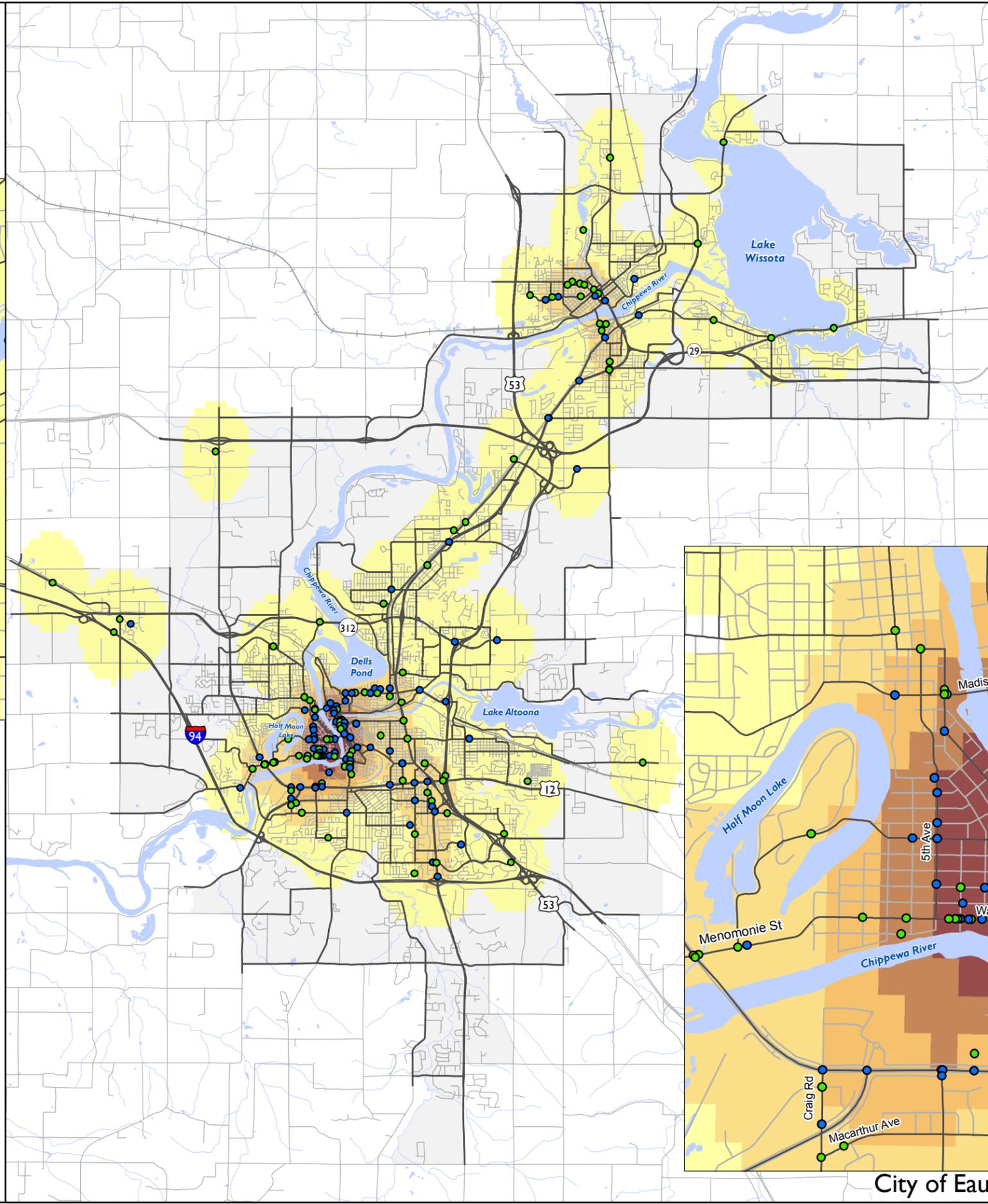
**Crashes**

- Pedestrian
- Bicyclist

**Crash Density**



City of Chippewa Falls Inset



City of Eau Claire Inset

Metropolitan Planning Area



September 2016  
Data Source:  
Wisconsin Traffic Operations &  
Safety Laboratory



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This indicates that safety issues exist on a variety of types of streets and roads: residential, collector, and arterial. Without knowing the amount of bicycling occurring, it is difficult to determine crash rates. It is reasonable to assume that more people are riding on streets with slower speeds, though, so the higher number of crashes on slower streets seems reasonable. All four fatal crashes occurred on streets whose speed limit was 30 miles per hour or greater, where higher vehicle speeds make reacting more difficult and increase the damage of impact.

Map 4 shows where the 203 crashes occurred in the MPA. High crash corridors include the following:

- Eau Claire
  - Downtown: Farwell, Barstow, Eau Claire, and Madison Streets
  - Water Street
  - Lake Street
  - 5th Avenue
  - Birch Street
  - State Street
  - Washington Street
  - Clairemont Avenue
  - Craig Road/MacArthur Avenue
  - Mall Drive/East Hamilton Avenue
- Chippewa Falls
  - Downtown: Bridge Street
  - Chippewa Falls High School and Middle School area: Coleman Street
  - Main Street
  - Woodward Avenue
  - Cedar Street

Focusing initial improvement efforts in areas that have experienced crashes could prove beneficial. These areas are likely places that have higher levels of people walking and biking but are simultaneously less safe. By making such areas safer with the provision of better walking and biking facilities, the people who already travel there will be safer, and more people will likely be attracted to walking and biking in these areas.

### *3.4.3 Demographics*

Of the 203 crashes, 65% (132) of the victims were male, and 35% (71) of the victims were female.

Other differences arise when comparing the types of crashes. For males, of the 132 crashes, 55% (72) were while biking and 45% (60) were while walking. For females, however, of the 71 crashes, 35% (25) were while biking and 65% (46) were while walking. Drawing definitive conclusions from these data is not supported due to the various other factors that contribute to crashes, but the data do show the following about walking and biking crash victims:

- A victim of a crash is more likely to have been male than female
- A male victim of a crash is more likely to have been biking than walking
- A female victim of a crash is more likely to have been walking than biking

According to the League of American Bicyclists, men outnumber women cyclists 2 to 1. For the 97 bicycle crashes, 72 of the victims were men, and 25 of the victims were women. This is equivalent to 74% men and 26% women, or a bicycle crash victim ratio of 2.88 men to 1 woman. Therefore, if the ratio of men to women riders cited by the American League of Bicyclists is correct, 2 to 1, then men here are victims of crashes at a level 44% greater than their proportion of ridership.

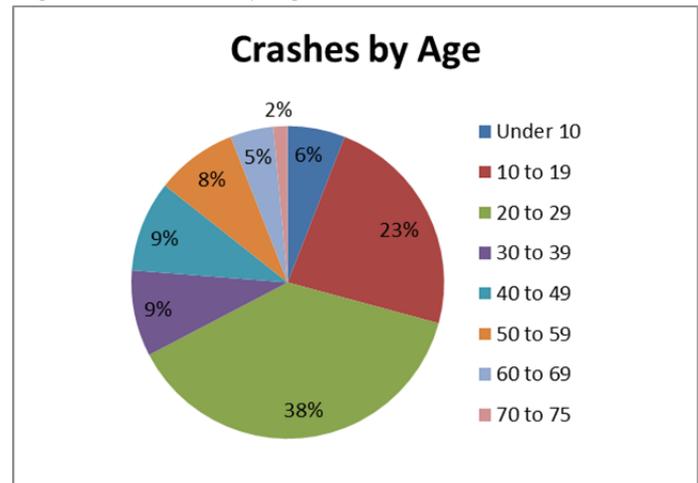
Figure 29 shows the age of crash victims, and indicates that two-thirds (67%) are age 29 or younger. All the other victims put together, between ages 30 and 75, make up 33% of the crash victims. Thirty-eight percent of the crash victims were in the 20 to 29 age group, and 23% were in the 10 to 19 age group. Pinpointing reasons for this overrepresentation by young people is challenging, but they could include:

- Greater exposure – More young people are not old enough to drive or do not have access to a car and therefore rely on walking and biking for transportation.
- Growth and development – Growth of the human body typically continues into the late teens or early twenties. The brain and related rational thinking processes are not fully developed until approximately age 25. This physical and mental immaturity may lead to mistakes in movement and judgment that put young people in harm’s way.
- Location – Young people may be traveling on less-safe streets. Students at the University of Wisconsin-Eau Claire frequently cross State Street and Water Street, which have high traffic counts of about 12,000 and 10,000 vehicles per day, respectively. They also have a higher number of crashes during this five-year period: four on State Street, 11 on Water Street.

Programs and projects directed to young people could have significant benefits:

- Bicycle and pedestrian safety education could help them be more aware of cars and make safer decisions when sharing the street with traffic
- Safe Routes to School plans could help improve the safety of corridors students travel with walking and biking facilities and signage. Such plans also can raise awareness among school leaders, parents, drivers, and the community about students walking and biking to and from school.

**Figure 29: Crashes by Age Chart**



### 3.4.4 Time and Conditions

Figure 30 shows crashes by time of day. Two-thirds (67%) of the 203 crashes occurred between 12:00 noon and 12:00 midnight, more than double the period from 12:00 midnight to 12:00 noon. The three hours with the highest

percentage of crashes were the consecutive hours of 3:00, 4:00, and 5:00 PM. Those three hours account for 11%, 7%, and 8% of the crashes respectively, or 26% combined. These hours are during a peak travel period because they correspond with the times of student dismissal from school and most people

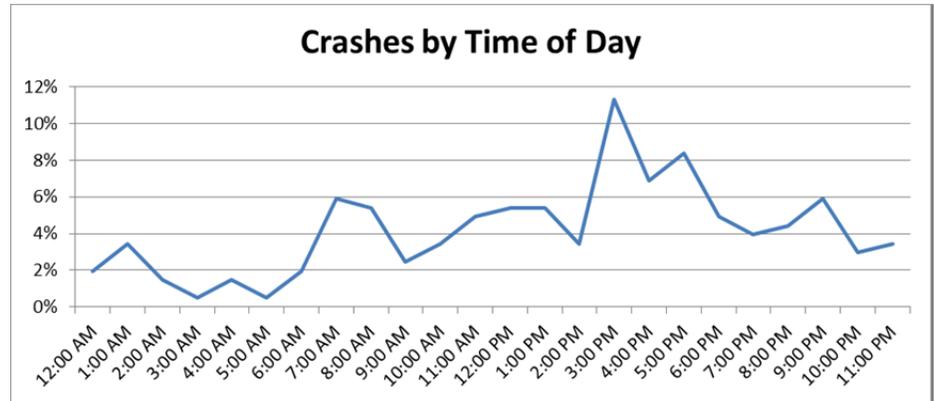
getting off work. There is also a smaller peak during the 7:00 and 8:00 AM hours when people are traveling to school and work. Knowing when walking and biking crashes are more likely to occur can be helpful in taking actions that promote safety, such as:

- Providing increased enforcement of traffic violations and crosswalk yielding during peak periods, particularly near schools, universities, and major employment centers
- Encouraging bicyclists to take alternate routes during peak periods and avoid busy streets that have no on-street bicycle facilities

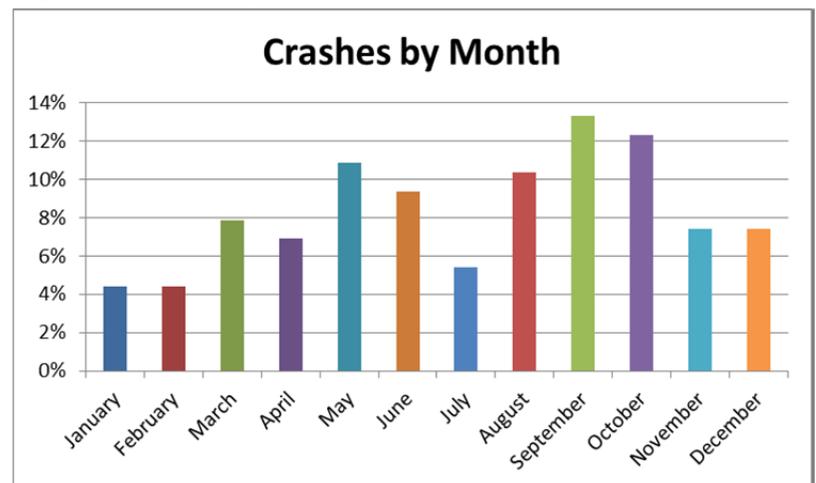
Figure 31 shows the distribution of walking and biking crashes across the months of the year. The highest prevalence of crashes occurs during late spring/early summer – May and June – and late summer/fall – August, September, and October. Twenty percent of the crashes occurred in May and June, and 35% of the crashes occurred in August, September, and October. These periods coincide with nice weather and school/university being in session. A possible response to this could be added education, such as public service announcements, and enforcement efforts during these periods.

The light conditions of the crashes reveal that 62% of crashes occurred during daylight. The remaining 38% of crashes occurred in some degree of darkness, though the vast majority of these occurred in locations with street lights. Encouraging more usage of bicycle lights and highly-visible, reflective clothing and enhanced street lighting could help during these dark situations.

**Figure 30: Crashes by Time of Day Chart**



**Figure 31: Crashes by Month Chart**



The road surface condition in 76% of the total crashes was dry. Wet conditions were present on the road in 13% of crashes, snow was present on 7%, and ice was present on 1% (conditions were unreported for the remaining 3%).

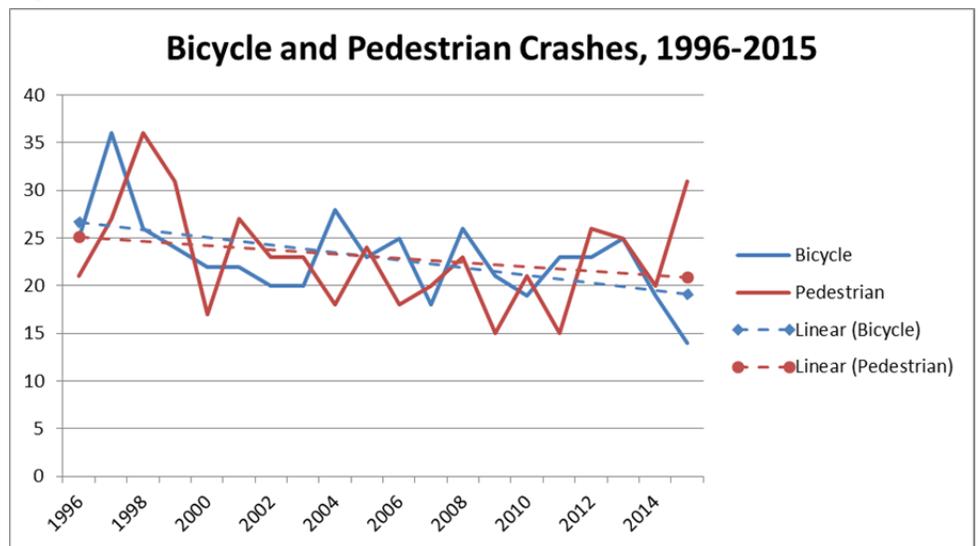
Of these 203 crashes, 21% (43) were hit-and-run crashes, in which the person driving fled the scene after hitting the person walking or biking. In addition to the need to reduce crashes, it is imperative for the survival of the victim to reduce hit-and-run crashes.

### 3.4.5 20-Year Crash Analysis

Comparing bicycle and pedestrian crashes over a longer time – the past 20 years from 1996 through 2015 – reveals a gradual decline in crashes. Figure 32 shows the number of crashes for people biking and for people walking has gone up and down from year to year. The dashed trend lines, however, reveal an overall reduction in both types of crashes during this timeframe.

The fact remains, however, that there were an average of 41 crashes per year over the last five years. Lowering the number of crashes and crash victims is doable and should be a significant effort of local governments. This is critical for the safety of people currently walking and biking, to attract new people to walk and bike, and to improve the overall transportation system.

**Figure 32: Bicycle and Pedestrian Crashes Chart**



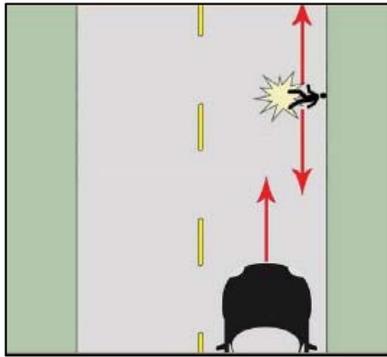
### 3.4.6 Wisconsin Pedestrian and Bicycle Crash Analysis: 2011-2013

Researchers from the University of Wisconsin-Milwaukee, on behalf of the Wisconsin Department of Transportation, conducted the *Wisconsin Pedestrian and Bicycle Crash Analysis: 2011-2013*. They developed a location-movement classification method (LMCM) to analyze and better understand the events leading up to each pedestrian and bicycle crash. The LMCM classifies each crash according to 1) the location of the crash relative to an intersection or roadway segment and 2) the direction of movement of the pedestrian or bicyclist relative to the movement of the motor vehicle. Understanding the types of crashes that people walking and biking experience helps local governments to develop infrastructure improvements, education programs, and enforcement campaigns to target such locations and counter such conditions. Figure 33 shows the top four crash types for pedestrians and for bicyclists.

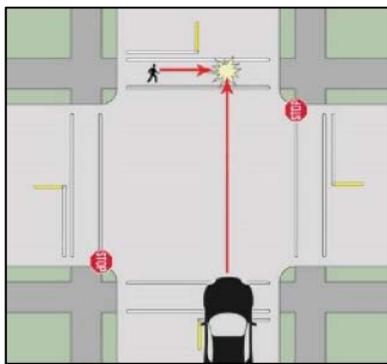
**Figure 33: Fatal Pedestrian and Bicyclist Crash Types**

Top four fatal pedestrian crash types:

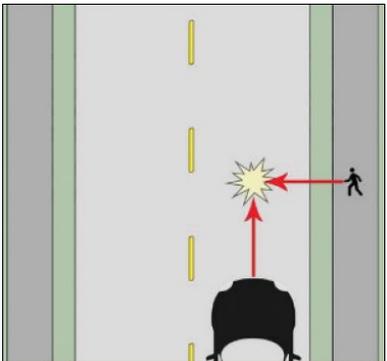
1. Non-intersection:  
Straight-traveling motorist strikes pedestrian in roadway, pedestrian not approaching from left or right



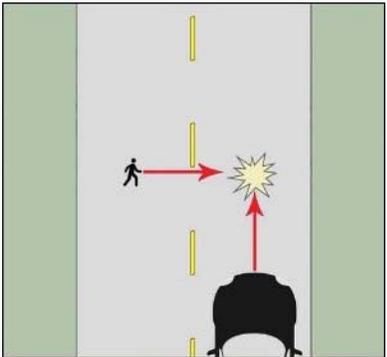
2. Intersection:  
Straight-traveling motorist strikes pedestrian approaching from left on far side of intersection



3. Non-intersection:  
Straight-traveling motorist strikes pedestrian approaching from right

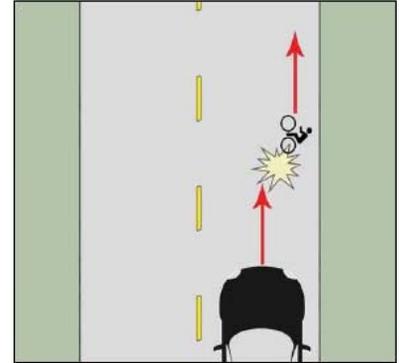


4. Non-intersection:  
Straight-traveling motorist strikes pedestrian approaching from left

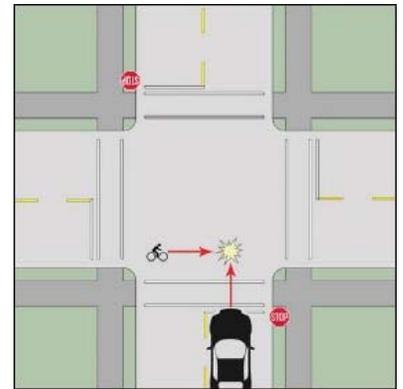


Top four fatal bicyclist crash types:

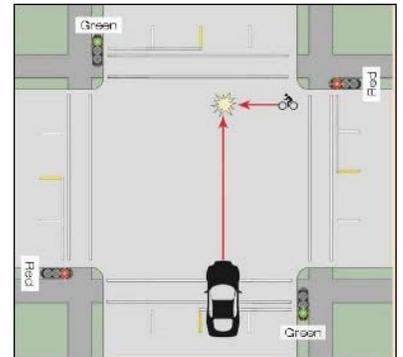
1. Non-intersection:  
Straight-traveling motorist strikes bicyclist on right side of roadway (in a travel lane but not a bicycle lane or shoulder), bicyclist traveling in same direction (includes door-related crashes)



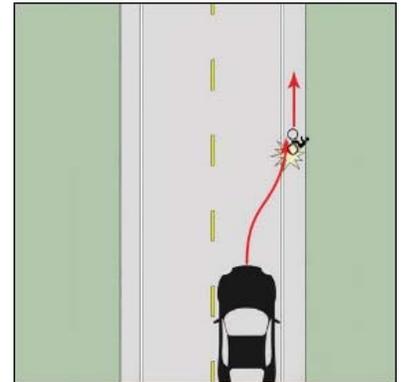
2. Intersection:  
Straight-traveling motorist strikes bicyclist approaching from left on near side of intersection



3. Intersection:  
Straight-traveling motorist strikes bicyclist approaching from right on far side of intersection



4. Non-intersection:  
Straight-traveling motorist strikes bicyclist on right roadway shoulder or bicycle lane, bicyclist traveling in same direction



## Strategies to Improve Pedestrian and Bicycle Safety

The *Wisconsin Pedestrian and Bicycle Crash Analysis: 2011-2013* report recommends a commonly-used, multi-faceted approach to reduce pedestrian and bicycle crash risk, including engineering, education, enforcement, and evaluation strategies.

### *Engineering*

- Reduce roadway design speeds (e.g., reduce the number of lanes, narrow roadway lanes).
- Reduce roadway crossing distances.
- Provide pedestrian and bicycle facilities (e.g., sidewalks, paved shoulders, and bicycle lanes).
- Improve roadway lighting.

### *Education*

- Increase driver awareness of laws requiring them to yield to pedestrians in crosswalks and provide at least three feet of space when passing bicyclists (even when a bike lane exists).
- Increase driver awareness of the danger they pose to their neighbors who are walking and bicycling when they speed, are intoxicated, or are distracted (e.g., texting while driving, eating).
- Increase driver awareness of their responsibility to travel at a prudent speed (potentially lower than the speed limit) in order to be able to react safely to pedestrians and bicyclists at night.
- Increase bicyclist awareness of the risk of riding in the opposite direction of adjacent traffic, disobeying traffic control, and bicycling at night without lights and bright clothing.
- Increase pedestrian awareness of the risk of walking while intoxicated and disobeying traffic control. Emphasize the importance of pedestrian nighttime visibility to aid driver detection.

### *Enforcement*

- Enforce laws to reduce drunk driving, distracted driving, speeding, failure to yield to pedestrians, and passing too close to bicyclists.
- Enforce laws to reduce bicycling at night without lights and pedestrian and bicyclist traffic signal violations.

### *Evaluation*

- Improve police pedestrian and bicycle crash reporting practices to record details such as alcohol involvement by person/individual, crash type, helmet use, use of lights, and relevant maintenance problems.
- Collect pedestrian and bicycle counts and surveys to account for exposure.
- Quantify the impacts of specific intersection and roadway characteristics, education, and enforcement efforts on pedestrian and bicycle crash risk to inform future recommendations.

## 3.4.7 Vision Zero

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all. After starting in Sweden in the 1990s, American cities are now adopting Vision Zero plans, many through the Vision Zero Network. The Vision Zero Network is a collaborative campaign aimed at building momentum and advancing this game-changing shift toward safe, healthy, and equitable mobility for all.

Vision Zero sets a timeline and a commitment and brings stakeholders together to ensure a basic right to safety for all people as they move about their communities. Vision Zero is a significant departure from the status quo in two major ways:

1. Vision Zero acknowledges that traffic deaths and severe injuries are preventable and sets the goal of eliminating both in a set time frame with clear, measurable strategies. This is a major shift for most American communities that establishes clear accountability to ensure safe mobility. History has shown, for example, with campaigns to reduce drunk driving and initiatives to increase recycling, that changing cultural attitudes and ensuring political accountability make a dramatic difference — and increase success. It is time to take this level of intention and focus to the critical issue of traffic deaths.
2. Vision Zero is a multidisciplinary approach, bringing together diverse and necessary stakeholders to address this complex problem. In the past, meaningful, cross-disciplinary collaboration among local traffic planners and engineers, police officers, policymakers, and public health professionals has not been the norm. Vision Zero acknowledges that there are many factors that contribute to safe mobility -- including roadway design, speeds, enforcement, behaviors, technology, and policies -- and sets clear goals to achieve the shared goal of zero fatalities and severe injuries.

Proven strategies include:

- lowering speed limits
- redesigning streets
- implementing meaningful behavior change campaigns
- enhancing data-driven traffic enforcement

Cities around the world are working to save lives, prevent severe injuries, increase physical activity, while also benefitting the environment, the local economy, and advancing equity. By taking action at the local (and state) levels to prioritize safety in our policies and practices, cities can create a new reality in which everyone — those who are walking and driving, and those who are riding a bus or a bike — feel safe and comfortable moving about their community.

The Vision Zero Network is committed to helping communities reach their goal of Vision Zero -- eliminating all traffic fatalities and severe injuries -- while increasing safe, healthy, and equitable mobility for all.

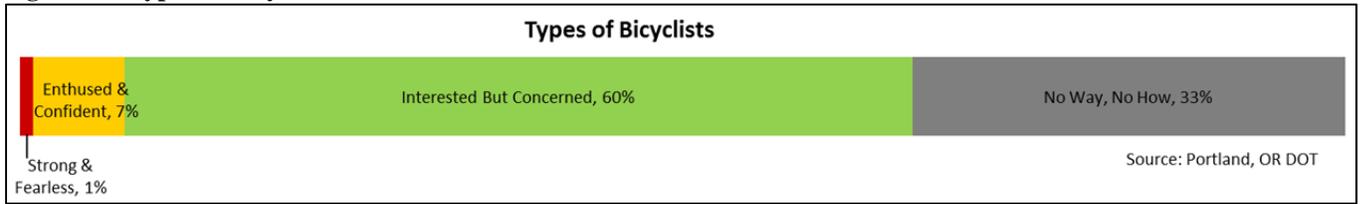
## **3.5 Assessment of Current Bicycle and Pedestrian Friendliness**

### *3.5.1 Bicyclist Stress Level*

One aspect of the existing conditions for walking and biking has to do with how friendly they are to the people walking and biking. Essentially this is about how safe and comfortable it is to walk and bike. One of the goals of this plan is to make streets safer and more comfortable to walk and bike.

In order to determine what street configurations are best for bicycling, it is helpful to use and analyze categories of people and their riding comfort. This is based on the amount of street traffic stress riders are willing to endure versus how much they are concerned by the prospect of being hit by a car. Figure 34 shows data established by the Portland, Oregon Bureau of Transportation through surveying citizens. It has become widely accepted and verified across the country as a way to inform this type of analysis.

**Figure 34: Types of Bicyclists Chart**



The majority of people, classified as “Interested but Concerned,” experience stress when bicycling on streets that expose them to traffic and feel worried about being struck by a motor vehicle. Rather than expose themselves to such stress, they are more likely to avoid riding on high-stress streets or even avoid riding altogether. A widely accepted goal in urban transportation, and a goal of this plan, is to build more on-street bicycle facilities that are comfortable for people in this “Interested but Concerned” group. This is the largest group of people, so providing facilities that help them feel safer would make the most difference in terms of attracting new riders.

Participants in public input opportunities for this plan, discussed further in Section 3.6, were asked to rate their comfort/confidence level with bicycling. The categories were roughly aligned with the types in the chart above. They can be seen with the descriptions respondents were presented in Figure 35.

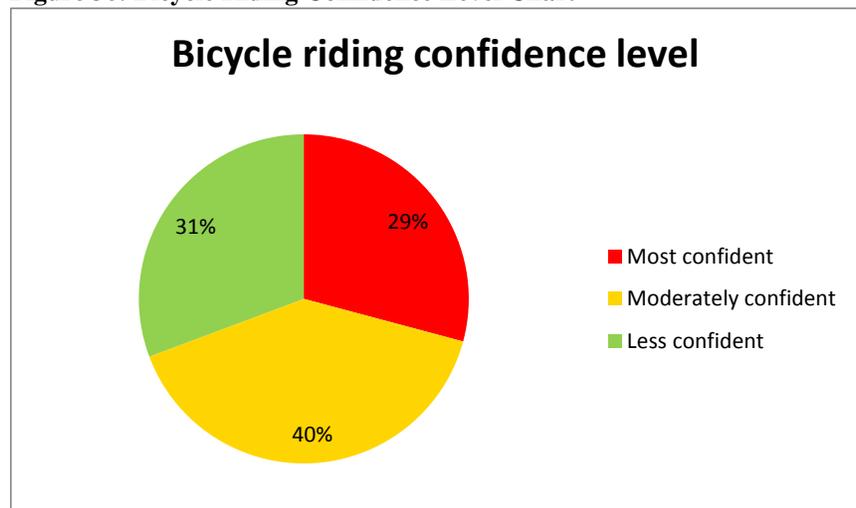
**Figure 35: Types of Bicyclists Table**

Category	Description
Less confident	Only feel safe on separated paths/trails with few traffic crossings
Moderately confident	Prefer separated paths, but will ride on roads where space is available or bike lanes are provided and traffic is manageable
Most confident	Confident and comfortable riding with traffic in most situations, even without bike lanes

Altogether, 229 people responded through the three public input opportunities, and the results are in Figure 36. These results are not representative of the area’s general population, but they give a picture of people in the area who are already riding their bikes. This indicates that more than two-thirds of respondents only feel safe on trails or will only ride on streets with sufficient separation from motor vehicle traffic. The bicycle transportation network should be developed with such riders in mind.

An analysis of bicycle stress level was conducted to give an approximation of riding conditions on streets and roads in the metropolitan area. The objective of doing such an analysis is to better inform local leaders about current on-street conditions, aid in efforts to set bike routes and develop route networks, and inform decision-making about infrastructure improvements such as bike lanes. Some streets may be

**Figure 36: Bicycle Riding Confidence Level Chart**



comfortable for biking “as-is,” while others may need improvements such as bike lanes to become comfortable enough for most people. Ultimately, the goal is to develop a low-stress, on-street network of routes that provide access to important destinations.

Two different methodologies were used in the analysis:

- For streets in the urbanized area, the *Level of Traffic Stress* methodology was applied. This was developed by the Mineta Transportation Institute. It was selected because it provides a greater weight to motor vehicle traffic speeds and volumes, factors that are most influential in how comfortable a street feels to a rider.
- For roads outside of the urbanized area but within the Metropolitan Planning Area, the Wisconsin Department of Transportation’s *Bicycling Conditions for Rural Roadways* methodology was applied. This is found in the *Wisconsin Rural Bicycle Planning Guide*.

Both of these methodologies seek to quantify the amount of exposure to motor vehicle traffic a person bicycling on the given street might experience. This exposure is described as traffic stress. Higher exposure to traffic means the bicyclist experiences higher stress. The two methodologies were incorporated a scale that approximates how comfortable a bicyclist might feel using a particular street. The classifications in the scale are based on the categories shown in the figures above. The scale and a description for each rating can be seen in Figure 37.

**Figure 37: Bicycle Conditions Ratings Table**

Level of Traffic Stress Rating	Bicycling Conditions for Rural Roadways Rating	Description
LTS 1	n/a	Little to no traffic stress. Generally suitable for the entire population. Only applies to low-speed city streets and separated paths.
LTS 2	Good	Little traffic stress. Suitable for most adults, even those with less confidence or experience interacting with motor vehicles (e.g., casual bicyclists).
LTS 3	Moderate	Moderate traffic stress. Uncomfortable and unappealing for some, but adequate for more experienced bicyclists.
LTS 4	Poor	High traffic stress. Only suitable for very skilled and confident bicyclists.

The input data used to make this rating includes traffic volume, posted speed limit, number of travel lanes, width of the roadway, and presence of bike lanes. The rating criteria for each methodology can be seen in Figure 38 and Figure 39; Figure 40 shows their correlation. In general, bicyclist traffic stress increases with increasing traffic volume, higher speed limits, and more travel lanes. On the other hand, bicyclist traffic stress decreases as roads become wider and as they have more space and/or dedicated bike lanes. This analysis did not account for paved trails, whether they are alongside a street or not. This only considers on-street conditions. Map 5 shows these scores geographically, indicating which streets are currently comfortable, which streets could be improved to benefit a connected network of routes, and which streets do not need to be pursued as bike routes (such as busy highways with no shoulders that do not permit bicycling).

**Findings**

These highways were not evaluated, as it is illegal for bicyclists to ride on them in some cases and inadvisable in others:

- Interstate 94
- USH 12
- USH 53
- STH 29
- STH 37
- STH 93
- STH 124 (the portion through central Chippewa Falls is rated)
- STH 178
- STH 312

Streets that were analyzed were functionally classified as collectors, minor arterials, or principal arterials. Figure 41 shows the total mileage and percentage of such streets.

Local streets and roads were not analyzed, mostly due to a lack of traffic count data. Local urban streets were presumed to have a rating of LTS 1 due to their

typically being two-lane streets with 25 mile per hour speed limits, less than 3,000 ADT, and no painted lane markings. Similarly, local rural roads were presumed to the best rating on the Bicycling Conditions for Rural Roadways scale, which equates to LTS 2.

While local streets and roads are typically comfortable for most ages and abilities, many other streets and roads are less comfortable. Most urban collectors and arterials have speed limits of 30 miles per hour or

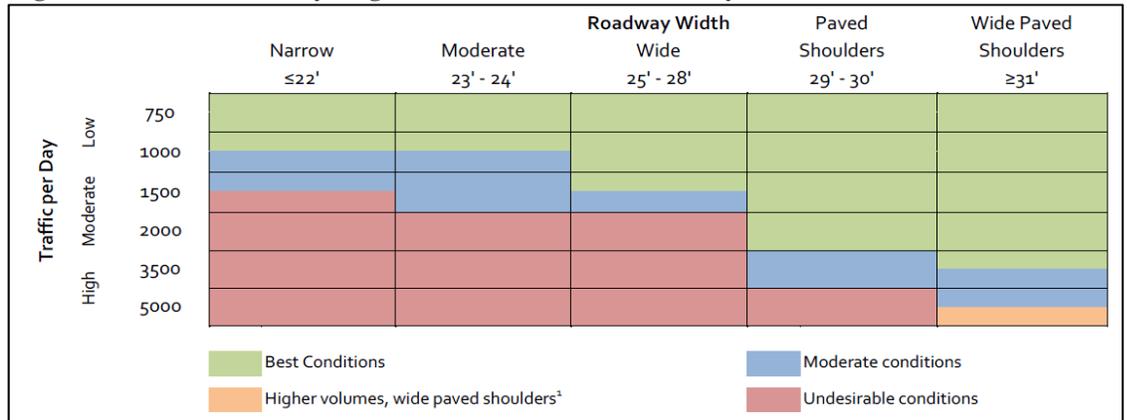
**Figure 38: Level of Traffic Stress Criteria Table**

Mixed traffic criteria		Speed					
		< 25 mph	30 mph	35 mph	40 mph	45 mph	50+mph
Number of lanes	2-way ADT						
	0-750	LTS1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	751-2000	LTS1	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	2001-3000	LTS 1	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4
	3000+	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4
1 thru lane per direction (1-way street or 2-way street with centerline)	0-750	LTS1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	751-2000	LTS1	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	2001-6000	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4
	6001+	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4
2 thru lanes per direction	0-6000	LTS 3	LTS 3	LTS3	LTS 4	LTS 4	LTS 4
	6001+	LTS 3	LTS 4				
3+ thru lanes per direction	any ADT	LTS 3	LTS 4				

Bike lanes		Speed					
		< 25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
Number of lanes	Bike lane width						
	6+ ft	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3	LTS 3
	4 or 5 ft	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
1 thru lane per direction, or unlaned	6+ ft	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 3
	4 or 5 ft	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
2 thru lanes per direction and divided	6+ ft	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	4 or 5 ft	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
3+ lanes or 2 lanes undivided per direction	6+ ft	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	4 or 5 ft	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4

**Figure 39: Generalized Bicycling Conditions for Rural Roadways Table**



**Figure 40: Correlation between Urban and Rural Traffic Stress Ratings Table**

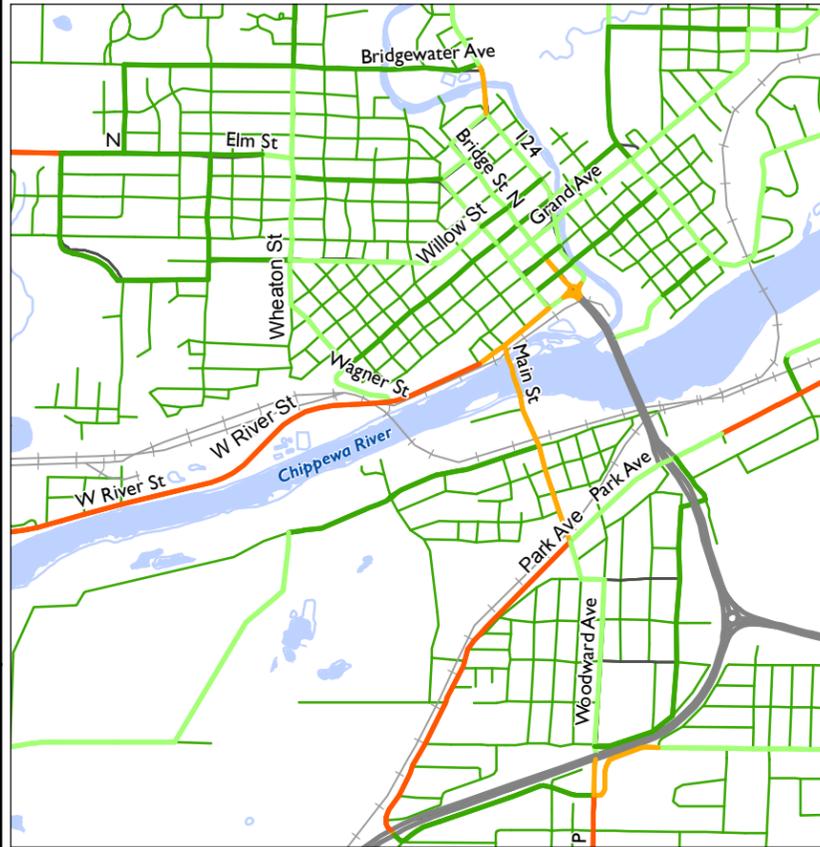
Level of Traffic Stress Rating	Wisconsin Bicycling Conditions for Rural Roads Rating
LTS 1	n/a
LTS 2	Best conditions
LTS 3	Moderate conditions
LTS 4	Undesirable conditions

# Chippewa - Eau Claire Metropolitan Bicycle and Pedestrian Plan

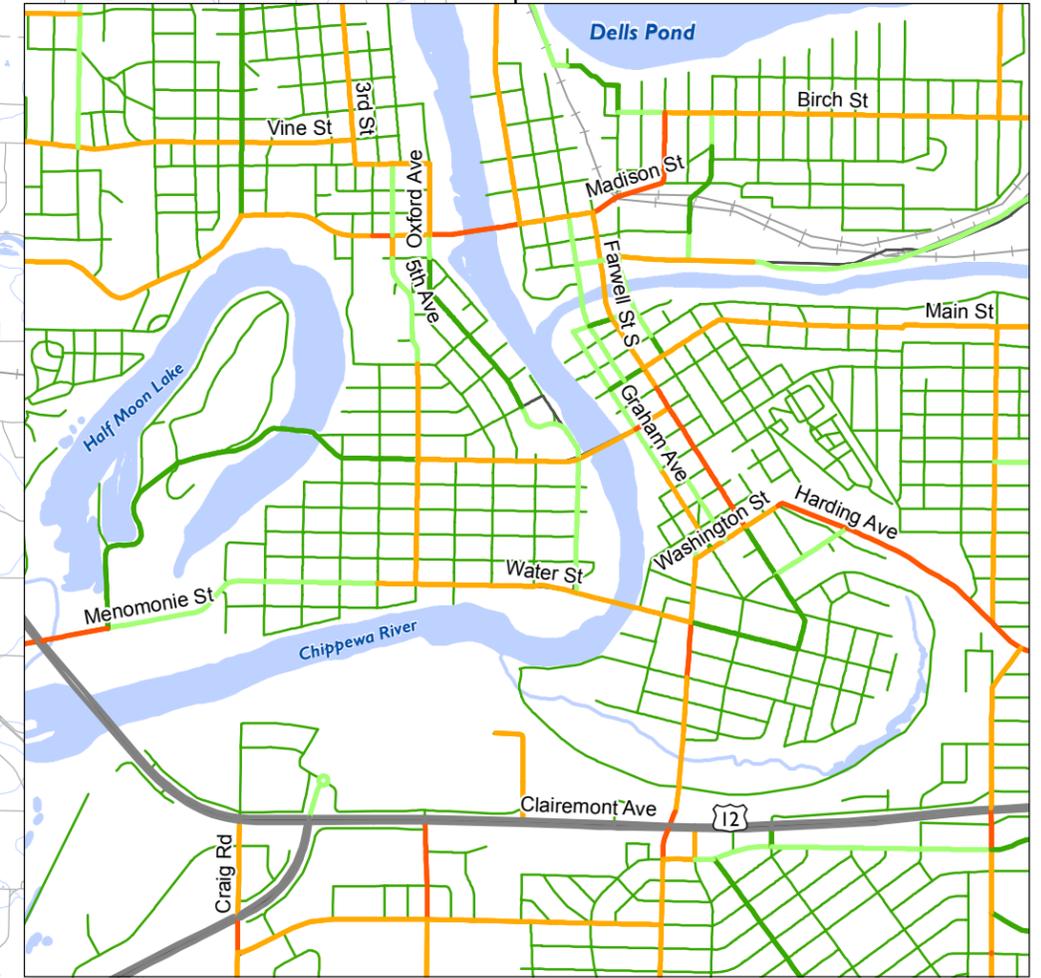
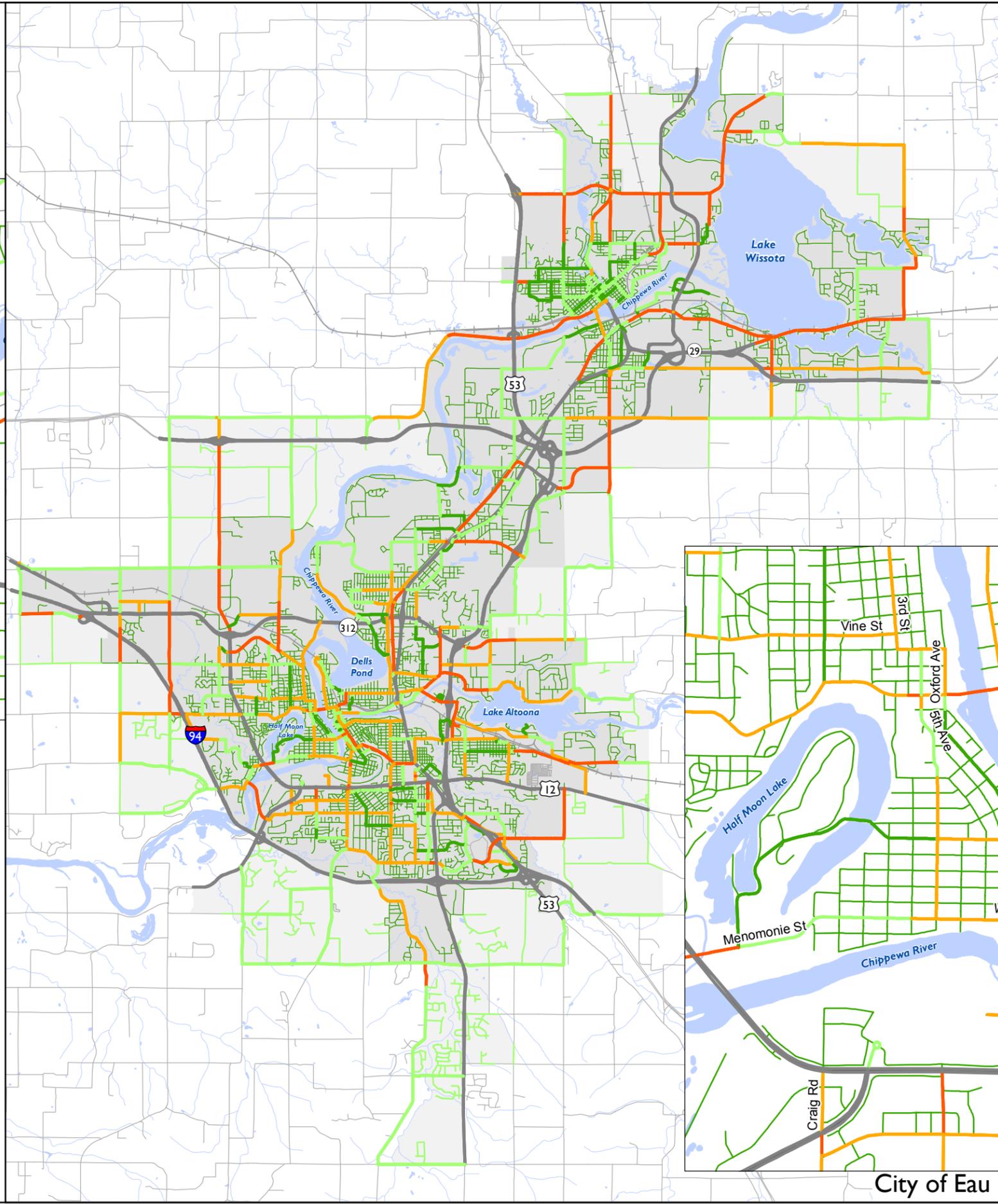
## Map 5

### Bicyclist Stress Level

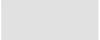
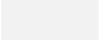
-  Comfortable for most ages & abilities
-  Comfortable for most adults
-  Suitable for experienced cyclists
-  High stress
-  Highways

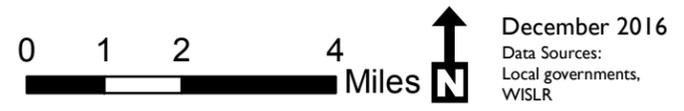


City of Chippewa Falls Inset



City of Eau Claire Inset

-  Urbanized Area
-  Metropolitan Planning Area



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higher and traffic counts of 2,000 ADT or higher. These factors place them at LTS 3, which is suitable for experienced cyclists.

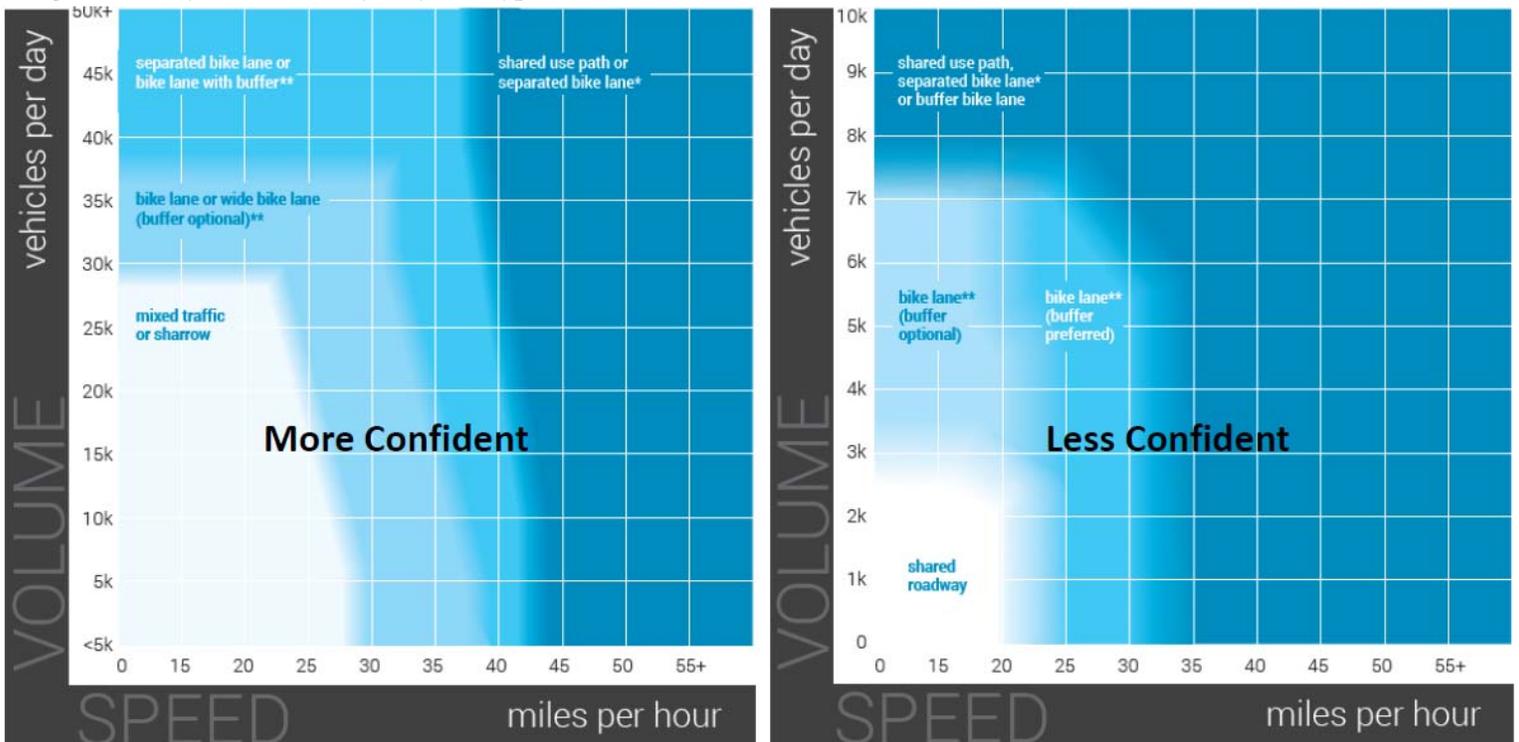
It is important to keep in mind that these ratings were developed by applying broad analysis tools. They do not take into account certain local conditions or characteristics that are not included in the input data. Some data, such as traffic counts, may be from different years and some may be less current than others.

Another way to conceive of bicycle comfort level is based on the type of bicycle facilities that would be necessary to make a street feel comfortable. Figure 42 shows two charts. One is based on the needs of More Confident riders, and the other is based on the needs of Less Confident riders. Each chart shows the posted speed limit on the x-axis. The vehicle traffic count is on the y-axis, but it should be noted that the scale of these values is different. What is shown in the chart is the type of bicycle facility that would be necessary, given the speed and volume of traffic on the street, to make the given cyclist feel comfortable. The general message is that faster speeds and higher volumes require a greater degree of separation to make cyclists comfortable.

**Figure 41: Street Mileage by Bicyclist Comfort Level Table**

Rating	Miles	Percent of Total
1 - Comfortable for most ages and abilities	65	11%
2 - Comfortable for most adults	255	41%
3 - Suitable for experienced cyclists	164	27%
4 - High stress	132	21%
Total	616	100%

**Figure 42: Bicycle Facilities by Bicyclist Type and Street Characteristics**



Source: Highway Capacity Manual: Bicycle Level of Service, Low-Stress Bicycling and Network Connectivity

In addition to this rating system, it is recommended to consult the *Chippewa Valley Bike Map*. This map was developed by local bicycling experts through on-the-ground experience riding the streets, consultation with other riders, and consideration of factors like traffic volumes and speeds, busy

intersections, width of the street and shoulder, parked cars and dooring risk, presence of bicycle facilities like bike lanes or sharrows, and the existence of nearby routes that are better options for biking. Though a formal calculation was not made, the local expertise of these riders, who rode every street and road rated on the map, is likely more specific than a general, remote analysis.

When considering streets and roads for bicycle routes and networks, it is important to consider the level of stress a cyclist may feel and the level of experience that a rider may need. Creating a network of low-stress, on-street routes should be the goal. As such, a good network will permit most people to ride to most destinations. If some locations cannot accommodate such a network under current street conditions and with existing trails, improvements may be warranted. New on-street bicycle facilities, such as bike lanes or paved shoulders, or off-street trails can make routes more comfortable to ride.

### *3.5.2 Bike Network Analysis*

A new analysis tool from PeopleForBikes, which uses the Level of Traffic Stress rating, looks at how well the bicycle network connects people to destinations. These are excerpts from the description of its methodology:

The Bike Network Analysis (BNA) score is an evolving project to measure how well bike networks connect people with the places they want to go. Because most people are interested in biking only when it is a low-stress option, the BNA maps recognize only low-stress biking connections.

It computes the score over four steps: data collection, traffic stress, destination access, and score aggregation. Each of these is described in separate sections below.

#### **Data Collection**

The BNA relies on data from two sources: 1) Census blocks from the U.S. Census and 2) street, bike facility, and transportation data from OpenStreetMap (OSM). OpenStreetMap is built by a community of mappers that contribute and maintain data about roads, trails, cafés, railway stations, and much more, all over the world.

#### **Traffic Stress**

The BNA relies on the concept of a low-stress bike network. Its measures are concerned with low-stress bicycling, so the methodology focuses on roadway characteristics that generally translate to a LTS 1 or LTS 2 rating. In practical terms, this is intended to correspond with the comfort level of a typical adult with an interest in riding a bicycle but who is concerned about interactions with vehicular traffic.

#### **Destination Access**

After establishing the bicycle stress ratings, every census block is evaluated to determine the other census blocks that are within biking distance and can be reached on the low-stress network. The number and types of destinations available in each census block are catalogued.

Points are assigned on a scale of 0-100 for each destination type based on the number of destinations available on the low-stress network, as well as the ratio of low-stress destinations to all destinations within biking distance.

The BNA's six scoring categories are:

1. People – social connections

2. Opportunity – jobs and education
3. Core Services – food and health care
4. Recreation – parks, trails, and community centers
5. Shopping – retail, goods, and services
6. Transit – public transportation

Many of the categories are composed of a mix of destination types, as shown in Figure 43. The category scores are used to calculate one overall score.

### Score Aggregation

The BNA scoring operates at two geographic levels. Individual scoring results from the census blocks were used to develop scores for the whole city. This is accomplished by weighting each census block according to its population and then summarizing scores across the city. The higher the score, the more connected the census block and the city.

The scores for the City of Eau Claire are shown in Figure 43. The City’s overall score is 44 out of 100. Map 6 shows the City of Eau Claire with each street rated either High Stress or Low Stress. Each census block is rated based on the connectivity provided to the selected destinations and given a darker shade for more connectivity. (Variations

between measured Traffic Stress levels with the Bike Network Analysis and those in the previous section have to do with data sources – BNA used OpenStreetMap and the previous analysis used information from the local governments and the Wisconsin Department of Transportation.)

**Figure 43: Bike Network Analysis Scoring Categories and Eau Claire Score**

Scoring category	Weight	Measure	Eau Claire Score
People	15	Population	48
Opportunity	20	Employment K-12 education Technical/vocational school Higher education	31
Core Services	20	Doctor offices/clinics Dentist offices Hospitals Pharmacies Supermarkets Social services	52
Recreation	15	Parks Recreational trails Community centers	58
Shopping	15	Retail shopping	52
Transit	15	Stations/transit centers	24
Total possible = 100			<b>Overall Score = 44</b>

*Source: People for Bikes: Bike Network Analysis*

# Map 6 Bike Network Analysis

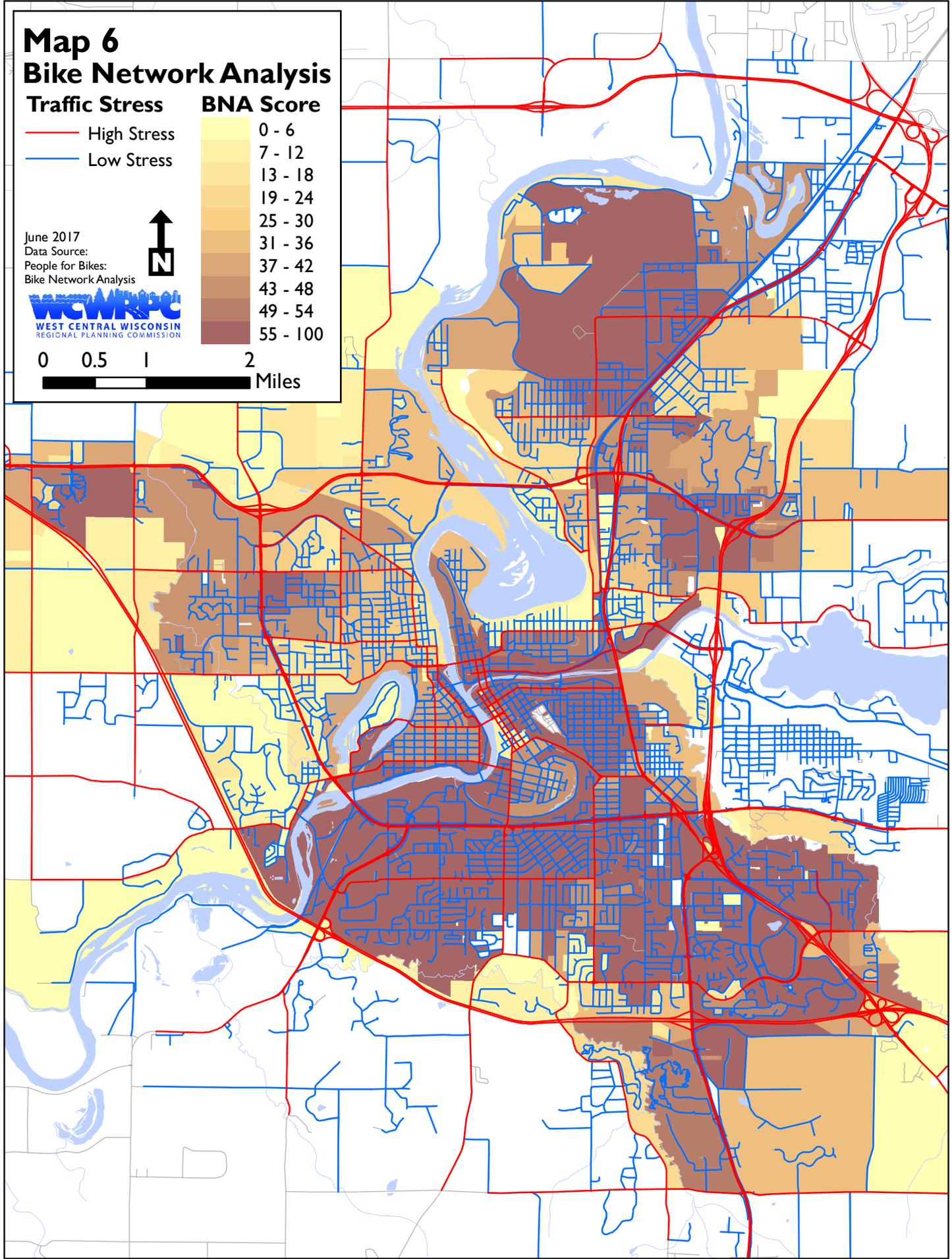
## Traffic Stress

- High Stress
- Low Stress

## BNA Score

- 0 - 6
- 7 - 12
- 13 - 18
- 19 - 24
- 25 - 30
- 31 - 36
- 37 - 42
- 43 - 48
- 49 - 54
- 55 - 100

June 2017  
Data Source:  
People for Bikes:  
Bike Network Analysis



### 3.5.3 Walk Score

There is not an equivalent tool for assessing pedestrian friendliness. There is, however, an analysis called Walk Score. Walk Score measures the walkability of any address based on the ease of accomplishing errands on foot. For each address, Walk Score analyzes hundreds of walking routes to nearby amenities such as grocery stores, schools, restaurants, and parks. Points are awarded based on the distance to such amenities in each category. Amenities within a 5 minute walk (.25 miles) are given maximum points. A decay function is used to give points to more distant amenities, with no points given after a 30 minute walk.

Walk Score also measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density. Data sources utilized in score development include Google, Education.com, Open Street Map, the U.S. Census, Localeze, and places added by the Walk Score user community. Walk Score uses the scale shown in Figure 44.

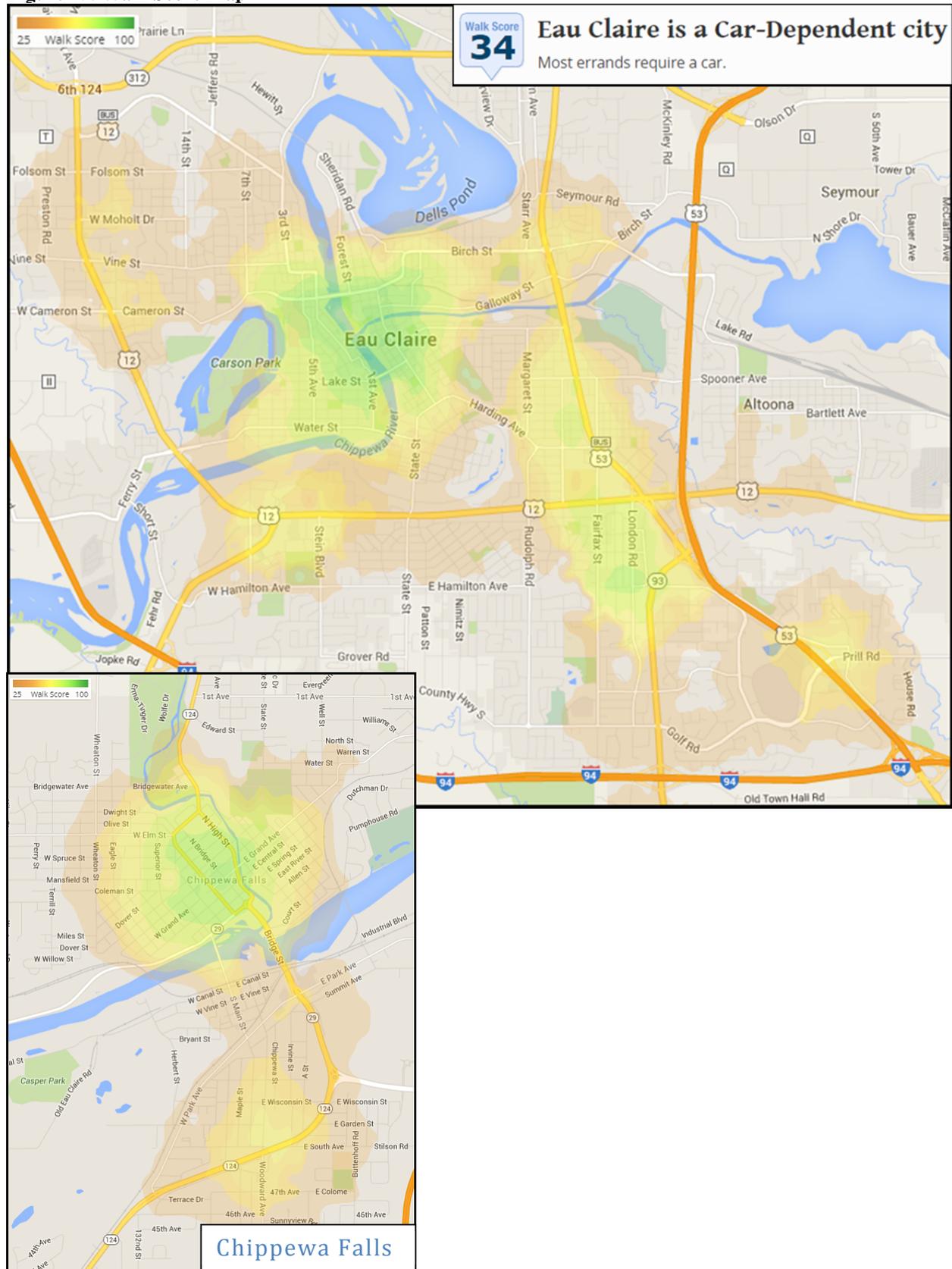
**Figure 44: Walk Score Description**

Walk Score®	Description
90-100	<b>Walker's Paradise</b> Daily errands do not require a car.
70-89	<b>Very Walkable</b> Most errands can be accomplished on foot.
50-69	<b>Somewhat Walkable</b> Some errands can be accomplished on foot.
25-49	<b>Car-Dependent</b> Most errands require a car.
0-24	<b>Car-Dependent</b> Almost all errands require a car.

To improve an area's Walk Score, it is important to provide a mix of land uses that would allow people to more easily walk to desired trip destinations such as work, school, the grocery store, shops, and restaurants.

Based on this analysis, Eau Claire earned a score of 34: Car-Dependent. This means most errands require a car. No other municipality had enough population to receive its own score, but Chippewa Falls was mapped, as shown in Figure 45.

**Figure 45: Walk Score Map**



## 3.6 Public Engagement

Public participation was essential to the development of this plan. The information gathered from more than 280 participants through various techniques has guided and shaped the plan. The primary modes of outreach were open-house-format meetings, an online survey, and an online WikiMap. Through news media coverage of the plan in five print and television stories, more people learned about the planning effort. This involvement and awareness will be important to build support for the implementation of the plan. Appendix C contains more information from the public engagement process.

### 3.6.1 Open Houses

From the 80-85 attendees at three open houses, we gained a better sense for the following. Additional details are in the Appendix:

- The type of cyclists that attended – *Most are “Moderately Confident”*
- The destinations people walk or bike to currently and the ones they would like to go to if they were more accessible – *Most go to parks and trails and would like to go to the grocery store and retail shops*
- The reasons people walk and bike and the factors that prevent them from doing so – *Most go for exercise and fun and are prevented from going by a lack of safe facilities and dangerous roads*

Together, this information tells us for whom walk and bike facilities should be designed and where such facilities should provide access. For instance, by knowing that the majority of respondents are moderately confident riders and that the grocery store is the most common destination to which they would like to go could support the construction of bike lanes to grocery stores.

### 3.6.2 Online Survey Results

Summarized in Figure 46 are the results of the 131 responses to the online survey conducted for this plan. The respondent demographics are compared to the demographics for the Eau Claire Urbanized Area. More detailed results of the survey are found in Appendix C.

**Figure 46: Online Survey Summary and Eau Claire Urbanized Area Demographics Table**

Respondent demographics	Eau Claire urbanized area demographics (American Community Survey, 2015 Five-year estimate)
Most (58%) of respondents were from Eau Claire.	64.0% of the population is in the City of Eau Claire.
Most (61%) were between the ages of 30 and 59.	The median age is 33.8.
Most (58%) of respondents were male.	49.5% are male.
Almost all (96%) of the respondents were white.	92.6% are white.
The largest group (45%) lived in two-person households.	The mean household size is 2.34 members.
The vast majority (88%) had an associate’s degree or higher.	43.3% have an associate’s degree or higher.
The vast majority (75%) work for pay outside the home.	69.7% of those aged 16 and over participate in the labor force.
Most (52%) had annual household incomes between \$50,000 and \$100,000.	The median income is \$32,358.
The largest group (47%) of bicycle riders were moderately confident.	No equivalent in the American Community Survey.

- *Safety is a primary concern:* respondents felt that more safe walking and bicycling facilities would help them feel comfortable travelling streets that are heavily-trafficked with fast-moving vehicles. A lack of on-street bike facilities, sidewalks, and crosswalks are a deterrent to walking and biking. Trails that are separated from streets altogether are seen as preferable.
- *Purpose for walking and biking:* most respondents indicated that they walk or bike for transportation, and even more indicated that they walk or bike for exercise and recreation. These preferences can also be seen in the destinations to which people walk or bike – the top two were “Park, trail, recreation area” and “Around my neighborhood,” both of which are exercise and recreation-type purposes. On the other hand, people also want to make more utilitarian-type trips: the top two destinations, if they were more easily accessible, were “Restaurant, coffee shop, bar” and “Grocery store.”
- *People enjoy walking and biking:* The overwhelming majority of respondents said they “love” or “like” walking and biking. Moreover, the vast majority of respondents said they want to walk or bike more than they currently do. This passion for these modes of transportation combined with the unmet demand for them indicate the potential for increasing rates of walking and biking among people who already walk or bike. The inference is that there may also be potential to motivate people who do not currently walk or bike to do so in the future.

### 3.6.3 WikiMap

Some conclusions can be drawn from the input of the 69 respondents to the WikiMap, though the size of the group is not broadly representative. More detailed results of the WikiMap are in Appendix C.

- Respondents shared routes and points across the MPA. From urban centers to local neighborhood streets to rural roads, people indicated where they currently walk and bike, as well as where they would like to walk and bike if it were easier and safer. Map 7 shows the routes people currently walk and bike and destinations they visit. Map 8 shows the routes people would like to walk and bike and barriers to doing so.
- Respondents frequently bike and walk on the trail system. The trails provide good access to many destinations. The trail system should be expanded to provide access to more destinations for more people. Safe access to get on the trail system via the street network should be improved to expand the area served by trails.
- While “Park, trail, and recreation area” was the most cited destination, numerous utilitarian destinations were cited. Such responses indicate that many people walk and bike for transportation, not just for recreation. Treating walking and biking as more highly-prioritized modes of travel would increase the importance of these two forms of transportation.
- Some people are confident enough to travel via major streets, while others find such streets a barrier and avoid them. Improving the bike and pedestrian facilities on major streets would make them more comfortable for more users. Such improvements could include trails, bike lanes, paved shoulders, and sidewalks. In places where such improvements are not viable and alternate routes are available, people could be directed to such alternatives.
- Infrastructure for crossing busy streets is often insufficient. Crosswalks are frequently ignored by people driving. Traffic signals with pedestrian-activated buttons are usually inaccessible to people biking on the street. Some streets are excessively wide and have so much traffic, such as Clairemont Avenue, that crossing them is a challenge due to short signal phases and fast vehicles.

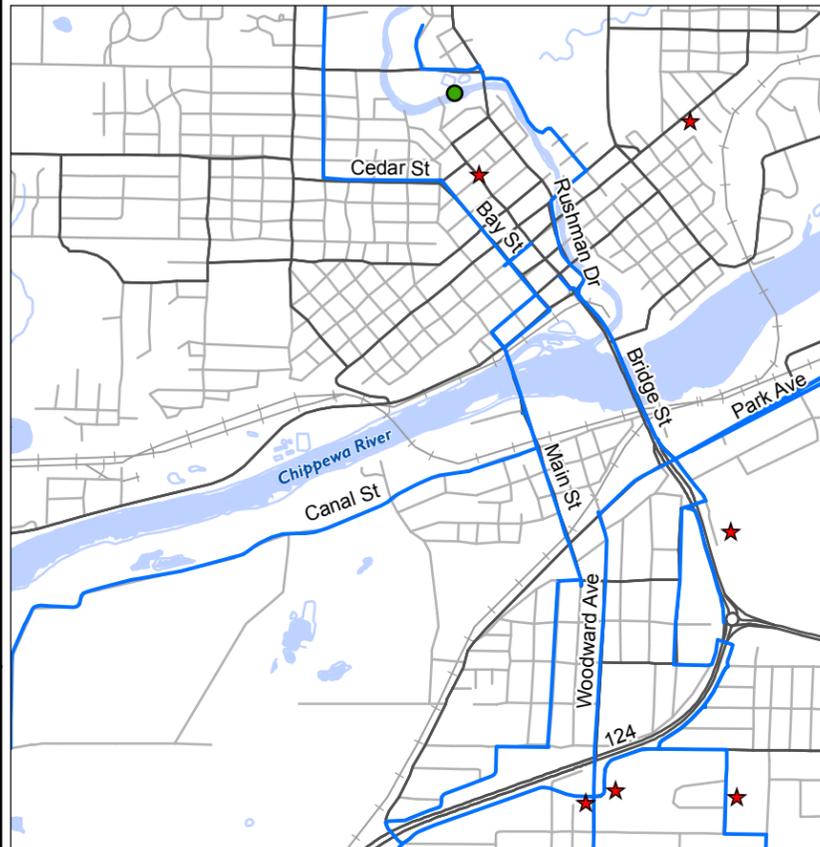
# Chippewa - Eau Claire Metropolitan Bicycle and Pedestrian Plan

# Map 7

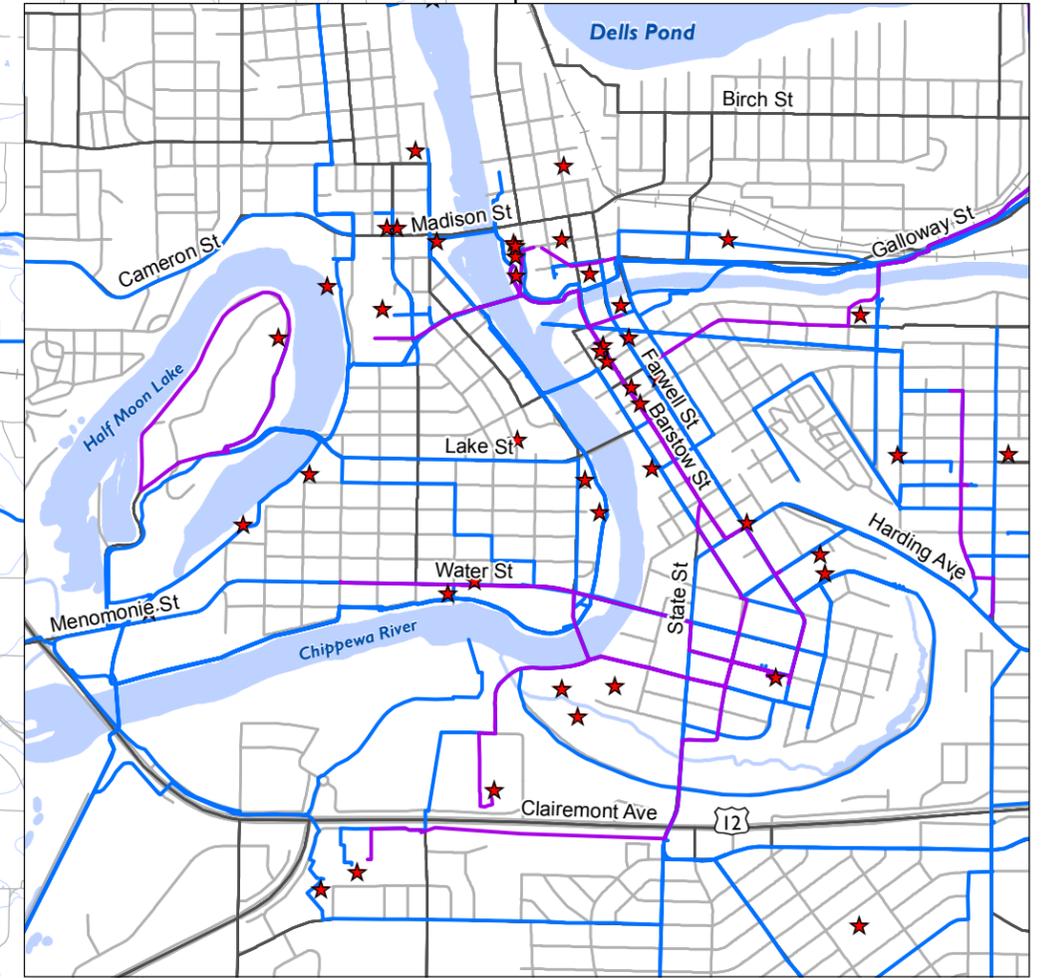
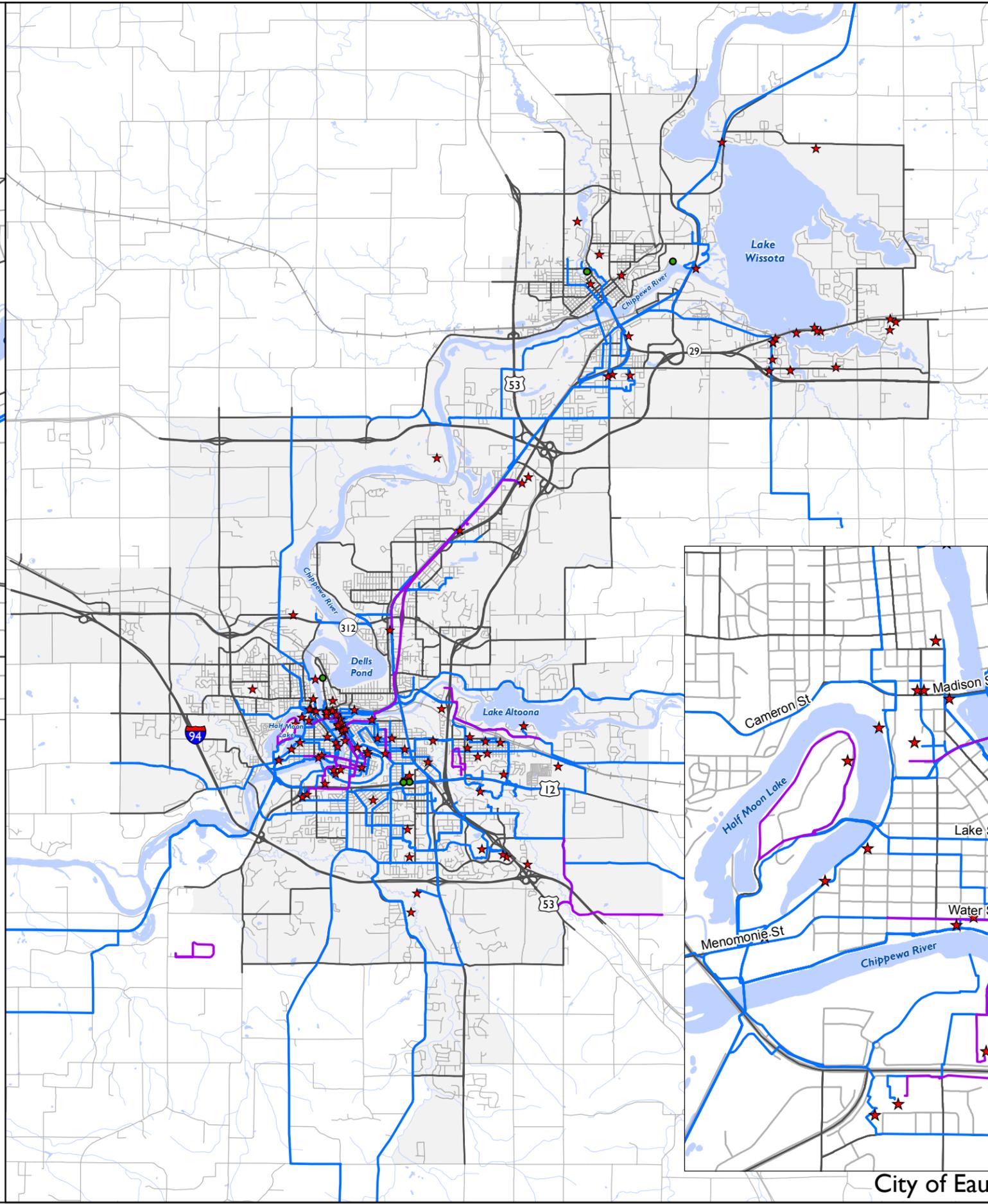
## WikiMap - Current Routes & Destinations

Online, interactive map  
69 participants

- Route I bike
- Route I walk
- ★ Destination
- General Comment

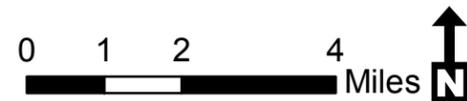


City of Chippewa Falls Inset



City of Eau Claire Inset

Metropolitan Planning Area



December 2016  
Data Sources:  
69 participants



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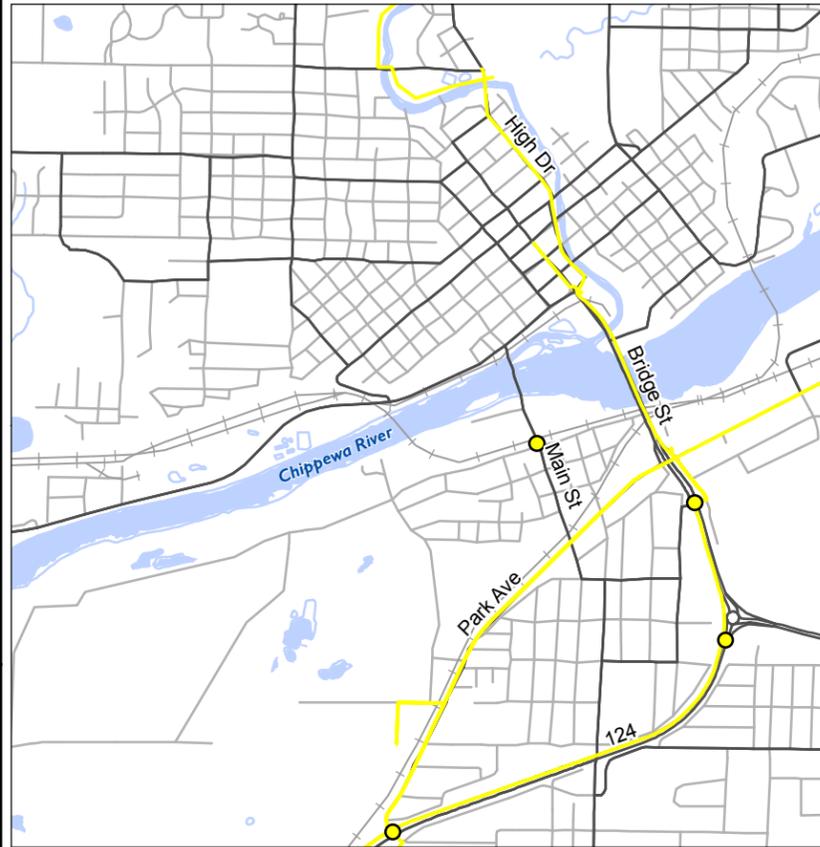
# Chippewa - Eau Claire Metropolitan Bicycle and Pedestrian Plan

# Map 8

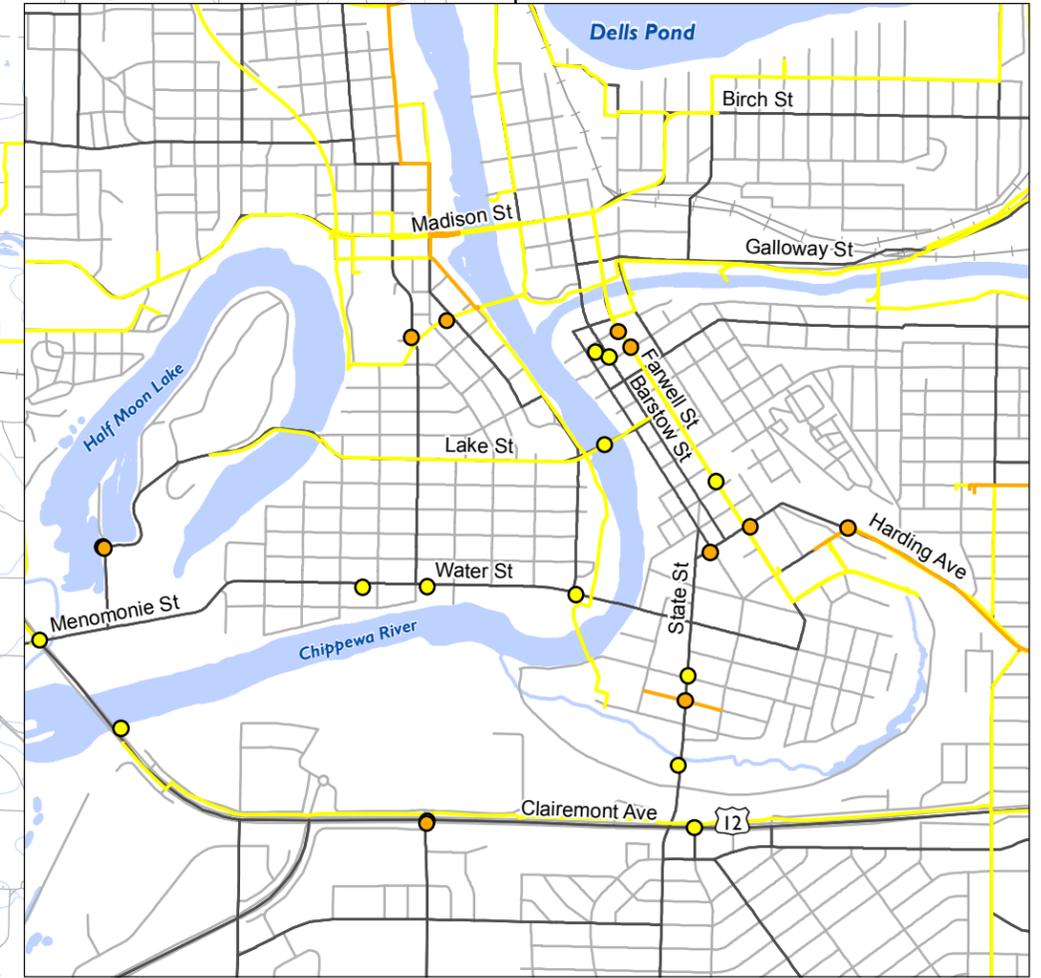
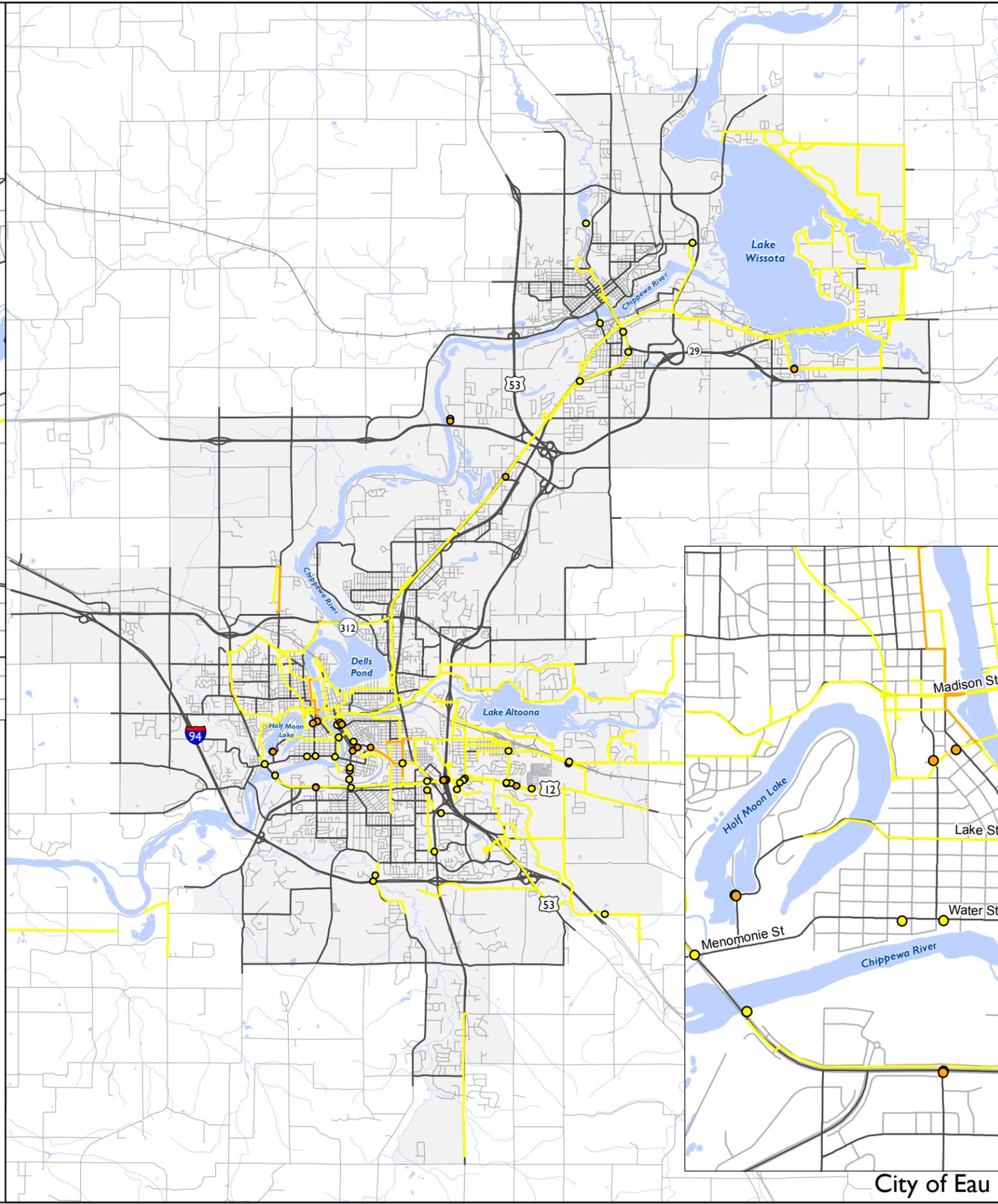
## WikiMap - Barriers & Desired Routes

Online, interactive map  
69 participants

- Route I'd like to bike
- Route I'd like to walk
- Barrier to biking
- Barrier to walking



City of Chippewa Falls Inset



City of Eau Claire Inset

Metropolitan Planning Area



December 2016  
Data Sources:  
69 participants



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## CHAPTER 4 – RECOMMENDATIONS

Recommendations from this plan are categorized into three types: Policies, Projects, and Programs.

**Policy** recommendations are intended to guide future actions through changes to ordinance. Policies may apply to the MPO, to other government units or agencies, or to private sector actors such as building owners, developers, schools, and companies. Policies can apply to the following:

- Maintenance
- Transportation Planning and Engineering
- Land Use Planning and Development Regulations/Incentives
- Law Enforcement

**Projects** are infrastructure improvements that make it safer and more comfortable to walk and bike and extend the network of routes for walking and biking. Projects include off-street paved trails, sidewalks, and on-street bicycle facilities such as bike lanes. Projects should be constructed in the context of consistent design guidelines. Design guidelines can shape the form and function of streets, the public spaces adjacent to them, and the buildings along them in ways that most policies and isolated projects cannot.

**Programs** for bicycle and pedestrian improvement can generally be categorized into *Education and Encouragement* or *Enforcement* type activities. Education programs should prompt people to reconsider their travel behavior. Encouragement programs market the positive aspects of walking and bicycling. Enforcement programs remind motorists, bicyclists, and pedestrians of the rules that promote peaceful multi-modal coexistence. Several recent studies strongly suggest that investing in infrastructure without encouragement and education is unlikely to produce a significant mode shift toward walking and bicycling.

The recommendations in this plan are action items that follow from the Vision, Goals, and Objectives developed early in this planning process. The accomplishment of the recommendations works toward the achievement of specific objectives, their broader goals, and the overarching vision established in this plan.

The following spreadsheet lists the Vision, Goals, and Objectives already stated in the plan. It classifies the objectives as Policy, Project, or Program objectives. Each objective is followed with one or more recommendations that describe action items needed to complete the objective.

**Responsible entity** – Each objective and recommendation is listed with one or more Responsible entities that are most accountable for achieving that objective. Those entities include the following:

- MPO – The MPO may take responsibility in some cases and can provide assistance in most cases.
- Municipalities – This includes the Cities of Altoona, Chippewa Falls and Eau Claire; the Village of Lake Hallie; and the Towns of Anson, Brunswick, Eagle Point, Hallie, Lafayette, Pleasant Valley, Seymour, Tilden, Union, Washington, and Wheaton
- Counties – Chippewa and Eau Claire counties
- Bicycle Pedestrian Advisory Boards – The City of Eau Claire has a BPAC. The MPO, municipalities, and counties should establish advisory boards to assist them with bicycle and pedestrian matters.

- State – Two primary state agencies: Department of Transportation (DOT) and Department of Natural Resources (DNR)
- Law enforcement agencies – Consists of municipal police departments including Altoona, Chippewa Falls, Eau Claire, and Lake Hallie, as well as county sheriff’s offices including Chippewa and Eau Claire counties.
- School districts – Through efforts such as Safe Routes to School, local districts are showing their commitment to helping kids safely walk and bike to school: Altoona School District, Chippewa Falls Area Unified School District, and Eau Claire Area School District
- Advocacy groups –In the Chippewa-Eau Claire Metropolitan Planning Area, a number of bike pedestrian advocacy groups and related organizations are actively speaking up for better walking, biking, and public transit
  - Altoona Outdoors
  - Bike Chippewa Valley
  - Chippewa Off-Road Bike Association (CORBA)
  - Chippewa Valley Transit Alliance
  - Wisconsin Bike Fed
  - Public health groups like Eau Claire Healthy Communities and Chippewa Health Improvement Partnership
- “Friends of the Trails” groups – The three state trails in the Chippewa Valley each have their own volunteer-based Friends of the Trail group that, in partnership with the Wisconsin Department of Natural Resources, assists in the improvement, promotion, maintenance and enjoyment of the trail.
  - Friends of the Chippewa River State Trail
  - Friends of Old Abe State Trail
  - Friends of the Red Cedar State Trail (not in Metropolitan Planning Area)
- Media
- Businesses
- Driver’s Education courses

**Timeline** – Each objective and recommendation is listed with an approximate Timeline in which to aim for achievement. As this plan is aimed for the next 10 years, the following time frames were estimated:

- Short: 1-3 years
- Mid: 4-6 years
- Long: 7-10 years
- Ongoing: now and continuing in the future

	Vision, Goals, and Objectives	Recommendations	Responsible entity	Timeline
Vision	In 2027, in the Chippewa-Eau Claire Metropolitan Planning Area, people of all ages, abilities, incomes, and backgrounds will safely enjoy walking and biking on our area’s well-connected transportation network of off-street trails, on-street bikeways, and sidewalks for everyday transportation needs, recreation, health, quality-of-life, environmental benefit, and economic generation.		<ul style="list-style-type: none"> <li>Entities that will take action on this</li> <li>MPO can provide assistance in most cases</li> </ul>	<ul style="list-style-type: none"> <li>Short: 1-3 years</li> <li>Mid: 4-6 years</li> <li>Long: 7-10 years</li> <li>Ongoing: now and continuing in the future</li> </ul>
Goal	<b>Improve safety and comfort for bicyclists and pedestrians</b> with facilities, education, and enforcement designed to reduce crashes with drivers; improve safe walking, biking, and driving practices; and eliminate preventable pedestrian and bicyclist deaths			
Policy	Adopt Complete Streets policies, which are designed to accommodate the needs of all road users – pedestrians, bicyclists, public transit users, and drivers – and mitigate the barrier effect of large roads with high traffic volumes	<ul style="list-style-type: none"> <li>Develop political will for passage of Complete Streets policy</li> </ul>	<ul style="list-style-type: none"> <li>Advocacy groups</li> <li>MPO</li> <li>Municipalities</li> <li>Counties</li> </ul>	Short
Project	Expand safe pedestrian facilities to fill gaps in the sidewalk network and designate more crosswalks	<ul style="list-style-type: none"> <li>Continue to identify areas of need in the pedestrian network and plan projects for them accordingly</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Ongoing
Project	Local units of government shall meet all Americans with Disabilities Act (ADA) standards, including pedestrian accommodation during all phases of construction, in order to improve safe accessibility for all users	<ul style="list-style-type: none"> <li>Early site plan review and approval should include plans for pedestrian and bicyclist accommodation</li> <li>Include utilities and private development abutting public sidewalks</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Ongoing
Project	Expand safe, low-stress on-street bicycle facilities by building a network of planned routes and constructing protected bike lanes	<ul style="list-style-type: none"> <li>Continue to identify routes, plan appropriate infrastructure improvements, and include them in construction plans</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Ongoing
Program	Educate bicyclists and pedestrians about safe riding and walking practices and laws, both children and adults	<ul style="list-style-type: none"> <li>Promote bicycle and pedestrian safety courses through school programs</li> <li>Work with the League of American Bicyclists and the Wisconsin Bike Fed to certify instructors and offer bike riding classes</li> <li>Promote bicycle and pedestrian safety through existing community events</li> </ul>	<ul style="list-style-type: none"> <li>School districts</li> <li>Advocacy groups</li> </ul>	Ongoing
Program	Educate drivers about the laws and safe driving practices for sharing the road with bicyclists and pedestrians, particularly during driver’s education courses and through media attention	<ul style="list-style-type: none"> <li>Adopt a set of educational messages and promote public awareness through media attention and PSAs, such as the Share &amp; Be Aware campaign</li> <li>Coordinate PSAs with enforcement activities to target aggressive and inattentive driving</li> <li>Include bicycle and pedestrian safety information in Driver’s Education courses</li> </ul>	<ul style="list-style-type: none"> <li>Advocacy groups</li> <li>Media</li> <li>Driver’s Education courses</li> </ul>	Ongoing
Program	Enforce traffic laws to promote safety and increase compliance with driver, bicycle, and pedestrian regulations to reduce speeding, red light/stop sign running, and failure to yield the right of way	<ul style="list-style-type: none"> <li>Start an "Enforcement for Bicycle and Pedestrian Safety" program within each law enforcement agency</li> <li>Implement a Continuum of Training in Pedestrian and Bicycle Safety Training for Law Enforcement program</li> <li>Conduct targeted enforcement operations</li> <li>Work with other bicycle and pedestrian efforts</li> </ul>	<ul style="list-style-type: none"> <li>Law enforcement agencies</li> <li>Municipalities</li> <li>Counties</li> </ul>	Ongoing
Goal	<b>Expand the connectivity of the bicycle and pedestrian transportation network</b> to provide improved access to destinations through better use of existing facilities and construction of new facilities to complete the network			
Policy	Hire staff with knowledge and expertise in walking, bicycling, and ADA and train current staff to deepen knowledge of walking, bicycling, and ADA. Foster collaboration between these professionals.	<ul style="list-style-type: none"> <li>Offer bicycle and pedestrian training for area planners and engineers and take advantage of such training being offered</li> <li>This should include the design of sidewalks, bikeways, and trails for pedestrian and bicyclist travel</li> </ul>	<ul style="list-style-type: none"> <li>MPO</li> <li>Municipalities</li> <li>Counties</li> <li>State DOT &amp; DNR</li> </ul>	Short
Policy, Project	Improve access to destinations that bicyclists and pedestrians travel to or desire to travel to, such as school/university, work, parks, mountain bike/hiking areas, grocery stores, retail shops, restaurants, special events, and downtown	<ul style="list-style-type: none"> <li>Plan safe walking and biking routes to important destinations</li> <li>Adopt ordinances to ensure pedestrians and bicyclists can safely and conveniently access building entrances from sidewalks and streets</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Short
Project	Create bikeways, trails, and sidewalks in strategic locations and connect gaps in the active transportation network. When possible, include these as part of regular street construction and reconstruction projects. These facilities should incorporate current best practices in pedestrian and bicycle facility design.	<ul style="list-style-type: none"> <li>Review all street construction projects to determine if the route is part of the bicycle and pedestrian network and if bicycle and pedestrian facilities could be improved or added</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Mid
Project	Enhance the off-street trail system to provide low-stress biking and walking facilities throughout the metropolitan area and improve access to the trails	<ul style="list-style-type: none"> <li>Develop more sidewalks, bikeways, and trails to connect to the existing trail system, thereby extending its reach and accessibility</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> <li>State DOT &amp; DNR</li> </ul>	Mid
Project	o Close the final gap in the Chippewa Valley Trail System between Lake Hallie and Chippewa Falls	<ul style="list-style-type: none"> <li>Design and build trail connection</li> </ul>	<ul style="list-style-type: none"> <li>Chippewa Falls</li> <li>Lake Hallie</li> </ul>	Short
Project	o Ensure that the trails are well-maintained with a surface that meets user demand	<ul style="list-style-type: none"> <li>Monitor trail condition with standards for state of good repair</li> <li>Ensure that trail segments are maintained by respective agency or unit of government</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> <li>State DNR</li> <li>Friends groups</li> </ul>	Ongoing
Project	o Provide the appropriate amount of facilities along trails (benches, rest areas, bathrooms, trailheads, parking, etc.)	<ul style="list-style-type: none"> <li>Work with Friends of the Trails groups to install bicycle work stations along the trail</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> <li>State DNR</li> <li>Friends groups</li> </ul>	Mid

	Vision, Goals, and Objectives	Recommendations	Responsible entity	Timeline
Project	Overcome barriers to bicycle and pedestrian travel – both natural and human-made, including roads with high-volume/high-speed traffic	<ul style="list-style-type: none"> <li>Continue to identify bicycle and pedestrian barriers</li> <li>Develop enhanced crossings, bridges, or underpasses in strategic locations</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Mid
Policy, Project	Encourage intergovernmental cooperation and political buy-in within communities and across the metropolitan area to strengthen collaborative efforts to develop bicycle and pedestrian facilities	<ul style="list-style-type: none"> <li>Continue collaboration initiated in this planning process through the MPO and with the upcoming county-level planning process</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> <li>State DOT &amp; DNR</li> </ul>	Ongoing
Policy, Project	Provide linkages between the bicycle/pedestrian network, public transit, and automobile facilities to foster multimodal travel	<ul style="list-style-type: none"> <li>Include bike parking at such locations</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> </ul>	Short
Policy, Project	Provide consistency in signage for street signs, wayfinding signs, trail signs, and trail map signs	<ul style="list-style-type: none"> <li>Develop a signage system, routes to sign, and locations for signs</li> </ul>	<ul style="list-style-type: none"> <li>MPO</li> <li>Municipalities</li> <li>Counties</li> <li>State DOT &amp; DNR</li> </ul>	Short
Program	Promote the Chippewa Valley Bike Map to help people select comfortable routes to ride, keep it updated, create new maps, and provide online and mobile-technology maps and wayfinding apps	<ul style="list-style-type: none"> <li>Support efforts of the "Bike Chippewa Valley" group as they educate people about biking here and advocate for better biking</li> </ul>	<ul style="list-style-type: none"> <li>MPO</li> <li>Advocacy groups</li> </ul>	Ongoing
Goal	<b>Increase the number of people walking and biking</b> for transportation, recreation, health, overall community quality-of-life, environmental benefit, and economic generation; use direct encouragement, accommodation, planning, and policy change			
Program	Encourage more bicycling and walking with programs through schools, employers, parks, recreation providers, local governments, small businesses, Senior Americans Day, and more	<ul style="list-style-type: none"> <li>Initiate Walking School Buses at elementary schools</li> <li>Expand bike to work week efforts and activities</li> <li>Promote weekly family bicycle rides with trained leaders</li> <li>Hold Open Streets events</li> </ul>	<ul style="list-style-type: none"> <li>Advocacy groups</li> <li>School districts</li> <li>Municipalities</li> <li>Counties</li> </ul>	Ongoing
Program	Promote programs to donate and repair bikes for people with low incomes	<ul style="list-style-type: none"> <li>Collaborate with bike shops and citizens for materials and labor</li> <li>Identify recipients with schools and social service agencies</li> </ul>	<ul style="list-style-type: none"> <li>Advocacy groups</li> <li>School districts</li> </ul>	Short
Policy, Project	Install more bicycle parking racks that are effective, secure, and well-sited	<ul style="list-style-type: none"> <li>Adopt ordinances to ensure the installation of bike racks</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Businesses</li> </ul>	Short
Program	Attract tourists to the area to enjoy walking and biking during their visit	<ul style="list-style-type: none"> <li>Work with tourism groups to make walking and biking easily-accessible for visitors</li> <li>Promote events or activities that encourage walking and biking, such as a scavenger hunt with incentives</li> </ul>	<ul style="list-style-type: none"> <li>Advocacy groups</li> <li>Businesses</li> </ul>	Ongoing
Program	Accommodate long-distance bicyclists who may be using the Wisconsin State Bikeways System or U.S. National Bicycle Route System	<ul style="list-style-type: none"> <li>Install wayfinding signage on these routes</li> <li>Develop recommendations for eating, lodging, and activity for people traveling through on these routes</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Advocacy groups</li> <li>Businesses</li> </ul>	Short
Program	Encourage the development of bike share programs	<ul style="list-style-type: none"> <li>Foster connections between municipalities and businesses to sponsor a bike share system with a bike share provider</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Businesses</li> </ul>	Short
Policy	Create or update local bicycle and pedestrian plans	<ul style="list-style-type: none"> <li>Follow up this metropolitan planning effort with other local government planning efforts</li> </ul>	<ul style="list-style-type: none"> <li>MPO</li> <li>Municipalities</li> <li>Counties</li> </ul>	Short
Program, Project	Implement Safe Routes to School planning recommendations to increase the number of students safely walking and biking to school	<ul style="list-style-type: none"> <li>Conduct upcoming new Safe Routes to School plans: Eau Claire, Altoona</li> </ul>	<ul style="list-style-type: none"> <li>School districts</li> <li>Municipalities</li> </ul>	Short
Policy	Establish or strengthen Citizen Advisory Boards such as Eau Claire's Bicycle Pedestrian Advisory Committee	<ul style="list-style-type: none"> <li>Foster political will and make the case for such advisory boards</li> </ul>	<ul style="list-style-type: none"> <li>MPO</li> <li>Municipalities</li> <li>Counties</li> <li>Advocacy groups</li> </ul>	Short
Program	Invite neighborhood associations to participate in bicycle and pedestrian matters	<ul style="list-style-type: none"> <li>Foster collaboration by neighborhoods in bicycle and pedestrian opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Advocacy groups</li> </ul>	Short
Program	Apply for or upgrade Bicycle Friendly and Walk Friendly Community status	<ul style="list-style-type: none"> <li>Implement improvements identified through this application process</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> </ul>	Short
Policy	Identify and develop consistent funding opportunities and grants that increase funds: for walking and biking; for areas that need expansion and maintenance of trails, bikeways, and sidewalks; and for law enforcement strategies	<ul style="list-style-type: none"> <li>Clearly identify funding requirements for current system and future needs</li> <li>Identify and apply for external funding sources applicable to certain projects</li> <li>Use internal funds or develop internal funding source for unmet needs</li> </ul>	<ul style="list-style-type: none"> <li>MPO</li> <li>Municipalities</li> <li>Counties</li> </ul>	Ongoing
Program	Monitor usage of bicycle and pedestrian facilities with tools like trail counters	<ul style="list-style-type: none"> <li>Acquire and strategically utilize trail counters to compare useage on a year-by-year basis</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Ongoing
Policy	Adopt local land use policies and zoning ordinances that foster walkability and bikeability. These could include: <ul style="list-style-type: none"> <li>Site plans that provide walk/bike access</li> <li>Local bike parking requirements and design/placement standards</li> <li>Reduced car parking minimum requirements where appropriate</li> <li>Subdivisions that accommodate bicycle and pedestrian travel</li> <li>Incorporating trails in designs</li> <li>Compact land use</li> </ul>	<ul style="list-style-type: none"> <li>Research and follow best land use practices for improving conditions for walking and biking</li> </ul>	<ul style="list-style-type: none"> <li>Municipalities</li> <li>Counties</li> </ul>	Short

## CHAPTER 5 – IMPLEMENTATION

### 5.1 Implementation Principles

The recommendations outlined in the previous chapter are categorized as Policy, Project, or Program recommendations. They are listed with one or more ‘Responsible entity’ and an estimated ‘Timeline.’ Given that different entities are likely to have different priorities and different budgets, setting out a work plan might not be a useful exercise.

Instead, here are some **Implementation Principles** to help guide work on these recommendations:

- Making policy changes can lead to better and more consistent outcomes, so pursuing them early on can be beneficial. For example, once a bicycle-pedestrian site access policy is passed, all future development would be subject to it. Sites would be developed with walking and biking in mind, and the more expensive, disruptive retrofitting of sites would be unnecessary. Similarly, requirements for bicycle and pedestrian accommodations in residential developments would make new neighborhoods walkable, bikeable, and interconnected from the beginning.
- Infrastructure projects often require additional funding and time to prepare. Planning several years in advance for the incorporation of bicycle and pedestrian projects and including bicycle and pedestrian accommodations in the early engineering phases of upcoming road projects is easier and less expensive than doing such work on its own or adding it as an afterthought of design.
- Education and enforcement programs help promote safe transportation by all street users and make our communities more comfortable for people to walk and bike. Encouragement programs make walking and biking fun and inspire more people to try these activities. These types of programs increase the number of people walking and biking, thereby increasing the value of investments for walking and biking. By focusing on the *worth* of programs and projects and their results, rather than the *cost*, elected officials can become more open to supporting them.
- Partnerships should be utilized whenever possible. Educating drivers about safe practices might seem daunting to municipal staff, but the Wisconsin Bike Fed already has a *Share & Be Aware* campaign to do just that. Another example is the public health community that seeks to help residents get more exercise, including walking and biking. It may be able to offer staff, financial support, or incentives. Advocacy groups and Friends groups listed in the Recommendations chapter seek to partner with units of government to promote walking and biking, as well.
- Collaboration and coordination between units of government will strengthen actions for walking and biking. When plans for walking and biking routes are developed, consideration should be given to developing connections between neighboring jurisdictions so that bike lanes and trails continue past municipal boundaries. The upcoming county-wide bicycle and pedestrian planning process will look at intergovernmental coordination.
- Strengthen local governments’ efforts from citizen volunteers to professional staff to elected officials. Citizen advisory boards, such as the City of Eau Claire’s Bicycle Pedestrian Advisory Committee, can provide expertise, enthusiasm, and effort to augment what a local government is doing. The relevant professional government staff should have experience working on bicycle and pedestrian issues or be given training in the field. Many cities and regions have a bicycle and

pedestrian coordinator. Elected officials should respond to citizen demand for safer and more comfortable walking and biking facilities with beneficial policies and budgetary investments.

## 5.2 Funding Sources

Determining how to fund various bikeway and pedestrian improvements is a key strategic issue that communities face when implementing bicycle and pedestrian plans. While there are many funding options, each source may have limitations making it more or less appropriate for certain types of projects. Some funding sources are targeted to infrastructure while others target education and encouragement efforts. Some sources are not directly bicycle or pedestrian related but can be applied to bikeway and pedestrian projects that may have a nexus with another public priority such as historic preservation or public health. Some sources may support grants of millions of dollars; others may be targeted to smaller amounts and require citizen volunteers or community involvement as a part of the required local match.

### 5.2.1 Federal Funding Administered by State Agencies

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act into law. The primary federal transportation funding program for bicycling projects, known as the Transportation Alternatives Program (TAP) under the previous transportation act, MAP-21, was replaced with a set-aside of Surface Transportation Block Grant (STBG) program funding for Transportation Alternatives (TA). These set-aside funds include all projects and activities that were previously eligible under TAP. They encompass a variety of smaller-scale transportation projects, such as pedestrian and bicycle facilities, recreational trails, Safe Routes to School projects, and community improvement initiatives including historic preservation, vegetation management, environmental mitigation related to stormwater and habitat connectivity. Annual funding levels under the new 'Transportation Alternatives Set-Aside', or 'TA Set-Aside', are estimated to increase modestly over the life of the Act, from Fiscal Year (FY) 2016 to FY 2020; however, they are subject to the annual obligation limitations imposed on the Federal-aid Highway Program. Funds are apportioned to states based on each state's proportional share of FY 2009 Transportation Enhancement funding. For most projects under the TA Set-Aside, the federal share is 80 percent with a 20 percent state or local match. There are some exceptions, including safety improvements or projects on tribal or national park lands, in which cases 100 percent federal funding can be available. Figure 48, which appears later in this section, provides a summary of the types of bikeway projects that would be eligible for a wider range of federal transportation funding programs.

Other programs under the new FAST Act have remained largely unchanged from the previous Act, though some program names have changed. The long-standing Surface Transportation Program (STP) has been converted into the Surface Transportation Block Grant Program (STBG). This program has the most flexible eligibilities among all Federal-aid highway programs and aims to address state and local transportation needs. The TA Set-Aside and other federal funding sources that are pertinent to the MPA or its individual communities are summarized below.

#### Surface Transportation Block Grant (STBG)

The Surface Transportation Block Grant (formerly STP) – **Small Urban Areas** (pop. 5,000-200,000); **Rural Areas** (pop. <5,000); and **State Flex** programs provide flexible funding that may be used by states and localities for bicycle transportation facility and pedestrian walkway projects on any Federal-aid highway. Furthermore, this program may fund bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. A STBG project may not be undertaken on a road

functionally classified as a local road or a rural minor collector. Funds from this program may also be used for non-construction projects such as maps, brochures, and public service announcements related to safe bicycle use and walking. Although seldom used for bicycle and pedestrian projects, this program is still an excellent source of funding for hard-to-finance bicycle and pedestrian infrastructure. Up to 80 percent of project costs can be covered by STBG funds. The Wisconsin Department of Transportation administers these funds, and it is responsible for selecting projects through a competitive process. Eligible recipients of the Small Urban Areas and Rural Areas sub-programs are tied to population. The STBG-State Flex subprogram is used for state-specific projects, or on local projects throughout the state, regardless of population.

### **STBG-Transportation Alternatives Set-Aside (STBG-TA)**

The STBG-TA program will provide the MPA's best opportunity for federal funding of bicycle and pedestrian projects. This program is highly competitive with applications commonly totaling four times the funds available. Projects that exceed \$300,000 are the best fit for this program because a significant amount of administrative work is required to apply and complete the project. STBG-TA eligible activities include planning, design, and construction of pedestrian and bicycle facilities, recreational trails, Safe Routes to School projects, and community improvement initiatives including historic preservation, vegetation management, environmental mitigation related to stormwater and habitat connectivity. WisDOT administers this program, including project selection through a competitive process, with the exception of the Recreational Trails Program (RTP) portion. This sub-program is administered by the DNR and is discussed below.

The STBG-TA program replaces the **Transportation Alternatives Program (TAP)**, which itself combined the **Transportation Enhancements (TE)**, **Safe Routes to School (SRTS)**, and **Recreational Trails Program (RTP)**. Projects that were previously eligible under any of these programs, and carried forward as TAP, are now eligible under STBG-TA. However, STBG-TA is more broadly competitive because these multiple funding programs have been combined into one with a smaller overall funding allocation. Furthermore, up to half of the funding can be diverted to projects outside of this program. For the 2016-2020 grant cycle, the Wisconsin Department of Transportation received \$62.6 million in funding requests. However, in Wisconsin, to date only \$15 million of STBG-TA funding has been budgeted (\$7.5 million per year for 2016 and 2017).

### **Recreational Trails Program (RTP)**

Funds from the RTP may be used for various kinds of trail projects. Eligible activities (in order of priority) are: maintenance or restoration of existing trails, development or rehabilitation of trailside/trailhead facilities and trail linkages, construction of new trails, and property acquisition for trails. This program is the only federal transportation funding source that can be used for maintenance activities. These funds are administered by the Wisconsin Department of Natural Resources (DNR) and have a cap of \$45,000 per grant per fiscal year.

### **Highway Safety Improvement Program (HSIP)**

The FAST Act continues HSIP to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-state-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. Seven percent of each state's annual STBG program funds is set aside for the Highway

Safety Improvement Program and Railway-Highway Crossing Program, which are intended to address, in part, bicycle and pedestrian safety at hazardous locations.

### **Highway Safety Grant Program (Section 402)**

The Highway Safety Grant Program (commonly referred to as Section 402 funds) is administered by Wisconsin DOT. Federal 402 funds are used for pedestrian and bicycle public information and education programs. Funds are distributed to states annually from the National Highway Traffic Safety Administration (NHTSA) according to a formula based on population and road mileage. Government agencies or government-sponsored entities are eligible to apply for 402 funds.

### **Transportation Investment Generating Economic Recovery (TIGER) Program**

Major bicycle and pedestrian projects could potentially be funded under the highly competitive TIGER Discretionary Grants Program. The program originated as a part of the American Recovery and Reinvestment Act (ARRA) of 2009 and, with minor modifications, has continued to award grants on a competitive basis for projects that will have a significant impact on the Nation, a metropolitan area, or a region. Funded projects have been multimodal and multijurisdictional projects, which are typically difficult to fund through traditional programs. Awarded projects are those that leverage resources, encourage partnership, catalyze investment and growth, fill a critical void in the transportation system, or provide a substantial mobility benefit to the area. Awards could range from a minimum of \$5 million in urbanized areas (>50,000 population in the 2010 Census), or \$1 million in rural areas, to a statutory maximum of \$100 million. Local share must cover at least 20 percent of funded projects.

In the FY 2015 cycle of TIGER Discretionary Grants Program funding, just 39 projects were selected for funding from 627 eligible applications across the nation. Awarded projects focused on helping communities create better connections to centers of employment, education, and services, especially in economically distressed areas. One recent project was awarded a \$10 million grant to develop Complete Streets and a linear park trail to catalyze redevelopment in the heart of the community. Another project included the construction of sidewalks as a small component of a much larger effort to provide accessible transportation throughout a community. At the moment, it is uncertain whether applications for FY 2017 will be accepted because the TIGER program's future is in doubt.

### **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. The grant programs most relevant for the MPA include: Enhanced Mobility of Seniors and Individuals with Disabilities (S. 5310), which fund bicycle improvements that provide access to an eligible public transit facility at 80 percent federal share; and Formula Grants for Rural Areas (S. 5311), which includes within its eligible projects planning and capital improvements for bicycle routes as well as transit, bike racks, shelters, and equipment for public transportation vehicles. Helping bicyclists access public transportation can help assist communities in promoting the use of transit and providing better accessibility to the public. Bike routes close to transit stations increase the number of bicyclists utilizing 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, and it reduces construction costs and space requirements compared to automobile parking. These funds are managed by WisDOT.

## 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 measures annual performance 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. Still another program is the Federal Lands Planning Program. It is funded through a maximum set-aside of five percent from FLTP and FLAP. It carries out the long-range system-wide transportation planning and coordination, asset management, and data collection activities for federal lands, including tribal transportation facilities and other federally owned roads open to public travel.

### Summary of Federal Funding Sources

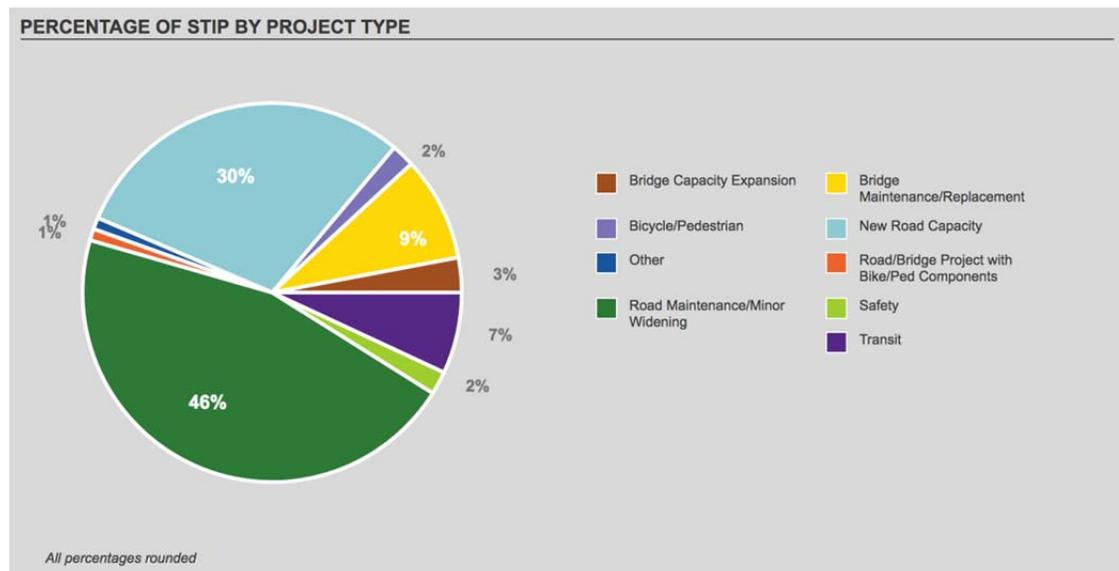
Figure 48 provides a list of federal funding sources that may be available for bicycle and pedestrian projects. Additionally, Advocacy Advance provides an online Bicycle and Pedestrian Federal Funding Resources List with frequently updated links to each program:

<http://www.advocacyadvance.org/resources#federal>

### 5.2.2 State Funding Sources

Wisconsin's 2011-2014 Statewide Transportation Improvement Program (STIP) proposed spending \$5.47 billion. Of that amount, two percent was for bicycle and pedestrian projects. Figure 47 shows the proportion of that spending for each of the project types.

**Figure 47: 2011-2014 Wisconsin Statewide Transportation Improvement Program Chart**



Source: Tri-State Transportation Campaign

Currently there are no state programs dedicated to funding bicycle and pedestrian projects. Formerly, the WisDOT Bicycle and Pedestrian Facilities Program provided state funds, along with federal funds, to provide funding of local projects.

The one exception to this is the Department of Natural Resources' Stewardship Program. The set of eligible activities includes paths, but only for acquisition of property for paths. When stewardship funds have been used for paths, they have been dedicated primarily for the purchase of long segments of rail properties for trail use.

### *5.2.3 Local Funding Sources*

Local funds are generally used either on their own or as a match for federal funding of a particular project. Generally, the majority of the recommendations that are implemented as stand-alone projects will need to be funded through the implementing municipality's general fund. A good example of such a project is on-street pavement markings. Projects that have a longer life than street markings (e.g. paths) could be financed through general obligation debt in the same manner that many street or other infrastructure projects are financed.

### *5.2.4 Non-Governmental Funding Sources*

Private funding for bikeways and trails is typically used to maintain or enhance existing infrastructure. While less common, it is possible to leverage private funding to construct new infrastructure. One example is that private sources could provide the 20 percent local funding match required by many grant programs. These funding sources generally fall within one of two categories.

#### **Philanthropic Foundations**

Private foundations and non-profit charitable foundations are potential sources of funding for bikeway and trail projects. In addition to seeking grants from a foundation, businesses and organizations could be encouraged to "adopt" or sponsor segments of a trail or on-road bikeway to help fund ongoing maintenance.

#### **Direct Contributions**

The MPA, individual municipalities, and advocates could work together to develop a robust giving program that allows individuals to make direct contributions to fund bikeway and trail projects. Such a program could include elective contribution options on utility bills or property tax bills, a contribution option on the local government's websites, and partnerships with one or more non-profit foundations to develop fundraising campaign materials and a dedicated fundraising website.

**Figure 48: Potential Federal Funding Sources for Bicycle and Pedestrian Projects**

Activity	FTA/ATI	HSIP	NHPP/NHS	STBG	STBG-TA	RTP	PLAN	402	FLH
Access enhancements to public transportation	●			●	●				●
Bicycle and/or pedestrian plans	●			●			●		●
Bicycle lanes on road	●	●	●	●	●				●
Bicycle parking	●			●	●				●
Bike racks on transit	●			●	●				●
Bicycle share (capital/equipment; not operations)	●		●	●	●				●
Bicycle storage or service centers	●			●	●				
Bridges / overcrossings	●	●	●	●	●	●			●
Bus shelters	●			●	●				●
Coordinator positions (State or local)				●	●				
Crosswalks (new or retrofit)	●	●	●	●	●	●			●
Curb cuts and ramps	●	●	●	●	●	●			●
Helmet promotion				●	●			●	
Historic preservation (bike, ped, transit facilities)	●			●	●				●
Land/streetscaping (bike/ped route; transit access)	●			●	●				●
Maps (for bicyclists and/or pedestrians)	●			●	●			●	
Paved shoulders		●	●	●	●				●
Police patrols				●	●			●	
Recreational trails				●	●	●			●
Safety brochures, books				●	●			●	
Safety education positions				●	●			●	
Shared use paths / transportation trails	●	●	●	●	●	●			●
Sidewalks (new or retrofit)	●	●	●	●	●	●			●
Signs / signals / signal improvements	●	●	●	●	●				●
Signed bicycle or pedestrian routes	●		●	●	●				●
Spot improvement programs	●	●		●	●	●			
Traffic calming	●	●	●	●	●				
Trail bridges		●	●	●	●	●			●
Trail/highway intersections		●	●	●	●	●			●
Training				●	●	●		●	
Tunnels / undercrossings	●	●	●	●	●	●			●

FTA/ATI: Federal Transit Administration Capital Funds and Associated Transit Improvement

HSIP: Highway Safety Improvement Program

NHPP/NHS: National Highway Performance Program (National Highway System)

STBG: Surface Transportation Block Grant Program

STBG-TA: STBG-Transportation Alternatives Set-Aside

RTP: Recreational Trails Program

PLAN: Statewide or Metropolitan Planning

402: State and Community Traffic Safety Program

FLH: Federal Lands Highway Program (Federal Lands Access Program, Federal Lands Transportation Program)

## 5.3 Costs for Pedestrian and Bicyclist Infrastructure Improvements

The University of North Carolina Highway Safety Research Center has produced a cost estimating resource for researchers, engineers, planners, and the general public. It was prepared in October 2013 for the Federal Highway Administration and supported by the Robert Wood Johnson Foundation through its Active Living Research program. The resource is accessible here:

<http://www.pedbikeinfo.org/data/library/details.cfm?id=4876>

Costs for pedestrian and bicycle safety infrastructure often vary greatly from city to city and state to state. This document is intended to provide meaningful estimates of infrastructure costs by collecting up-to-date cost information for pedestrian and bicycle treatments from states and cities across the country. Using this information, researchers, engineers, planners, and the general public can better understand the cost of pedestrian and bicycle treatments in their communities and make informed decisions about which infrastructure enhancements are best suited for implementation. By collecting nationwide cost information, this database should contain useful information for our area.

A better understanding of pedestrian and bicycle infrastructure costs will hopefully ensure that funding is allocated to pedestrian and bicycle improvements more efficiently. The goal is to encourage more communities to enhance facilities for non-motorized users and increase the safety of those choosing to walk and bike. Building a new roadway for automobiles can cost tens of millions of dollars to construct, while many pedestrian and bicycle infrastructure projects and facilities are extremely low-cost in comparison. This infrastructure can also serve to improve safety for all road users, while also promoting healthier lifestyles through bicycling and walking. The tables in the above-mentioned resource provide general estimates and cost ranges for 77 pedestrian and bicycle facilities using more than 1,700 cost observations. They are presented with a median and average price, the minimum and maximum cost, and the number of sources. Figure 49 displays 45 of those estimates. By making more informed decisions about the costs of pedestrian and bicycle infrastructure treatments, decision makers will be able to dedicate funds to those treatments that are most affordable and cost-effective.

It must be noted that costs can vary widely from state to state and also from site to site. Therefore, the cost information contained in this report should be used only for estimating purposes and not necessarily for determining actual bid prices for a specific infrastructure project.

**Figure 49: Estimated Costs for Pedestrian and Bicyclist Infrastructure Improvements Table**

Infrastructure	Description	Median	Average	Minimum	Maximum	Cost Unit	Number of Sources (Observations)
Bicycle Parking	Bicycle Rack	\$540	\$660	\$64	\$3,610	Each	19 (21)
Bikeway	Bicycle Lane	\$89,470	\$133,170	\$5,360	\$536,680	Mile	6 (6)
Bikeway	Signed Bicycle Route	\$27,240	\$25,070	\$5,360	\$64,330	Mile	3 (6)
Curb Extension	Curb Extension/ Bump-Out	\$10,150	\$13,000	\$1,070	\$41,170	Each	19 (28)
Island	Median Island	\$10,460	\$13,520	\$2,140	\$41,170	Each	17 (19)
Raised Crossing	Raised Crosswalk	\$7,110	\$8,170	\$1,290	\$30,880	Each	14 (14)
Speed Mitigation	Speed Bump	\$1,670	\$1,550	\$540	\$2,300	Each	4 (4)
Speed Mitigation	Speed Hump	\$2,130	\$2,640	\$690	\$6,860	Each	14 (14)
Speed Mitigation	Speed Table	\$2,090	\$2,400	\$2,000	\$4,180	Each	5 (5)

Table continued on next page.

Infrastructure	Description	Median	Average	Minimum	Maximum	Cost Unit	Number of Sources (Observations)
Crosswalk	Striped Crosswalk	\$340	\$770	\$110	\$2,090	Each	8 (8)
Crosswalk	High Visibility Crosswalk	\$3,070	\$2,540	\$600	\$5,710	Each	4(4)
Sidewalk	Concrete Sidewalk	\$27	\$32	\$2.09	\$410	Linear Foot	46 (164)
Sidewalk	Concrete Sidewalk + Curb	\$170	\$150	\$23	\$230	Linear Foot	4 (7)
Curb/Gutter	Curb and Gutter	\$20	\$21	\$1	\$120	Linear Foot	16 (108)
Sidewalk	Asphalt Paved Shoulder	\$5.81	\$5.56	\$2.96	\$7.65	Square Foot	1 (4)
Path	Multi-Use Trail - Paved	\$261,000	\$481,140	\$64,710	\$4,288,520	Mile	11 (42)
Fence/Gate	Fence	\$120	\$130	\$17	\$370	Linear Foot	7 (7)
Railing	Pedestrian Rail	\$95	\$100	\$7.20	\$690	Linear Foot	29 (83)
Bollard	Bollard	\$650	\$730	\$62	\$4,130	Each	28 (42)
Lighting	Streetlight	\$3,600	\$4,880	\$310	\$13,900	Each	12 (17)
Street Furniture	Bench	\$1,660	\$1,550	\$220	\$5,750	Each	15 (17)
Street Furniture	Street Trees	\$460	\$430	\$54	\$940	Each	7(7)
Street Furniture	Bus Shelter	\$11,490	\$11,560	\$5,230	\$41,850	Each	4 (4)
Street Furniture	Trash/ Recycling Receptacle	\$1,330	\$1,420	\$310	\$3,220	Each	12 (13)
Flashing Beacon	Flashing Beacon	\$5,170	\$10,010	\$360	\$59,100	Each	16 (25)
Flashing Beacon	Rectangular Rapid Flashing Beacon (RRFB)	\$14,160	\$22,250	\$4,520	\$52,310	Each	3 (4)
Flashing Beacon	Pedestrian Hybrid Beacon (HAWK signal)	\$51,460	\$57,680	\$21,440	\$128,660	Each	9 (9)
Pedestrian/Bike Detection	Push Button	\$230	\$350	\$61	\$2,510	Each	22 (34)
Pedestrian/Bike Detection	In-street loop bicycle detector		\$1,920	\$1,070	\$2,680	Each	
Signal	Pedestrian Signal	\$980	\$1,480	\$130	\$10,000	Each	22 (33)
Signal	Countdown Timer Module	\$600	\$740	\$190	\$1,930	Each	14 (18)
Signal	Audible Pedestrian Signal	\$810	\$800	\$550	\$990	Each	4 (4)
Speed Trailer	Speed Trailer	\$9,480	\$9,510	\$7,000	\$12,410	Each	6 (6)
Sign	Stop/Yield Signs	\$220	\$300	\$210	\$560	Each	4 (4)
Sign	Bike route signage		\$160			Each	
Sign	In-pavement yield paddles		\$240			Each	
Sign	Trail wayfinding/ information sign			\$530	\$2,150	Each	
Pavement Marking	Advance Stop/Yield Line	\$380	\$320	\$77	\$570	Each	3 (5)
Pavement Marking	Island Marking	\$1.49	\$1.94	\$0.41	\$11	Square Foot	1 (4)
Pavement Marking	Painted Curb/Sidewalk	\$2.57	\$3.06	\$1.05	\$10	Linear Foot	2 (5)
Pavement Marking Symbol	Pedestrian Crossing	\$310	\$360	\$240	\$1,240	Each	4 (6)
Pavement Marking Symbol	Shared Lane/Bicycle Marking	\$160	\$180	\$22	\$600	Each	15 (39)
Pavement Marking Symbol	School Crossing	\$520	\$470	\$100	\$1,150	Each	4 (18)

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## CHAPTER 6 – EVALUATION AND MONITORING

After the plan is passed and implementation begins, it will be beneficial to periodically assess progress towards goals and what effects that progress has had. At a foundational level, participants should monitor their work toward accomplishing the goals, objectives, and their recommendations. The estimated timeline for their completion can give a sense for when these items should be achieved. Performance measures and performance standards can be used to track progress, as shown in Figure 50 and described in the following sections.

### 6.1 Performance Measures

In addition to monitoring completion of goals and objectives, participants should evaluate relevant performance measures to see how conditions are improving. Performance measures are a way to evaluate progress with quantitative indicators of success. Depending on the goal or objective, the measure may be general (e.g. mode share) or specific (e.g. percentage of youth receiving bicycle safety education). The following are examples of performance measures. They each relate to one or more of the objectives identified in this plan.

#### INFRASTRUCTURE

- Total miles of bikeways
  - Number of miles of on-street bikeways, e.g. bike lanes
  - Number of miles of off-street trails/multi-use paths
- Miles of bikeways catering to each type of bicyclist (i.e. Less Confident, Moderately Confident, Most Confident)
- Pedestrian infrastructure
  - Percentage of roadways with sidewalks
  - Number of miles of sidewalk infill per year
- Percentage of households within one quarter mile of a bicycle facility
- Percentage of buses equipped with bicycle racks
- Percentage of transit stops with bicycle parking
- Percentage of new developments that include bicycle parking or other end-of-trip facilities
- Number of bicycle parking spaces
- Percentage of intersections up to current ADA standards
- Number of transit stops with pedestrian amenities
- Percentage of new developments meeting pedestrian standards
- Number of bridges with dedicated bicycle and pedestrian facilities

#### PROGRAMS

- Percentage of schools served by Safe Routes to Schools program

Figure 50: Vision to Evaluation



- Number of safety trainings offered per year
- Number of enforcement efforts per year
- Attendance at Bike Week events

#### USE AND SAFETY

- Mode share for all trips
  - Mode share for work trips
- Number of walking and bicycling trips per day along key corridors
- Total bicycle and pedestrian crashes
  - Bicycle and pedestrian crash rates
  - Bicycle and pedestrian crashes that injure or kill
- Percentage of bicyclists that are women, youth, or seniors
- Average trip distance across all modes

#### FUNDING

- Total spending on active transportation
- Percentage of transportation funding spent on bicycle or pedestrian infrastructure
- Grant application success rate
- Proportion of priority projects and programs with secure funding

#### PUBLIC OPINION

- Percentage of residents satisfied with the safety and comfort of existing bicycle and/or pedestrian facilities
- Percentage of residents interested in walking and bicycling more frequently

## 6.2 Performance Standards

Performance measures are the unit of analysis, while performance standards or benchmarks are the targets. For example, if the performance measure is pedestrian mode share, the performance standard or benchmark associated with that performance measure might be a three percent increase in the share of walking trips by 2027. Different participants may set performance standards differently, based on their starting point and how quickly they want to make progress.

## **APPENDIX A – ADVISORY TEAM**

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To help develop this plan, an Advisory Team of leaders from the metropolitan area was convened based on their experience in bicycle and pedestrian matters, their guidance to make the plan meaningful, and their influence to help implement it. The three primary types of organizations represented were Wisconsin state agencies, local units of government, and bicycle-pedestrian advocacy groups. The 15 members of the Advisory Team, along with their organization and position, are in Figure 51.

**Figure 51: Advisory Team Members**

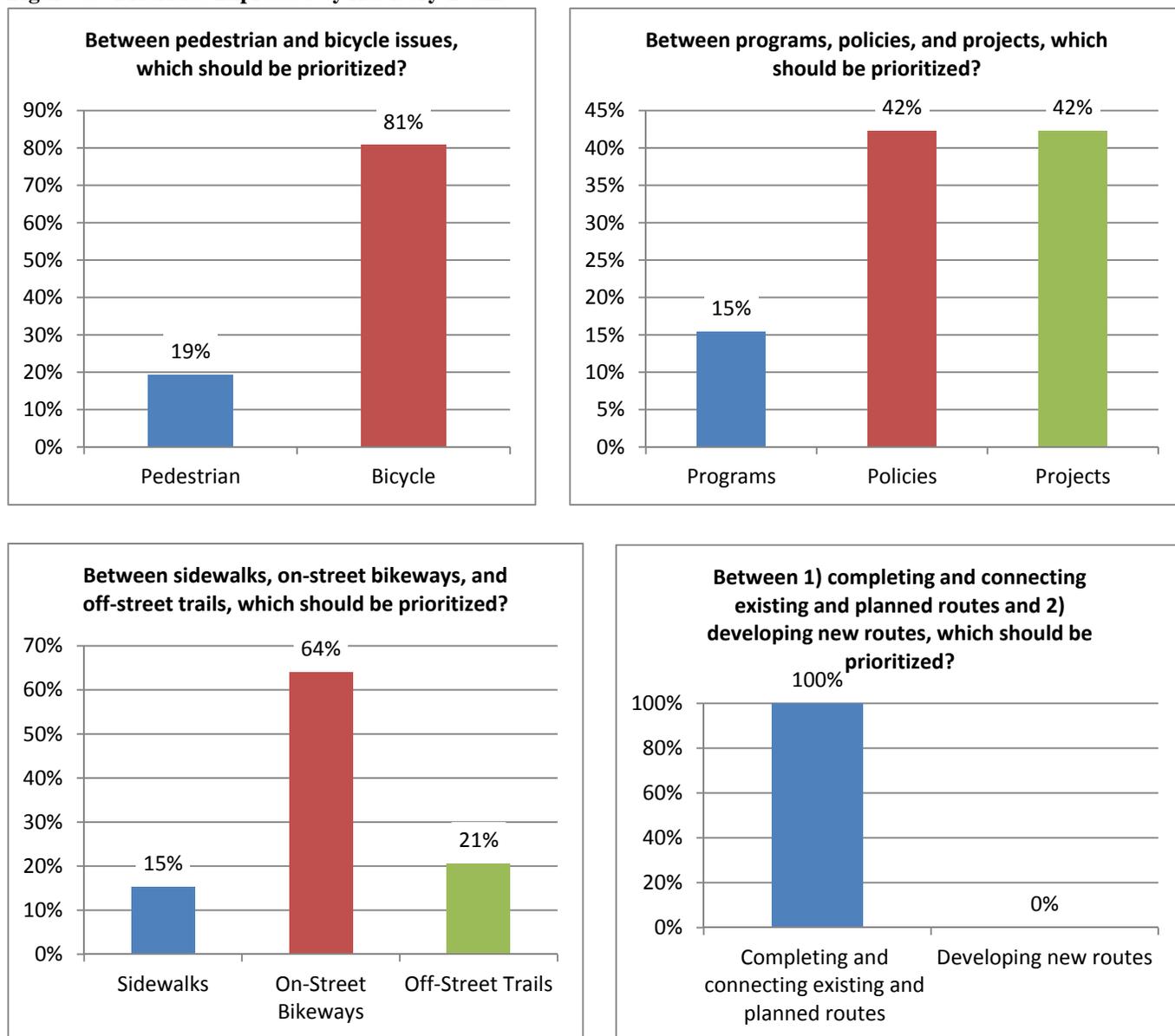
Name	Organization	Position
Jeff Abboud	Wisconsin Department of Transportation	Urban/Regional Planner, Northwest Region Bicycle/Pedestrian Coordinator
Cameron Bump	Wisconsin Department of Natural Resources	Northwest District Trails Coordinator
Brian Kelley	Chippewa County	County Highway Commissioner
Dean Roth	Eau Claire County	County Surveyor
Josh Clements	City of Altoona	City Planner
Jayson Smith	City of Chippewa Falls	City Planner
Dick Johnston	City of Eau Claire	Bicycle and Pedestrian Advisory Committee Member
Gary Spilde	Village of Lake Hallie	Village Trustee
Ann Gordon	Town of Lafayette	Resident
Bill Zimmerman	Town of Tilden	Resident
Eric Anderson	West Central Wisconsin Regional Planning Commission, Safe Routes to School	Senior Planner
Dave Elvig	Altoona Outdoors	President
Mark Quam	Chippewa Valley Transit Alliance	President
Ann McKinley	Friends of the Chippewa River State Trail	President
Jeremy Gragert	Wisconsin Bike Fed	Northwest Ambassador

At the first Advisory Team meeting, each member took several minutes to give some brief input in order to help guide the plan. First, the members were asked to choose a priority from four sets of related topics. The results from that input are shown in the charts in Figure 53.

**Figure 52: Advisory Team Meeting**



**Figure 53: Priorities Expressed by Advisory Team**



These results indicate the following priorities:

- Bicycle issues over pedestrian issues
- Policies and projects are of comparable priority, but both are a higher priority than programs
- On-street bikeways significantly more than off-street trails and sidewalks, and off-street trails only slightly more than sidewalks
- Completing and connecting existing and planned routes was prioritized completely to the exclusion of developing new routes

## Strengths and Issues

Members of the Advisory Team also responded to the following two open-ended questions:

- What are some good things about biking and walking in the metropolitan area that should be strengthened or spread?
- What are some issues that need to be addressed to improve biking and walking in the metropolitan area?

Figure 54 shows the responses that were shared and the number of times the same or a similar response was given. Topics that have responses in both the strength and issue categories have been paired side-by-side. For example, the topic of trails was seen as a strength in that they provide connectivity. At the same time, an issue with trails is that there are numerous destinations and neighborhoods that are not near a trail and, therefore, cannot take advantage of the connectivity they provide elsewhere.

Looking at topics this way can help show that issues can be addressed by building on existing strengths.

Responses that did not have a pair are shown on their own row. This is the meaning of the color scale:

Number of responses	
9	4-6
3	3
2	2
1	1

**Figure 54: Strengths and Issues Table**

<b>Strengths to build on</b>	<b>Issues to address</b>
<b>Infrastructure</b>	
Trails <ul style="list-style-type: none"> <li>• Regional connections</li> <li>• Short trips in city</li> <li>• Continuing to expand</li> <li>• Connecting to important destinations</li> <li>• Building upon existing paths/trails</li> </ul>	<ul style="list-style-type: none"> <li>• Complete trail gaps, i.e. between Lake Hallie and Chippewa Falls</li> <li>• Upgrade trail surfaces</li> <li>• New trails</li> <li>• Painted middle line for trails, especially in busy areas</li> </ul>
Signage and pavement markings <ul style="list-style-type: none"> <li>• Routes</li> <li>• Informational signs</li> <li>• Maps on bikeways (uniformity, visibility, destination distances, "you are here" shown)</li> </ul>	Improve wayfinding signage and its consistency <ul style="list-style-type: none"> <li>• Include trail map signs</li> </ul>
On-street bicycle facilities <ul style="list-style-type: none"> <li>• Expansion of bicycle facilities (trails, bike lanes, etc.) in the region</li> <li>• New roads include bike lanes</li> <li>• Road reconstruction includes bike facilities where feasible</li> </ul>	<ul style="list-style-type: none"> <li>• Expand on-street bike facilities</li> <li>• Build protected/separated bike lanes</li> <li>• Traffic signals for bikes</li> <li>• Adopt bicycle safety measures recommended by trained bicycle professionals (traffic engineers and planners)</li> </ul>

Pedestrian facilities <ul style="list-style-type: none"> <li>• Existing sidewalks</li> <li>• Expansion of pedestrian facilities in the region</li> <li>• New roads include safe sidewalks</li> <li>• Road reconstruction includes pedestrian facilities where feasible</li> </ul>	<ul style="list-style-type: none"> <li>• ADA issues</li> <li>• Expand pedestrian facilities</li> <li>• Sidewalk maintenance</li> <li>• Pedestrian-scale lighting</li> </ul>
Connections for useful transportation	Improve connectivity – within municipalities and across metropolitan area through collaboration
Inclusion of bike and pedestrian infrastructure in road construction and reconstruction	Reduce big roads, manage barrier corridors, and build road right-of-way to human scale
Safe Routes to School corridors	
	<ul style="list-style-type: none"> <li>• Widen shoulders or bike lanes along J and X between Chippewa Falls and Lake Wissota</li> <li>• Improve pedestrian travel in Lafayette</li> </ul>
	Create a trail between Chippewa Falls and Eau Claire west of the Chippewa River
	<ul style="list-style-type: none"> <li>• Better connection between Clairemont and 93 trails</li> <li>• Trail extension on 12 in Altoona east of 12</li> </ul>

<b>Policies/Plans</b>	
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Bike parking requirements and bike/ped site plan access in Eau Claire	Altoona and Chippewa Falls need bike parking requirements
Eau Claire has a BPAC	Altoona, Chippewa Falls, and counties should have BPACs, too
Bike plans in Eau Claire	Need bike plans in all communities updated
	<ul style="list-style-type: none"> <li>• Address ADA issues in design</li> <li>• Identify a uniform sidewalk policy and enforcement</li> </ul>
	Urban/rural plans/policies that can create arterials for travel by bike or foot from outside the city areas to the areas that people want to go to. CONNECTIVITY.
	Complete Streets policy – City of Eau Claire, Eau Claire County, Chippewa Falls, Chippewa County
	Consistent funding opportunities <ul style="list-style-type: none"> <li>• Maintenance of bikeways             <ul style="list-style-type: none"> <li>○ purchasing of bike passes: make it easier to purchase passes, some people don't know how; money from passes should be put back into maintenance</li> </ul> </li> <li>• Enforcement             <ul style="list-style-type: none"> <li>○ motor vehicles</li> <li>○ grants available for stepped up enforcement</li> </ul> </li> </ul>

Reduce car parking requirements
Evaluate TIP projects for bike/ped improvements
Cross-jurisdictional cooperation e.g. Altoona City, Altoona School, EC County for Hwy KB; Altoona City, Town of Washington, Eau Claire County for S. Beach Rd.
Gaining clear agreement on the economic value of multi-use trails and communicate that to the elected officials and the public
Supportive employers with policies, culture, and facilities
Speed limits are way too fast in the urbanized area

<b>Programs</b>	
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	Education <ul style="list-style-type: none"> <li>• Need dedicated staff to work on education in Eau Claire and region</li> <li>• Education on route selection</li> <li>• Big education, signs, reminders for vehicles to be mindful of bikes and walkers especially near city trails</li> </ul>
Chippewa Valley Bike Map - continue to show routes that are not bike/ped friendly	Show Lake Wissota Area on maps
Bikes on buses	Connect Chippewa Falls and Eau Claire via bus
Clearing snow and ice from sidewalks, clearing sand and gravel from streets	

<b>Geography</b>	
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Rural area that is not too suburbanized	Compact land use - to enable & facilitate bike/ped, infill, etc.
Incorporating with nature	

## Interviews

Interviews were conducted with each of the 15 members of the Advisory Team after the group’s first meeting. Most interviews were over the phone, and the others were in-person. The goals of the interviews were 1) to learn more about what their organization does with respect to walking and biking and 2) to hear what issues they care about and want the plan to address. Before the interviews, each member received a list of discussion questions related to those two goals, giving them time to consider full answers.

Figure 55 is a summary of the various topics that were discussed in the interviews. The bars on the chart represent the number of Advisory Team members who discussed each topic in their interview. The frequency with which a topic was discussed may be a rough indicator about how important the topic is. Although the conversations began with prepared questions, the members’ responses covered a wider variety of bicycle and pedestrian topics.

Funding was the most frequently discussed topic and included discussions of various challenges:

- Some units of government, particularly towns, do not want to spend money on sidewalks or bikeways. As a result, those facilities do not get built, even in places where a town interfaces with a city and gaps in the sidewalk network remain unfilled.
- Funding for the Department of Natural Resources has been cut significantly, leading to a decline in maintenance funding for State Trails across Wisconsin and in our area, causing trail conditions to deteriorate in many places.
- It is necessary to be careful when developing policies related to infrastructure construction and maintenance so as not to create an unfunded mandate whereby the unit of government is required to build facilities without an accompanying source of funds.

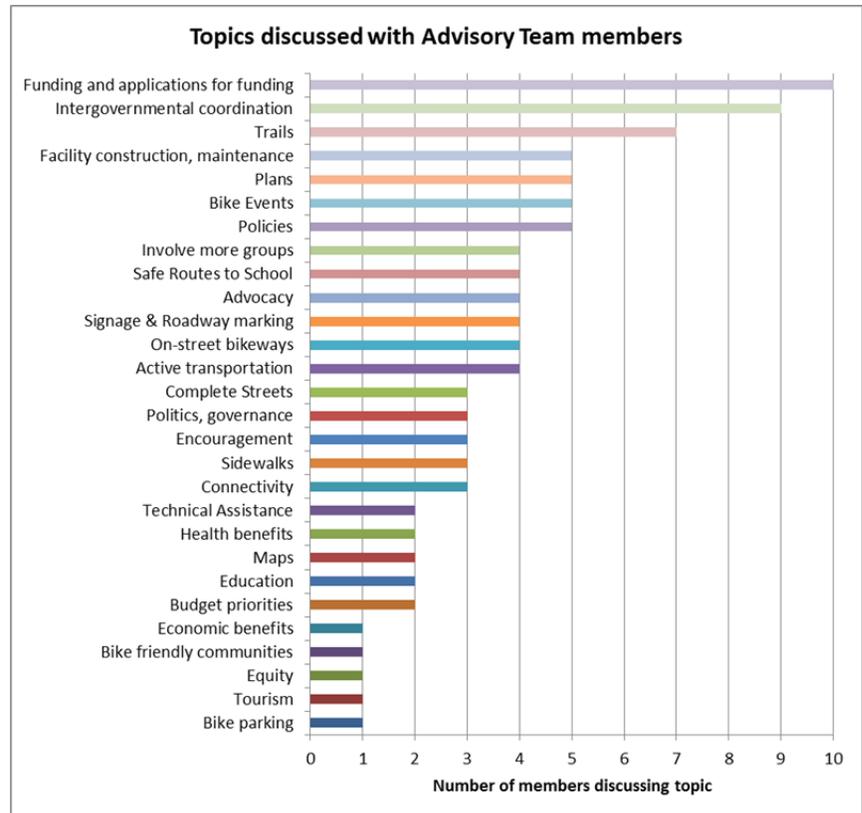
These are just a few of the conversations about one topic. The interviews were informative and beneficial, and they helped influence the overall direction of this plan.

The input provided by the Advisory Team members, whether through their responses to written questions or interview conversations, has been used in

creating this plan. By identifying priorities, strengths to build on, issues to address, and topics of importance, direction was given in developing the Vision, Goals, and Objectives of the plan.

With that direction, a draft of the Vision, Goals, and Objectives was written. The draft was shared with the Advisory Team before the second meeting to allow members to review it and make suggestions. At the second meeting, the Vision, Goals, and Objectives were discussed as a group, and a number of additions and changes were suggested. These were incorporated into a final draft that was shared with Advisory Team members electronically before being finalized. The final Vision, Goals, and Objectives document incorporates a variety of viewpoints, positions, and values to give direction to future bicycle and pedestrian improvements in the metropolitan area.

**Figure 55: Interview discussion topics Chart**



## **APPENDIX B – SUMMARIES OF RELEVANT PLANS**

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The following plans and policy documents relevant to this Plan were reviewed during the process of the Existing Conditions analysis. The review focuses on plans and studies prepared by the Wisconsin Department of Transportation (WisDOT), metropolitan/regional plans, and local plans.

## Statewide Documents

### **Connections 2030 (2009)**

WisDOT's comprehensive transportation plan (Connections 2030) not only supports the recommendations of Wisconsin's State Bicycle Transportation Plan 2020 and Pedestrian Policy Plan 2020, but also calls for the incorporation of bicycle and pedestrian accommodations into projects now widely known as Complete Streets. The plan states that WisDOT and other agencies should "include bicycle and pedestrian facilities on state and federally funded projects, following the federal 'Complete Streets' policy." The plan specifically calls on WisDOT to evaluate and work to expand opportunities to include bicycle and pedestrian accommodations on urban state trunk highway projects. The plan goes on to recommend changes to policies, practices, and standards to fully implement Complete Streets. The plan also lends support for the use of ADA design guidelines and Community Sensitive Design solutions. A state law was passed in 2009 that made Complete Streets a requirement for new and reconstructed streets. This law was subsequently repealed in 2015, but the federal language requiring "due consideration" for cyclists and pedestrians in state projects was retained. However, it is now required that local governments authorize any bike and pedestrian installations before WisDOT includes them in its projects.

### **Wisconsin State Bicycle Transportation Plan 2020 (1998)**

The vision statement for this plan is: "To establish bicycling as a viable, convenient, and safe transportation choice throughout Wisconsin." The plan has two primary goals:

- Increase levels of bicycling throughout Wisconsin, doubling the number of trips made by bicycles by the year 2010 (with additional increases achieved by 2020).
- Reduce crashes involving bicyclists and motor vehicles by at least 10% by the year 2010 (with additional increases achieved by 2020).

This plan provides guidance on the state-owned and state-supported transportation systems in Wisconsin. Policies are divided into urban and intercity (rural) geographies. Policies from both categories apply to the Chippewa-Eau Claire MPA.

#### ***Urban:***

- "Bicycle provisions on urban arterial streets (i.e., wide curb lanes, bicycle lanes or paved shoulders) should be made in accordance with Metropolitan Planning Organization (MPO) and community bicycle plans."
- "On Urban State Trunk Highways, where suitable accommodations for bicyclists now exist, new highway improvements will be planned to continue an acceptable level of service and safety for bicyclists."
- "WisDOT will cooperate with local jurisdictions to help develop 'stand alone' bikeway projects, including bicycle path facilities, when they are consistent with an approved plan and provide important bicycle transportation improvements."

- “Safe crossings should be maintained or created when bikeways and streets intersect highways. Crossing controls or grade separations should be considered where there are inadequate gaps in traffic for safe bicycle path crossing.”
- “Intersection design should consider the needs of bicyclists. All intersections should be wide enough for safe bicyclist crossing.”

***Rural:***

- “Suitability of highways for bicycling is most affected by traffic volumes and widths. Therefore, the following three actions should be considered, especially when roadways are reconstructed:
  - “On all higher-volume rural roadways (generally with motor vehicle volumes exceeding 1,000 per day), paved shoulders should be provided.
  - “On higher-volume roadways (exceeding 1,000 vehicles per day) with a moderate number of bicyclists currently using or anticipated to use the roadway, wider paved shoulders should be provided. Most of the State Trunk Highways on the plan’s Priority Corridors and Key Linkages meet this criterion.
  - “On lower-volume roadways (under 1,000 vehicles per day), generally no special improvements are necessary to accommodate bicyclists. These lower-volume roadways should be identified and mapped to provide bicyclists with appropriate information to help them make connections between communities and rural recreation and commercial areas/sites.”
- “When improvements are being considered on County Trunk Highways, counties should strongly consider the recommendations of county bicycle plans.”
- “Multi-use paths (separated, primarily two-way bikeway facilities often referred to as trails) should be considered when: 1) bicyclists cannot be safely accommodated with on-street facilities; or, 2) an opportunity exists to improve the transportation aspects of bicycling by locating a rural bicycle path within an abandoned rail corridor, utility corridor, or river grade”
- “Safe crossings should be maintained when paths (trails) intersect highways. Additionally, crossing controls or grade separations (overpasses or underpasses) should be considered where gaps in traffic are inadequate for safe crossing.”

For MPOs, the plan recommends the following implementation actions:

- Develop, revise, and update long-range bicycle plans
- Provide technical assistance to local communities, especially for plan implementation
- Develop Transportation Improvement Program (TIP) project selection criteria that apply to bike facilities
- Develop land use and transportation plans that will lead to compact and contiguous development

**Wisconsin Pedestrian Policy Plan 2020 (2002)**

The vision statement for this plan is: “To establish pedestrian travel as a viable, convenient, and safe transportation choice throughout Wisconsin.” The primary goals of this plan are:

1. Increase the number and improve the quality of walking trips in Wisconsin.
2. Reduce the number of pedestrian crashes and fatalities.

3. Increase the availability of pedestrian planning and design guidance and other general information for state and local officials and citizens.

The Policy Plan encourages local governments, MPOs, and Regional Planning Commissions (RPCs) to devote attention to meeting pedestrian needs on roadways in their areas. This guide is WisDOT's primary method to accommodate pedestrians and other interested groups.

Key WisDOT policy statements and actions include:

- WisDOT will review all state trunk highway projects for pedestrian needs using scoping criteria and guidelines.
- WisDOT supports stand-alone sidewalk projects through such programs as the Transportation Enhancement Program for sidewalk retrofit projects to fill in gaps.
- WisDOT commits to minimizing the “barrier effect” to walking. This problem is sometimes caused by state trunk highways that are hard to walk along or cross. One solution is to join local sidewalks to state trunk highway sidewalks. Particular attention will be paid to needs near high traffic generators such as schools and commercial areas.

### **Wisconsin Bicycle Planning Guidance (2003)**

This document is a reference for Metropolitan Planning Organizations (MPOs) responsible for planning in urbanized areas of Wisconsin. It discusses the importance of bicycling for transportation and outlines and describes the bicycle planning process and content requirements. The focus of this guide is also on the utilitarian and transportation aspects of bicycling and less on recreational uses.

### **Wisconsin Bicycle Facility Design Handbook (2004)**

This handbook is the primary source for facility design guidance in the state of Wisconsin. It discusses the operating characteristics and needs of bicyclists, and it presents the wide range of design options for enhancing a community's bicycle transportation system. The guide covers basic roadway improvements for shared streets, details for on-street bicycle lanes, and the design of shared-use paths. It provides information that can help to determine if paved shoulders are necessary. Shared Lane Markings (SLMs), introduced into the 2009 edition of the FHWA Manual on Uniform Traffic Control Devices and in common use around the country, are not included in this guide.

### **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 Guide to Pedestrian Best Practices (2010)**

The Wisconsin Guide to Pedestrian Best Practices provides detailed design, planning and program information for improving all aspects of the pedestrian environment. The guide serves as a companion document to the Wisconsin Pedestrian Policy Plan 2020 to assist in the implementation of the goals, objectives and actions of the plan and serves as a reference or guidebook for state and local officials.

## **Wisconsin Facilities Development Manual**

This manual provides policy, procedural requirements, and guidance encompassing the facilities development process within the Wisconsin Department of Transportation, Division of Transportation Systems Development (DTSD). It is applicable to all types of highway improvements on the state trunk highway system, other street/highway systems for which federal-aid highway funds may be utilized, state facilities road systems funded with state funds administered by the Department, and other highways and roads for which the Department may act as an administrative agent. Bicycle and pedestrian accommodations and designs are included to provide for safe, on-street multimodal travel.

## **Metropolitan and Regional Plans**

### **Bicycle Transportation Plan for the Eau Claire Urbanized Area, 1995-2020**

This was the first plan for bicycle transportation in the area. The MPO worked with WisDOT, Wisconsin DNR, local government representatives, and local bicycle advocates. The primary goal of the plan was to encourage bicycle transportation as an important component of an integrated multi-modal transportation system. To achieve that goal, three objectives were identified:

- Objective 1: Identifies a bikeway system that will provide all bicyclists in the urban area with safe and convenient access to all major centers of employment, education, retail trade, housing, and recreation
- Objective 2: Strives to increase the safety of bicycle transportation through facility improvements, education, and law enforcement programs which pertain to the interaction between motorists and bicyclists on public roads
- Objective 3: Promotes an increased community awareness of the use of bicycles as a viable alternative mode of transportation

One of the main outcomes of the plan was the identification of 191 miles of bikeways in the area. These bikeways were composed of 137 miles of on-street improvements and 54 miles of bike paths. The projected estimated cost of building out this network over 25 years was \$9.5 million. The planning criteria used to develop this network were identified, as well as research on bicycle usage, the typical bicycle user, bicycle safety, and crashes. Various types of bikeways were described, including unit costs.

For implementation, the plan presented recommendations in three aspects: (1) Facilities Development and Maintenance, (2) Supporting Facilities, and (3) Safety Education and Enforcement Programs. Funding sources were identified.

### **Chippewa Valley Trail System Master Plan – Wisconsin Department of Natural Resources (1996)**

The plan proposed to establish the 70-mile-long Chippewa Valley Trail System by combining four existing state rail-trail corridors: Old Abe State Recreation Trail, Urban State Park Trail, Chippewa River State Recreation Trail, and Red Cedar State Park Trail. This approach permitted regional planning and individualized trail identity. Development of the first trail had begun when the Natural Resources Board authorized the Red Cedar Trail in 1973.

The goal of the plan was to provide 70 continuous miles of designated state trail and to promote activities that protect and are in harmony with the resources and purposes of the. The plan promoted a cooperative effort between the DNR and local municipalities. The role of the DNR was to acquire the abandoned rail

corridor and operate the Red Cedar and Chippewa River Trails while local governments were expected to develop and maintain the Urban and Old Abe Trails after the DNR purchased the Old Abe Trail and portions of the Urban Trail. The plan estimated that 260,000 people would use the trail system annually.

### **West Central Wisconsin Comprehensive Plan 2010-2030 – West Central Wisconsin Regional Planning Commission**

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 for every county with state and regional coordination, as well as 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.

### **Chippewa-Eau Claire MPO Long Range Transportation Plan (2016)**

This plan supports the recommendations of the bicycle and pedestrian plans adopted by the cities of Eau Claire and Chippewa Falls. It recommends developing and enhancing the connections between the urban systems and the trail system in the rural areas. It includes general infrastructure recommendations for making streets safer for biking and for incorporating sidewalks in construction projects through existing municipal sidewalk policies. Several specific projects are mentioned, including closing the gap in the state bike trail between Lake Hallie and Chippewa Falls and the potential for a grade-separated crossing of Interstate 94 between the USH 53 and STH 93 interchanges.

## **Local Government Plans**

### **City of Chippewa Falls**

#### *Bicycle and Pedestrian Plan (1995)*

In addition to a map and table of proposed bicycle facilities for improving local conditions, this plan made recommendations to seize many of the City's greatest opportunities to enhance bicycling and walking including:

- Proposing linkages to the Chippewa Valley Trail which will provide regional transportation and recreational travel opportunities within the scenic Chippewa River corridor
- Proposing safe bicycle and pedestrian facilities within ¼ mile of all urban homes
- Recommending bicycle and pedestrian facilities for several local state trunk highways currently being designed for reconstruction
- Recommending off-street bicycle and pedestrian ways that are eligible for current funding sources administered by Wisconsin DNR and Wisconsin DOT
- Proposing connections to the regional network of bikeways developed by the MPO
- Recommending procedures to strengthen existing education and enforcement activities
- Involving leaders of the City and the Main Street program who have helped direct this plan

#### *Comprehensive Plan (2012)*

This plan included several goals, objectives, and strategies regarding biking and walking, such as:

- provide safe biking and walking options and connections throughout the community
- increase the amount of bicycle parking downtown
- create a more bike- and pedestrian-friendly downtown
- create and promote a safe and healthy walking route through downtown
- promote mixed-use development and walkable neighborhoods

*Chippewa Falls Outdoor Park & Recreation Plan, 2013-2018*

Recommendations related to walking, biking, and trails included:

- *Intergovernmental Cooperation:* Efforts should be made to coordinate County, Town, and Village recreation programs with City programs in order to better serve area residents.
- *Park System Continuity:* Parks and outdoor recreation development should occur within the context of the entire park system, the bike/pedestrian trail, and the development trends of the City of Chippewa Falls.
- Complete the *Chippewa Valley Trail* link through the City to Lake Hallie.
- Continue to develop walking paths and *internal trail networks* within existing parks, especially for those wooded, natural park areas such as Hurd, Goldsmith, and Kalk-Fatu.
- Construct the *southeast trail system* as resources allow and demand warrants.
- Once the Chippewa River Trail System through Chippewa Falls is complete, develop a *bicycle route map/brochure*, which also identifies potential destinations for residents and tourism purposes.

**City of Eau Claire**

*City of Eau Claire Bicycle and Pedestrian Plan (2010)*

The overall goal of the plan is to “Establish bicycling, pedestrian, and other non-motorized travel as a viable, convenient, and safe transportation and recreational choice throughout the City of Eau Claire, which will contribute to the quality of life in Eau Claire, sustainability of the environment, and health of all residents.” Numerous strategies are included in these three main objectives:

- Facility planning and engineering
- Education and outreach
- Enforcement and ordinances

This plan mapped the City’s sidewalk network and identified gaps in the network that need to be filled. It also developed a system of on-street bicycle routes, categorized as “Primary On-Street Bicycle Corridors” and “Local Bicycle Routes.”

The plan included 23 “Areas Requiring Further Study” – geographic locations that were identified as having unique issues relative to the bicycle and pedestrian environment.

*City of Eau Claire Comprehensive Plan (2015)*

This plan is coordinated with the City of Eau Claire Bicycle and Pedestrian Plan (2010). In the Transportation System Assessment, it states, “There are few good opportunities for on-street bicycling lanes because of the width of collector and minor arterial roads. However, the off-street path system is

strong and growing.” It also describes the difference in land use and street development that makes central Eau Claire more walkable than newer areas further from the center.

In the plan’s Transportation Chapter, walking and bicycling objectives are elaborated upon:

- Walking: Improve pedestrian connections to create a continuous and seamless pedestrian system, and enhance the pedestrian environment to create a more walkable community.
- Bicycling: Continue to build a connected bicycle route and trail network that is viable, convenient, and safe and that encourages both utilitarian and recreational riding.

Among the objectives is the need to “follow a ‘Complete Streets’ philosophy when designing new streets or rebuilding existing streets.” In addition to streets, there is also a plan laid out for future trail construction.

The Downtown Chapter of the plan includes the objective to “Enhance the ability to walk and bicycle Downtown by ensuring safe and attractive routes throughout Downtown and between Downtown and adjacent neighborhoods.”

The Health Chapter discusses the importance of having a walkable and bikeable community from the standpoint of active living and exercise. Land use and urban design recommendations that foster walking and biking are included. Safe Routes to School planning and implementation is discussed. Safety improvements such as traffic calming, education, and enforcement are included.

The Sustainability Chapter talks about the importance of walking and biking as zero emission forms of transportation. It also includes the concept of a balanced transportation system that increases mobility choices like walking and biking.

### **City of Altoona**

#### *Altoona Bicycle/Pedestrian Trail Feasibility Study (2005)*

The City of Altoona completed a Feasibility Study for a network of bicycle and pedestrian trails. The plan includes 23 trail segments totaling 11.3 miles (three miles of new on-street trails and 8.3 miles of new off-street trails). The trail segments were selected to enhance the use of existing trails within the City and to connect the proposed trails to Eau Claire County trails and the trail along USH 12. The proposed trails conform fairly well to those identified by the MPO plan.

The forthcoming Altoona Parks, Recreation, and Trails Master Plan will make recommendations for trails and on-street bike facilities that will supersede this study.

#### *City of Altoona Comprehensive Plan (2009)*

The goal for the transportation system is to “Provide a safe, efficient, multi-modal, and well-maintained transportation network.” The transportation chapter includes policy recommendations to incorporate pedestrian and bicycle planning and infrastructure. Aspirations for the future include an on/off road pedestrian and bicycle trail that will loop through the City connecting various destination points and continuous sidewalks, or equivalent provisions, along both sides of collector & arterial streets (also local streets but with the provision that this requirement may be waived by the Plan Commission).

#### *City of Altoona Parks, Recreation & Trails Master Plan (2017)*

This plan serves as a foundational philosophical framework and policy guide providing direction for the development and operation of all public spaces, including parks, recreation programs, open spaces,

bicycle and pedestrian facilities, and streetscapes within Altoona and future development areas. The plan includes a map of future trail and on-street bicycle facility construction (this plan is in process).

### **Village of Lake Hallie**

#### *Village of Lake Hallie Comprehensive Plan (2009)*

This plan encourages the development of trail linkages for both transportation and recreation purposes. Several specific trail links are mentioned, notably the gap between Lake Hallie and Chippewa Falls, the connection to this trail from 130<sup>th</sup> Street on 40<sup>th</sup> Avenue, and the link from the STH 29 Bridge to 110th Street and 40th Avenue. The plan also encourages the use of Traditional Neighborhood Development (TND) that is served by a network of paths, streets, and lanes suitable for pedestrians, as well as vehicles, and includes a variety of housing types and land uses in a designated area.

### **Towns – Comprehensive Plans**

- Chippewa County
  - Anson (2009)
  - Eagle Point (2009)
  - Lafayette (2009)
  - Tilden (2009)
  - Wheaton (2010)
- Eau Claire County
  - Brunswick (2009)
  - Pleasant Valley (2009)
  - Seymour (2009)
  - Union (2007)
  - Washington (2009)

The towns that are part of the Metropolitan Planning Organization each have their own comprehensive plans. Several common themes appeared in most of the plans.

- Trails
  - Residents identified trails as the most valuable, or one of the most valuable, recreational assets that enhance quality of life in the town.
  - There was a strong desire to extend existing trails, make new connections to existing trails, or develop new trails. It is important for these trails to be connected in a network.
  - Some existing trails need improvement, particularly at intersections with highways.
  - There was acknowledgement that the cost of trail construction is an impediment to building more trails.
- Multimodal transportation
  - Many towns want walking and biking to be viable transportation options within the towns and between the towns and urban centers.
  - At the same time, there was acknowledgement that the lack of safe walking and biking facilities and the relatively long distances between destinations can make walking and biking a challenge.
  - These plans discuss the importance of incorporating bike and pedestrian facilities, such as paved shoulders or striped lanes, in the reconstruction/resurfacing of roads. Additionally,

these plans discuss the benefit of incorporating trails into new subdivisions and connecting them to existing trails.

- Intergovernmental cooperation
  - These plans state the need for cooperation with other units of government – such as neighboring municipalities, the county, the MPO, and Wisconsin DNR and DOT – on bike and pedestrian issues, including future route and trail development.

## **Chippewa County**

### *Chippewa County Comprehensive Plan (2010)*

The transportation chapter of this plan points to the Old Abe State Trail as the primary trail designated for bicycle use. It highlights other trails in Chippewa Falls and some highways deemed suitable for biking, too. The plan states that “pedestrian facilities are not uniformly present in all communities throughout the County.” In this regard, one of the biggest issues is the location of schools, which can prevent children from safely accessing these facilities.

One goal of the plan is to improve bike and pedestrian trail accessibility. To help accomplish this goal, the plan recommends modifying County highway design in recreational areas to accommodate bike and pedestrian travel. The Parks and Recreation section states another goal, which is to maximize the opportunities for residents and visitors to enjoy the natural resources within the county through the development and/or maintenance of parks, trails and wildlife areas.

### *Chippewa County Outdoor Recreation Plan, 2010-2015*

This plan outlines the hiking and nature trails in the county. The bicycling section mentions the Old Abe State Trail, trails in the City of Chippewa Falls, and various rural roads. The plan discusses the need to respond to the growing population and growing popularity of walking and biking. It proposes to meet this demand with more trails and bike routes. One particular area proposed for further development is currently known as Area 178, formerly the County Farm. This plan proposes promoting the use of the designated trail system and recommended bike routes whenever possible.

## **Eau Claire County**

### *Eau Claire County Comprehensive Plan (2010)*

The Transportation Element of the plan includes the policy to incorporate pedestrian and bicycle facilities, such as striped, paved shoulders, when county roads are reconstructed or resurfaced. The County encourages municipalities to require new developments to include adequate walking and bicycling routes in residential and commercial areas. This plan recommends developing a County Bicycle and Pedestrian Plan, which should emphasize development of both on/off road bike and pedestrian trails that would link rural, residential subdivisions with important business and civic destinations in the County (this will begin in 2017). The community survey in the plan identified bike and pedestrian trails as the top recreational facility requiring development or improvement.

### *Eau Claire County Outdoor Recreation Plan, 2016-2020*

This plan describes the numerous biking and walking trails and facilities in the County, explains the demand for more and improved facilities, and points out the need for a plan to focus on enhancing the interconnectivity of existing trail segments, parks, and other outdoor recreation facilities.

Recommendations include designating bicycle routes, installing signs to alert motorists to heavier bicycling activity, and conducting an information campaign to encourage trail use and to instruct motorists about bicycling and pedestrian issues.

## **APPENDIX C – PUBLIC ENGAGEMENT**

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The public engagement process included a variety of activities and ways to share input on the plan. It also included numerous forms of publicity to spread the word about the effort:

- Open houses
  - Eau Claire, June 8, 2016
  - Chippewa Falls, August 29, 2016
  - Altoona, September 8, 2016
- Online survey
  - Open from July 25 to October 6, 2016
  - 131 responses
- Online WikiMap
  - Open from July 25 to October 9, 2016
  - 69 responses
- Webpage with information about the plan, bicycling and walking in general, and links to the survey and WikiMap
- Input from Advisory Team members
  - Meeting 1, April 28, 2016
  - Meeting 2, June 29, 2016
  - Meeting 3, September 12, 2016
  - Meeting 4, January 23, 2017
- Bike Week
  - Kick-off event, June 7, 2016
    - Talked with approximately 22 people
  - Open House at Volume One, June 8, 2016
- Eau Claire Healthy Communities monthly meeting, June 20, 2016
- Bike Walk Civics training, August 19, 2016
- Sustainable Future Festival, September 17, 2016
- Transportation and Equity Summit, September 22, 2016
- Publicity
  - Media
    - Contacted 10 media outlets, including newspapers, TV, and radio
    - 11 published media stories, including TV and newspaper, featuring the MPA Bicycle and Pedestrian Plan and the funding award for the completion of the trail gap between Chippewa Falls and Lake Hallie
    - Posts on relevant Facebook pages and emails to group members – bike clubs, bike shops, neighborhood associations, advocacy groups, and local governments
    - Announcement on Altoona Parks and Recreation seasonal guidebook
  - Posters and Flyer distribution
    - 43 locations in all, including bike shops, grocery stores (including Asian and Latino grocery stores), coffee shops, colleges, libraries, senior centers, and offices: government, social service agencies, tourism, chamber of commerce
    - Bike Valet for summer concert series

## Open Houses

Three open houses were held:

- Eau Claire: Wednesday, June 8, 2016, 5:30 PM-8:00 PM, Volume One Local Store
  - Approximately 45 attendees
- Chippewa Falls: Monday, August 29, 2016, 5:00 PM-6:30 PM, Chippewa Falls City Hall
  - Approximately 12 attendees
- Altoona: Thursday, September 8, 2016, 4:30 PM-6:30 PM, Altoona City Hall
  - Approximately 25 attendees

Figure 56: Bike Week Flyer with Open House Circled

**WISCONSIN BIKE FED & VolumeOne**  
PRESENT  
*Eau Claire*  
**BIKE WEEK**  
2016  
*It's time to celebrate all-things bicycling in Wisconsin!*  
Join us for events around the Chippewa Valley to celebrate all Wisconsin cyclists. From family fun rides to hangouts and special deals, there's is something for everyone during Wisconsin Bike Week.

**TUESDAY JUNE 7**  
**BIKE WEEK KICKOFF EVENT** • 6:30am - 10:00am  
Volume One Parking Lot  
205 N. Dewey St., Eau Claire  
Join Friends of a bike-friendly Wisconsin for the Bike Week kickoff party with free coffee from Soul Brewed Coffee Roasters, free fruit from Just Local Foods, unique bikes and more. Wisconsin Bike Week runs June 4th-11th. Bike party at 7:30am!  
SPONSORED BY: **BIKE MAINTENANCE 101** • 7:00pm  
Volume One Gallery  
205 N. Dewey St., Eau Claire  
Join Dan from Club MTC Makerspace, for a basic run-down of bike maintenance, tune-ups, & repairs.

**WEDNESDAY JUNE 8**  
**OPEN HOUSE** • 5:30pm-8:00pm  
**Metropolitan Bicycle & Pedestrian Plan**  
Volume One Gallery  
205 N. Dewey St., Eau Claire  
Give input for a transportation plan covering bicycle and pedestrian matters in the EC metropolitan area. Learn about the current network, programs, and government policies. Share thoughts on improvement and the future of biking and walking in our area.  
**BIKE TO BASEBALL** • Ride at 6:00pm  
Volume One & The Local Store  
205 N. Dewey St., Eau Claire  
Meet up and ride to an Eau Claire Express Baseball game vs. St. Cloud at Carson Park at 6:35pm! Participating riders get free tickets!  
SPONSORED BY:

**THURSDAY JUNE 9**  
**MEET-UP & RIDE-IN** • Ride at 5:15pm or 5:30pm  
**Sounds Like Summer Concert Series**  
Concert at 6:00pm in Phoenix Park  
Meet-up Points to Bike to Concert:  
-Hibbard Parking lot at UWEC at 5:30pm  
-Flynn Elementary School on the Eastside Hill at 5:15pm, with a pickup stop at Boyd Park at 5:30pm  
-Putnam Heights Elementary at 5:15pm  
Participate in the Ride-in, arrive at the free Bike Valet service at Phoenix Park, and receive a special offer to redeem at the V1 tent.

**FRIDAY JUNE 10**  
**BIKE TO BREAKFAST** • Ride at 7:30am  
Volume One & The Local Store  
205 N. Dewey St., Eau Claire  
Meet-up and ride to the 20th annual Breakfast in the Valley at the Eau Claire County Exposition Center. Breakfast from 5 a.m. -10 a.m. Tickets available at the door. \$7 for adults, \$2 for children 3-12, 2 and younger are free.  
**BIKES, BRIDGES, & BREWS** • Ride at 6:30pm  
Phoenix Park Trailhead Building  
Meet up with some fellow bike lovers to ride over some of Eau Claire's most beautiful bridges, including the new High Bridge, and end up at one of two local breweries: Lazy Monk, or The Brewing Project. The ride covers eight bridges in about 11 miles.  
SPONSORED BY:

**SATURDAY JUNE 11**  
**TAKE A KID MOUNTAIN BIKING DAY**  
Check-in: 10:00am • Ride: 10:30am  
Lunch & Social: 11:30am-12:30pm  
Eau Claire Expo Center  
5530 Fairview Dr., Eau Claire  
An event hosted by Chippewa Off Road Bike Association (CORBA) to get kids excited about mountain biking and getting out on the trails. Registration recommended (see CORBA site).  
SPONSORED BY:

**BIKE WEEK HANGOUT** • 11:00am - 2:00pm  
Riverside Bike & Skate  
937 Water St, Eau Claire  
Wrap up Wisconsin Bike Week with a hangout at Riverside Bike & Skate. Enjoy games, raffle drawing, food from local food trucks and more.  
SPONSORED BY:

**PARTICIPATING SPONSORS**  
Wisconsin Bike Federation  
Volume One  
Bicycle/Pedestrian Advisory Commission (BPAC)  
Chippewa Valley Transit Alliance (CVTA)  
Friends of the Chippewa River State Trail  
West Central Wisconsin Regional Planning Commission  
CORBA (Chippewa Off Road Bike Association)  
Eau Claire Bike & Sport

**for more information visit**  
[BIKEWEEK.WISCONSINBIKEFED.ORG/EAUCLAIRE](http://BIKEWEEK.WISCONSINBIKEFED.ORG/EAUCLAIRE)

**Figure 57: Eau Claire Open House**



**Figure 58: Altoona Open House**

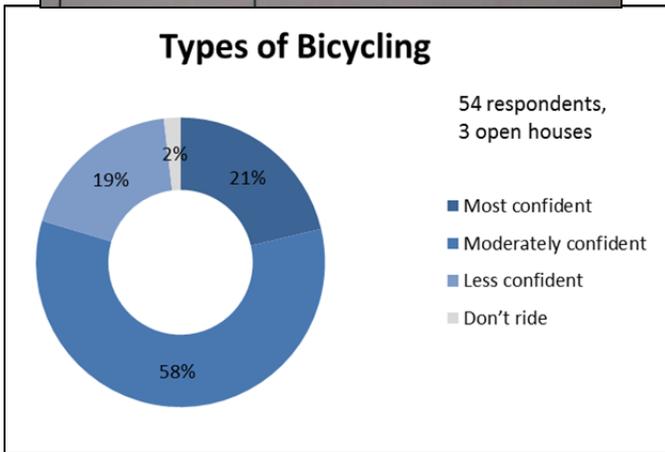
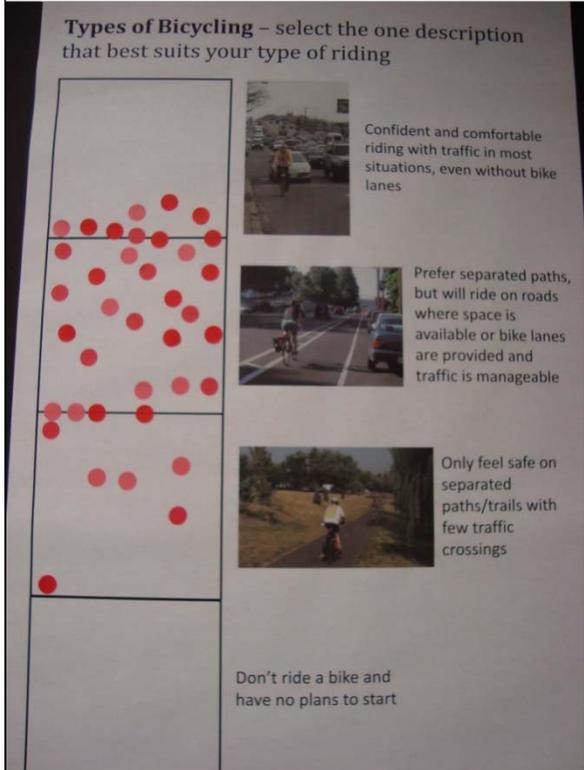


The open houses were formatted as drop-in-type events with informational posters and boards asking for participant input. The informational boards addressed the following topics:

- *Bicycle and Pedestrian Facilities*, including a map of current bicycle facilities in the MPA, as well as pictures and descriptions of the most common bicycle and pedestrian facilities and the degree of separation from traffic the various bicycle facilities provide
- *Crashes*, including a map with all crashes in the MPA over the last five years with a density analysis; charts analyzing the crashes by type (bicycle or pedestrian), age of victim, sex of victim, municipality of crash, time of day, and month
- *Plans, Trails, and Routes* – six maps showing plans for routes and facilities along with existing infrastructure from several units of government: Altoona, Chippewa Falls, Eau Claire, DNR, MPO

- *Safe Routes to School* – a brief explanation of the program and the Five E’s: Education, Encouragement, Enforcement, Engineering, and Evaluation; maps and designs of safe routes and street improvements in Altoona, Chippewa Falls, and Eau Claire

**Figure 59: Types of Bicycling Input Board and Chart**



**Figure 60: Destinations Input Board and Chart**

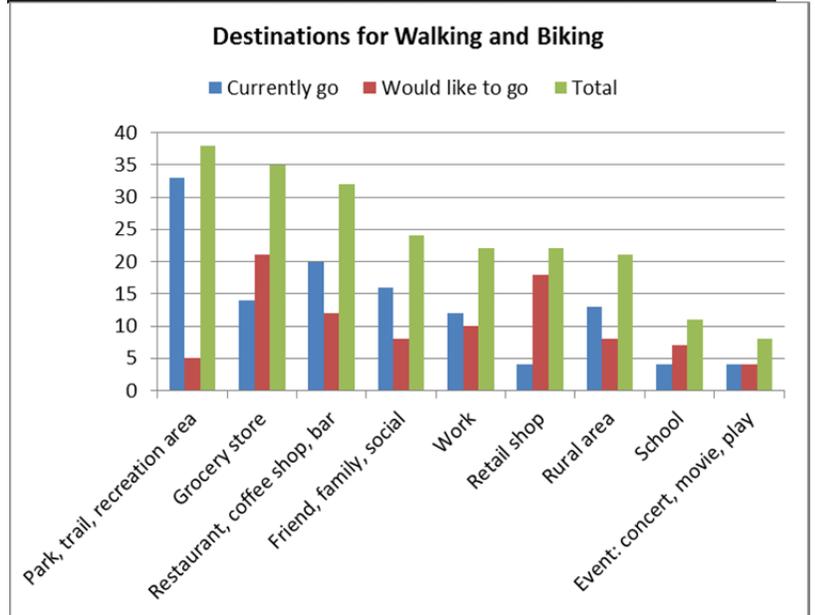
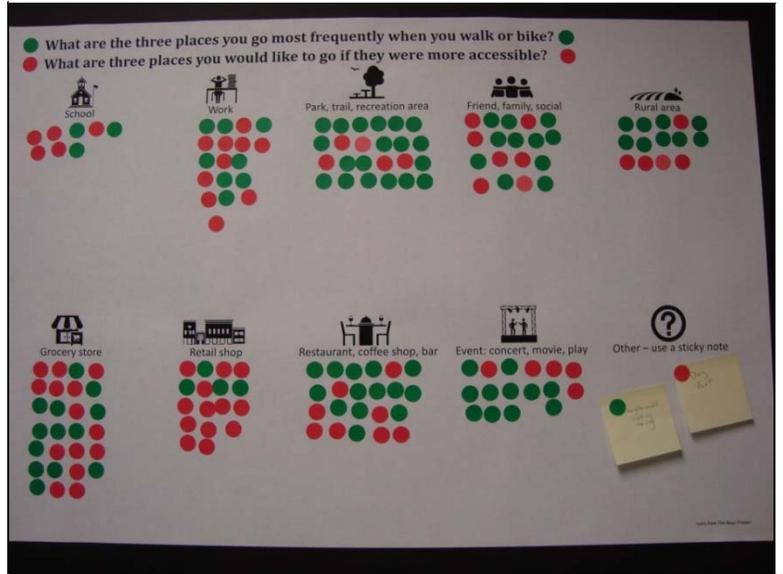
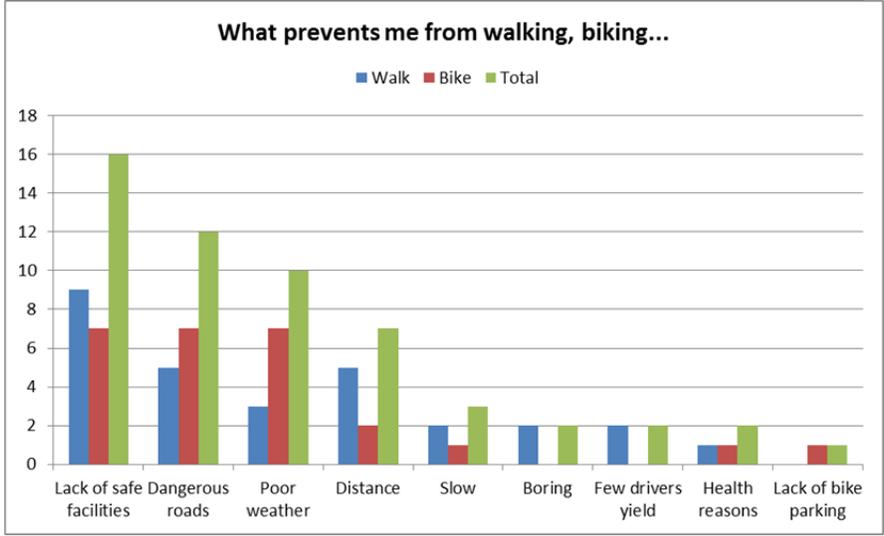
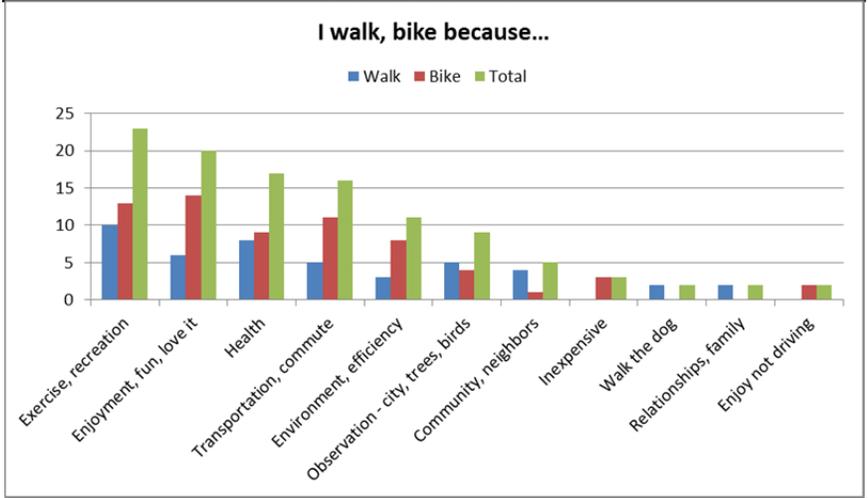


Figure 61: Reasons to Walk/Bike and Barriers to Walk/Bike Input Board and Charts



## Online Survey

An online survey was conducted to ask people in the metropolitan area about their biking and walking habits, attitudes, preferences, and suggestions. The online survey format provided an accessible participation opportunity to those who weren't able to attend an open house, though open house attendees were also welcome to provide further input through the survey. One hundred thirty-one people responded to the survey during its open period from July 25 to October 6, 2016.

This survey collected information about a number of aspects related to walking and biking in our community:

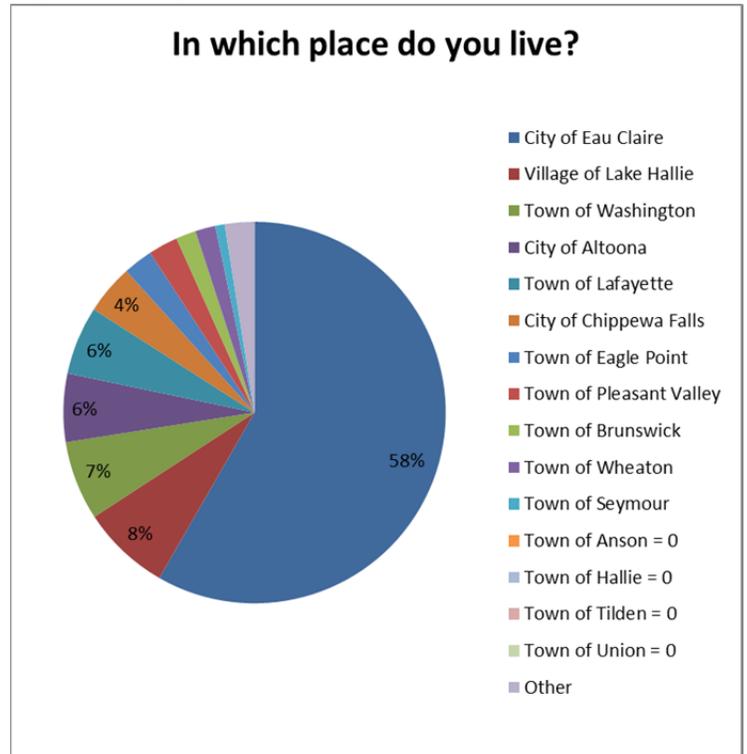
- Who Walks and Bikes
  - Demographics
  - Type of Bicycling
- Why People Walk and Bike
  - Purpose
  - Like Walking and Biking
  - Destinations
  - Frequency
  - Desire to Walk/Bike
- What Could be Improved
  - Difficulties
  - Recommendations
- Children
- Government Priorities

### Who Walks and Bikes

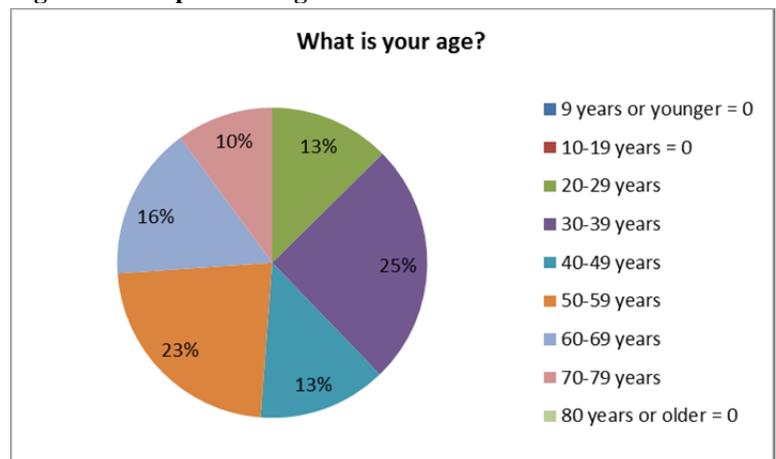
With respect to gender, 58% of respondents were male and 42% were female.

In terms of race/ethnicity, over 95% of respondents were white. The others were Asian or African American.

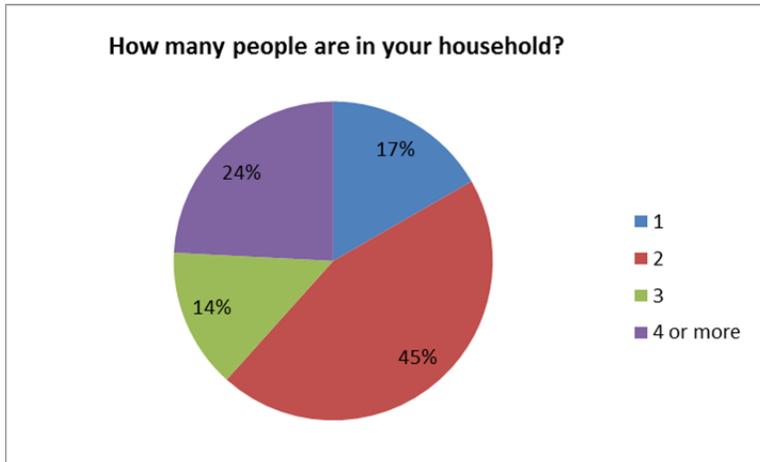
**Figure 62: Respondent Residence Chart**



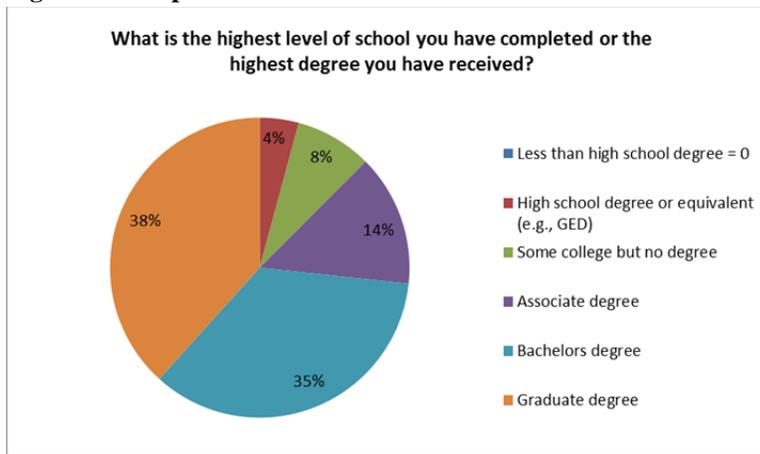
**Figure 63: Respondent Age Chart**



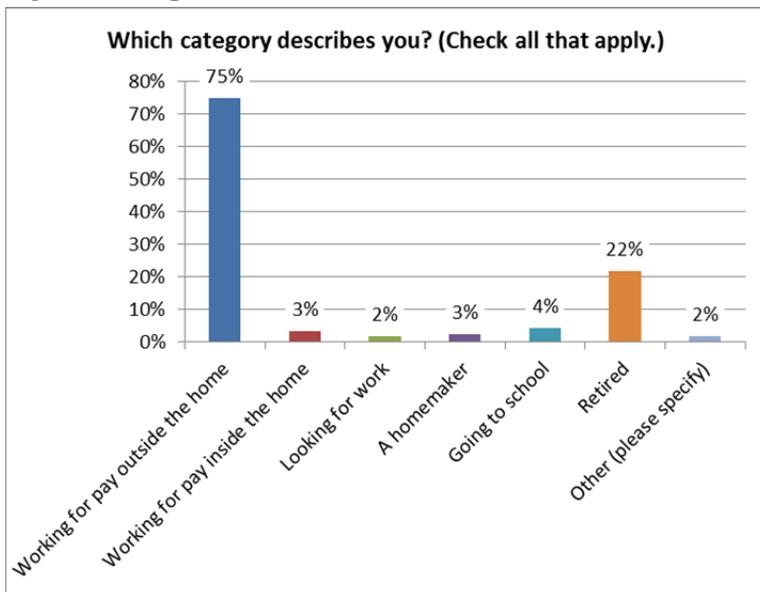
**Figure 64: Respondent Household Size Chart**



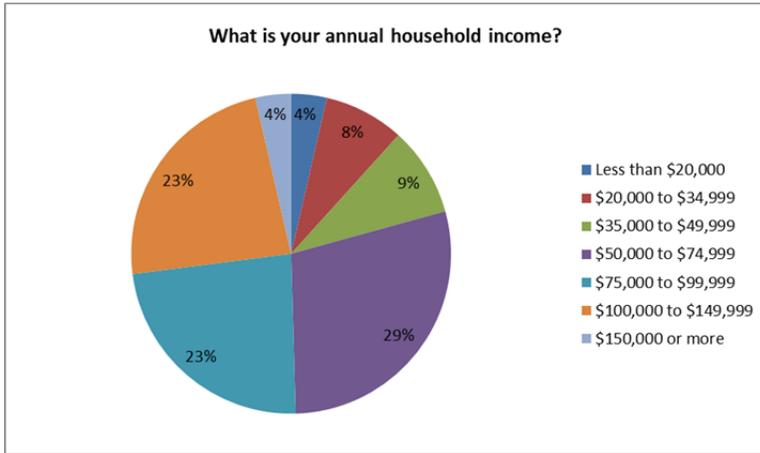
**Figure 65: Respondent Education Chart**



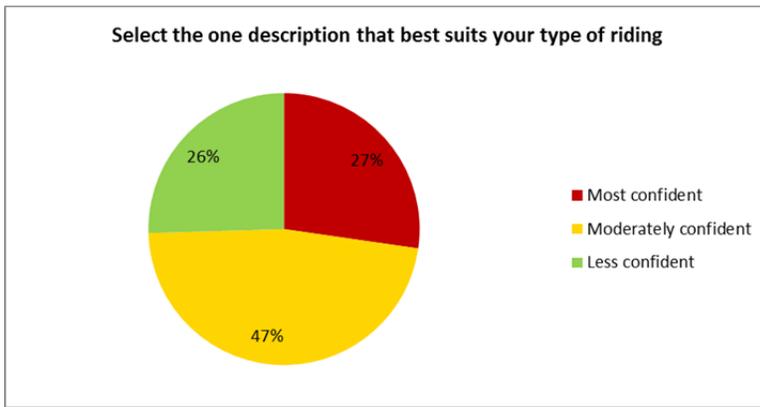
**Figure 66: Respondent Work Status Chart**



**Figure 67: Respondent Income Chart**



**Figure 68: Respondent Riding Confidence Chart**

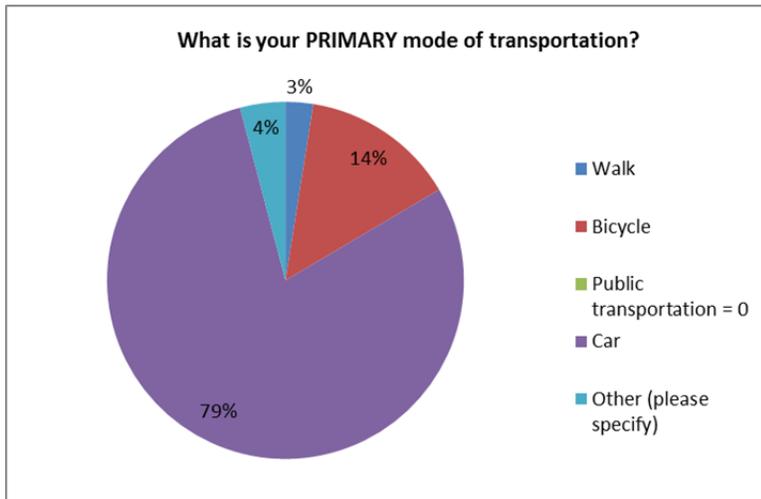


**Why People Walk and Bike**

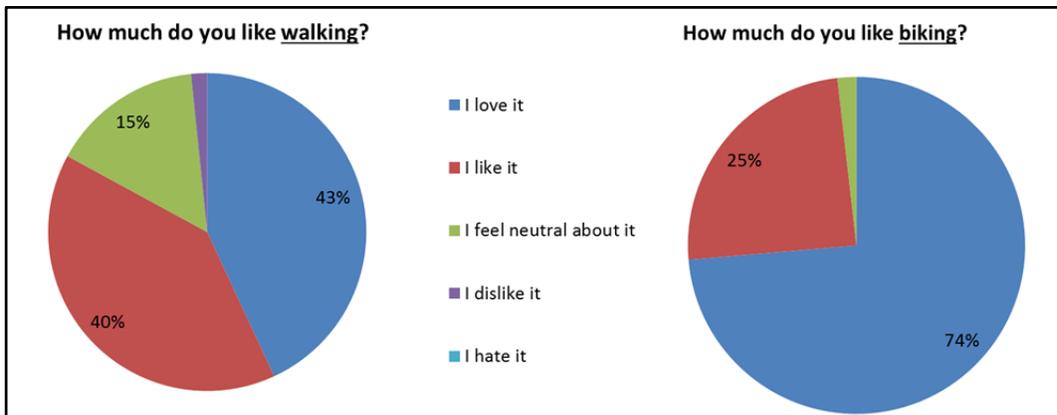
**Figure 69: Respondent Walk/Bike Purpose Chart**



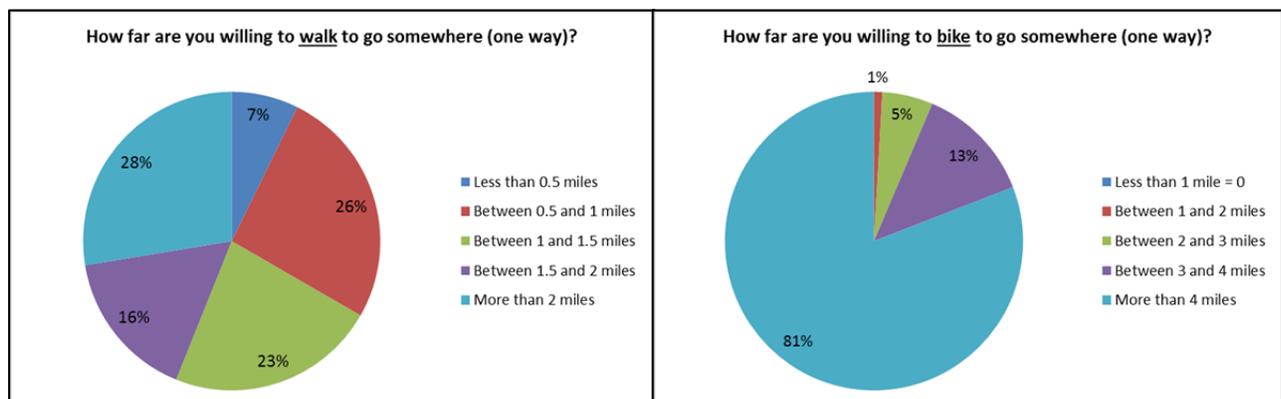
**Figure 70: Respondent Primary Mode of Transportation Chart**



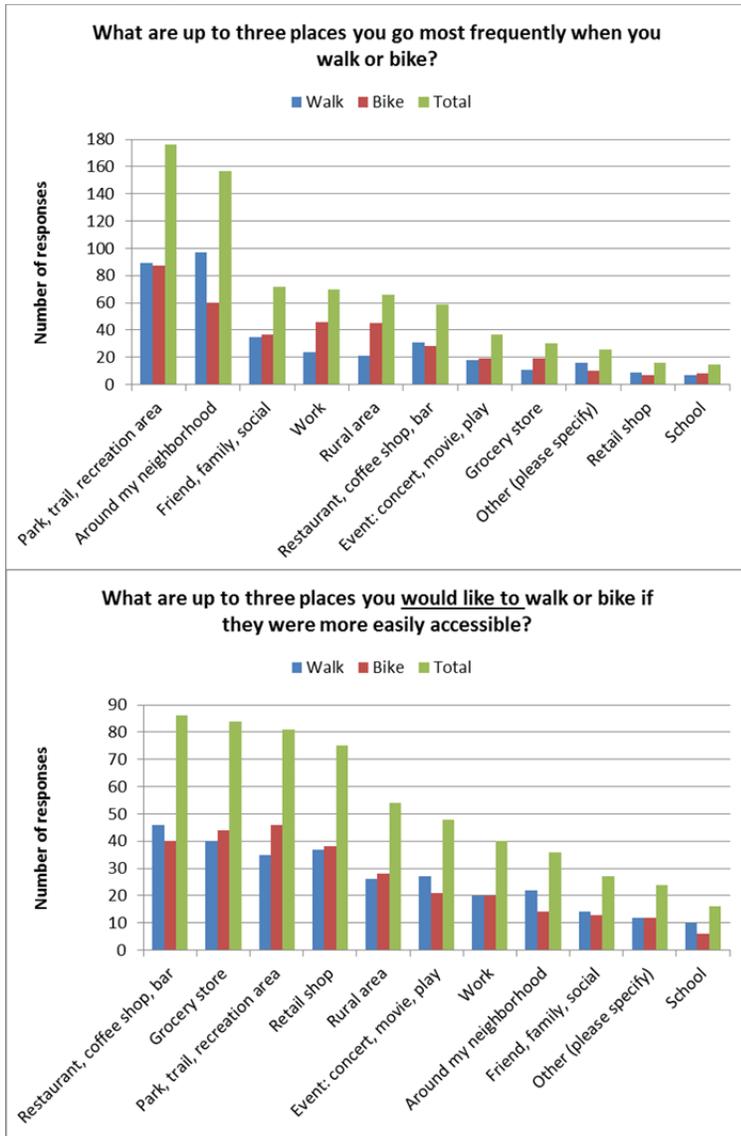
**Figure 71: Respondent Like of Walking/Biking Charts**



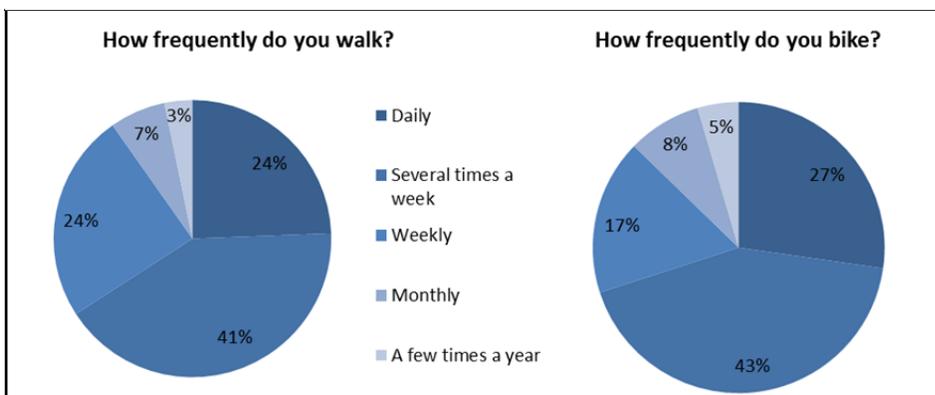
**Figure 72: Respondent Distance to Walk/Bike Charts**



**Figure 73: Respondent Destinations Charts**

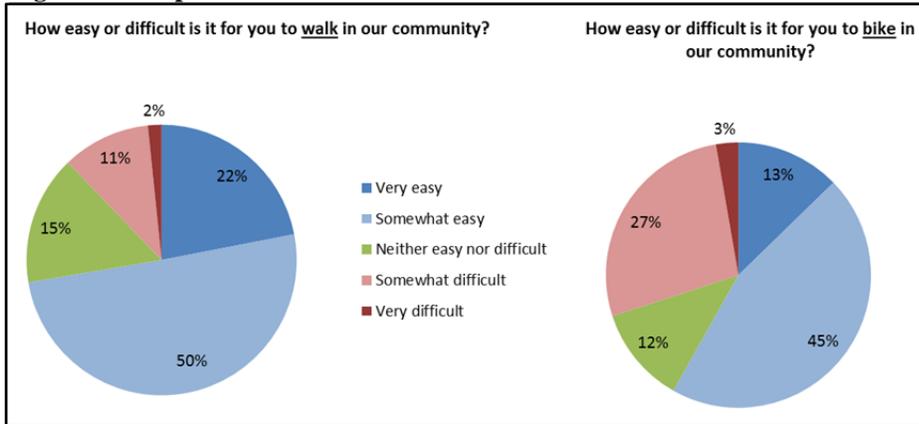


**Figure 74: Respondent Walk/Bike Frequency Charts**

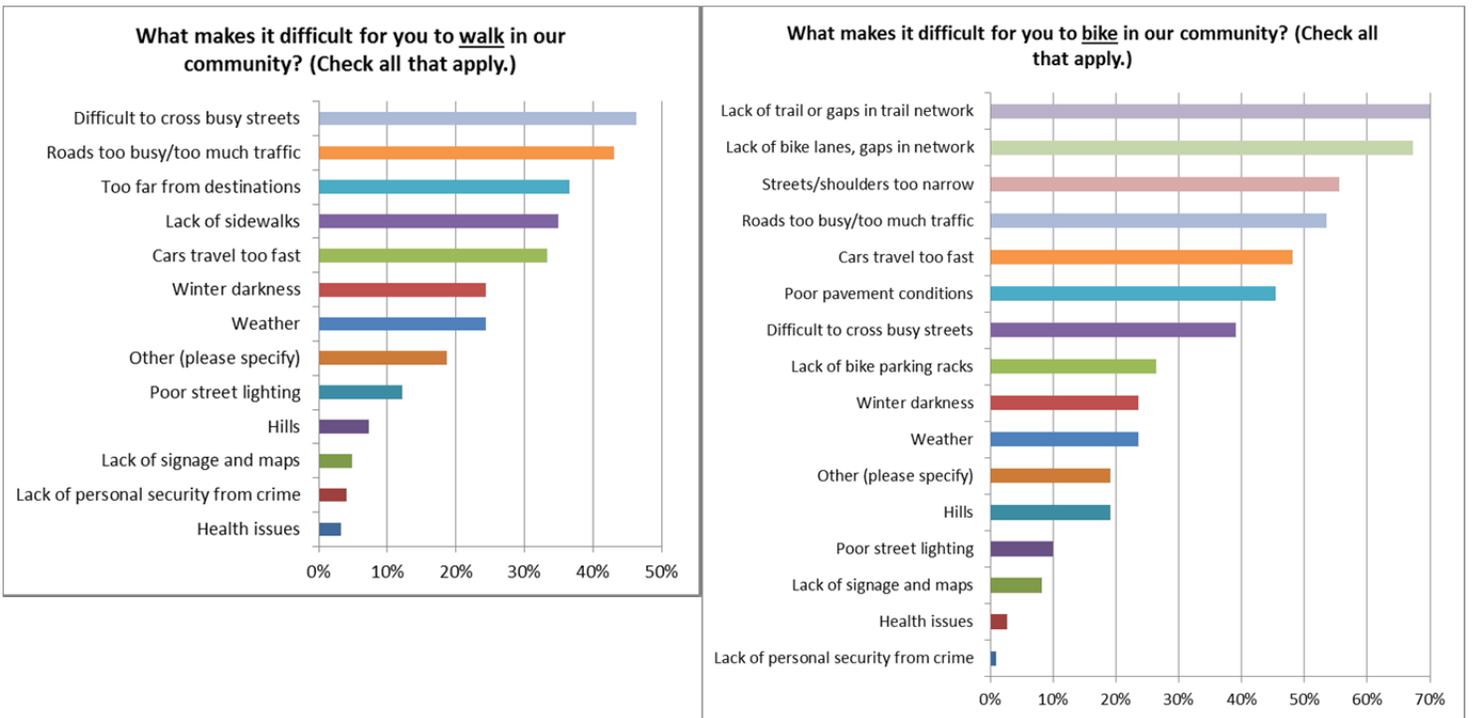


## What Could Be Improved

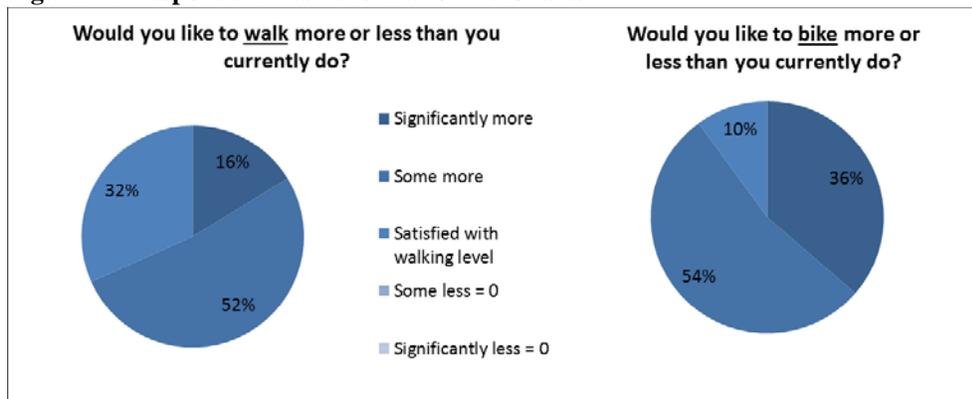
**Figure 75: Respondent Ease of Walk/Bike Charts**



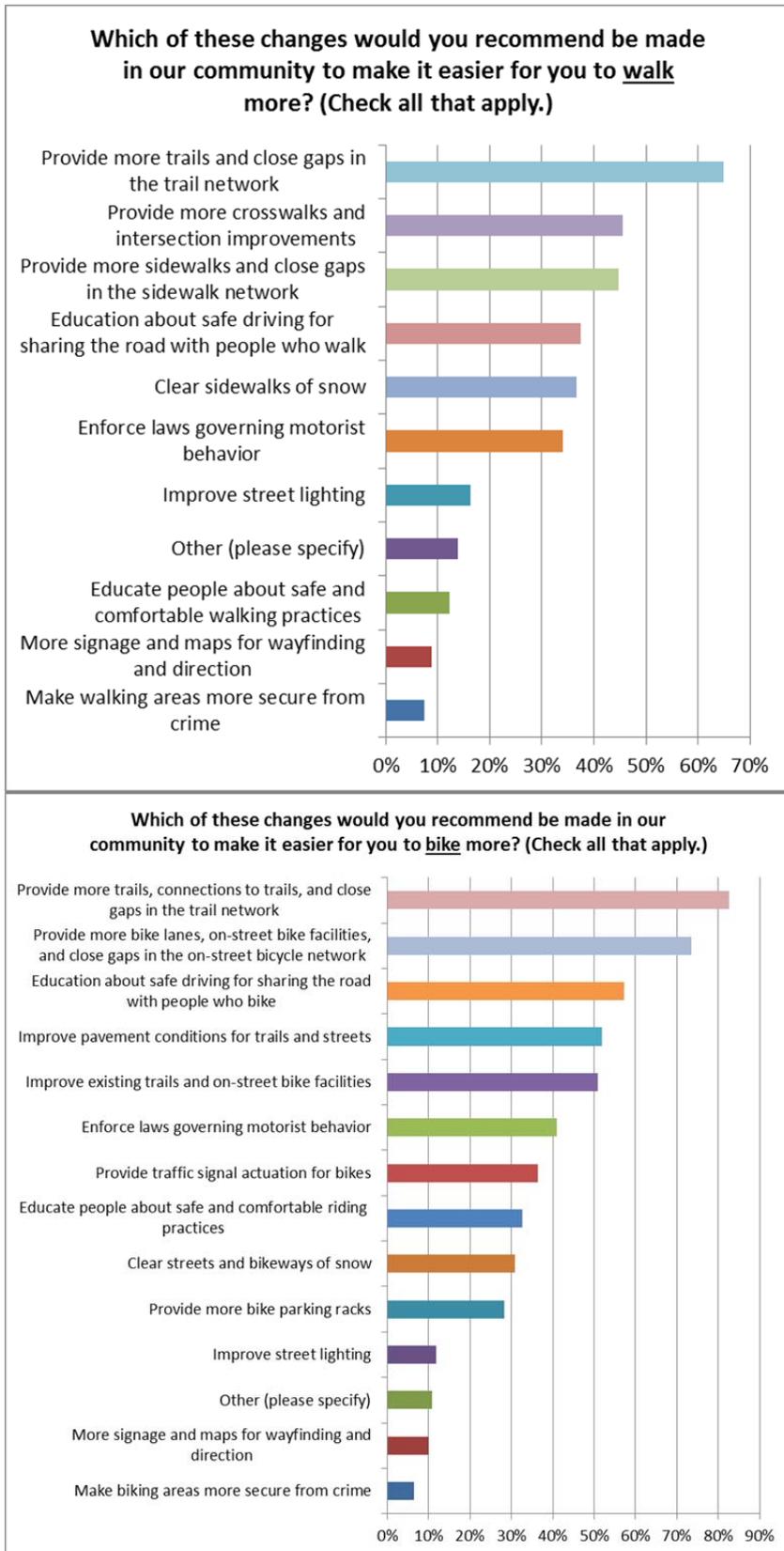
**Figure 76: Respondent Difficult Walk/Bike Factors Charts**



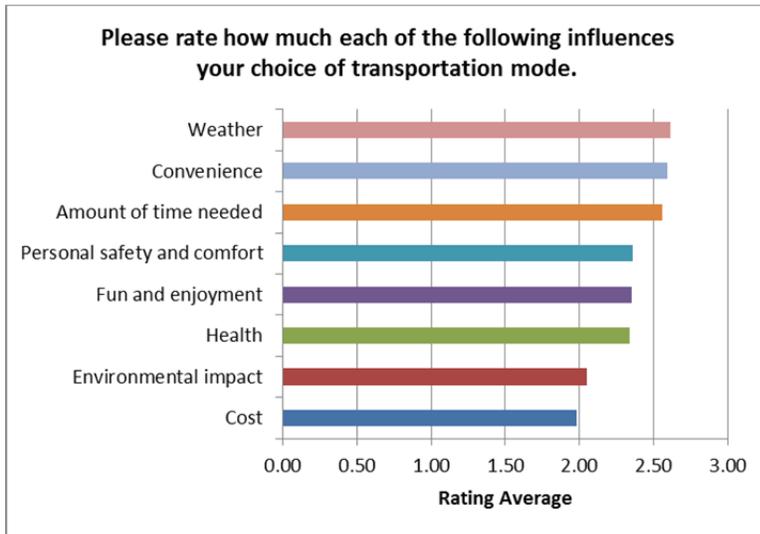
**Figure 77: Respondent Desire to Walk/Bike Charts**



**Figure 78: Respondent Walk/Bike Recommendations Charts**

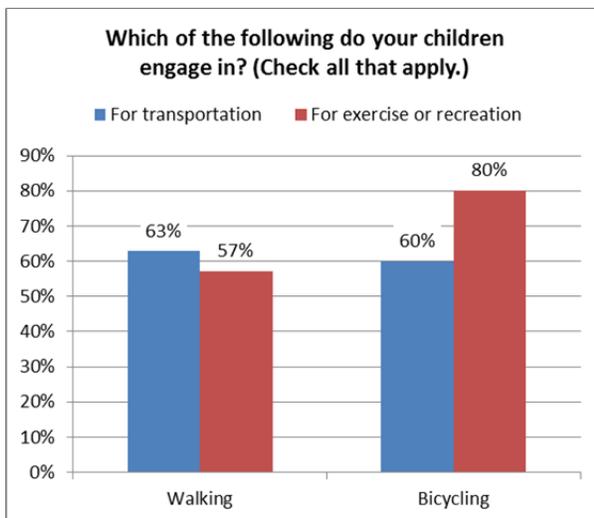


**Figure 79: Respondent Transportation Mode Factors Chart**

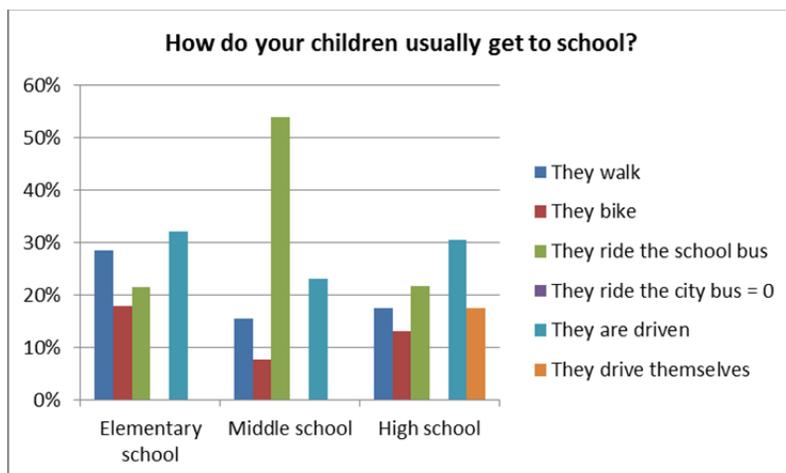


**Children**

**Figure 81: Respondent Children Walk/Bike Chart**

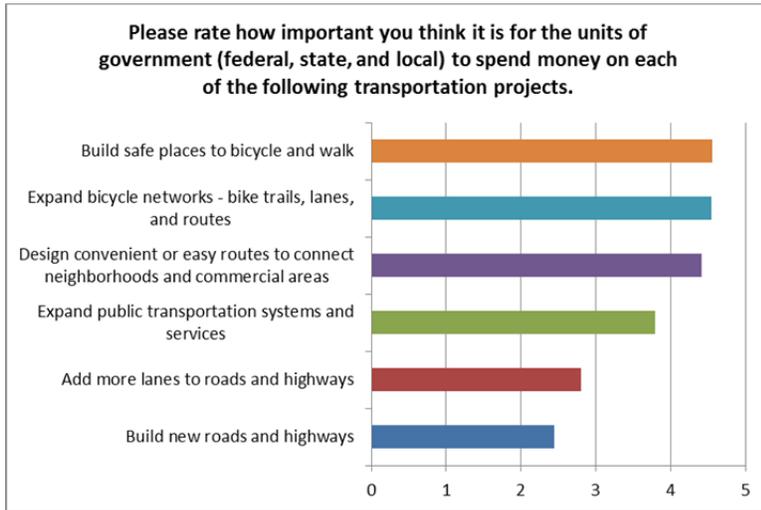


**Figure 80: Respondent Children School Travel Chart**

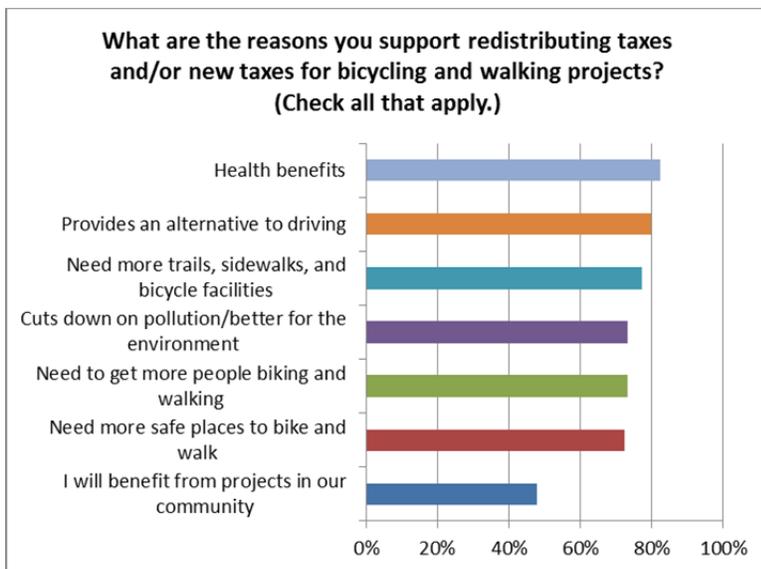


## Government Priorities

**Figure 82: Respondent Government Priorities Chart (average rating)**



**Figure 83: Respondent Support for Walk/Bike Projects Chart**

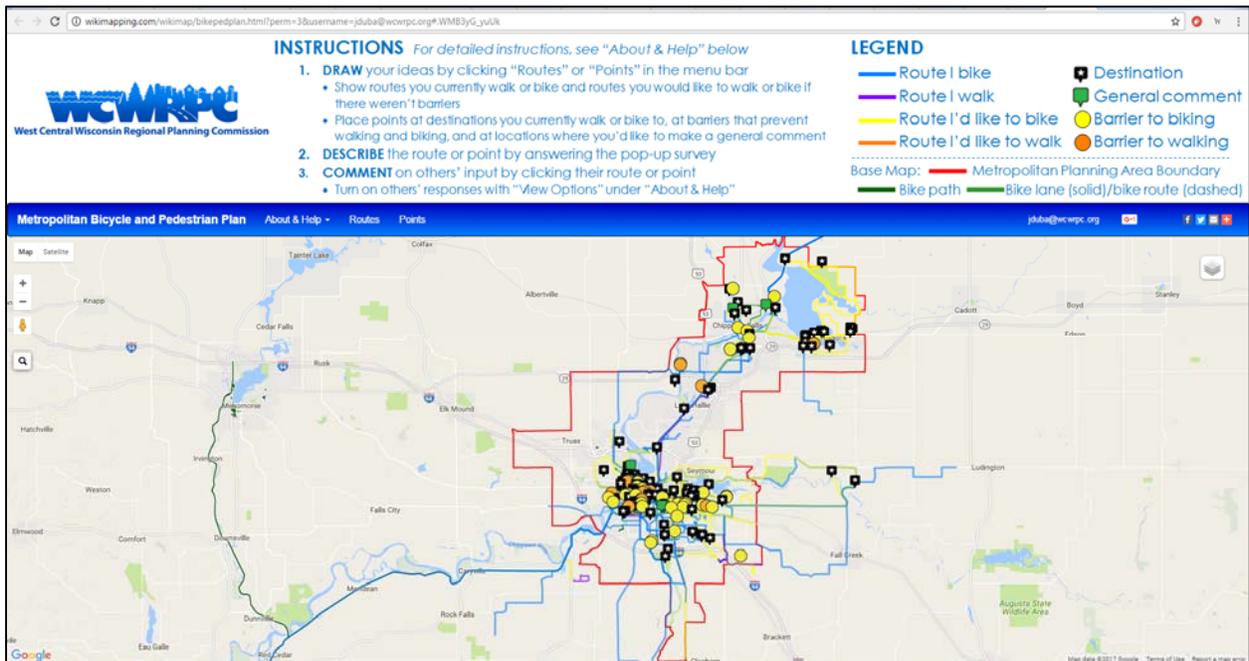


## WikiMap

As part of the public engagement process, community members were encouraged to participate in the online, interactive mapping tool WikiMap. The WikiMap set up for this project was designed for participants to share geographic information about where they walk and bike on the one hand and barriers that prevent them from walking or biking on the other hand. The program allowed users to plot:

- Routes they walk or bike and destinations they access
- Routes or connections they would like to walk or bike if it were easier and barriers that get in the way

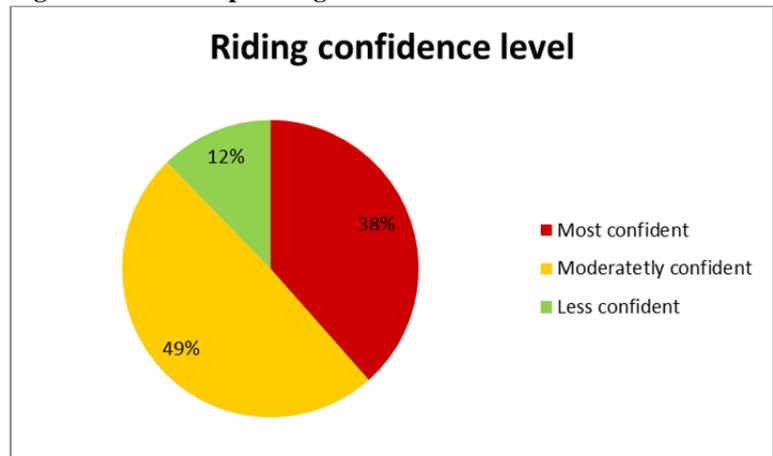
**Figure 84: WikiMap Screenshot**



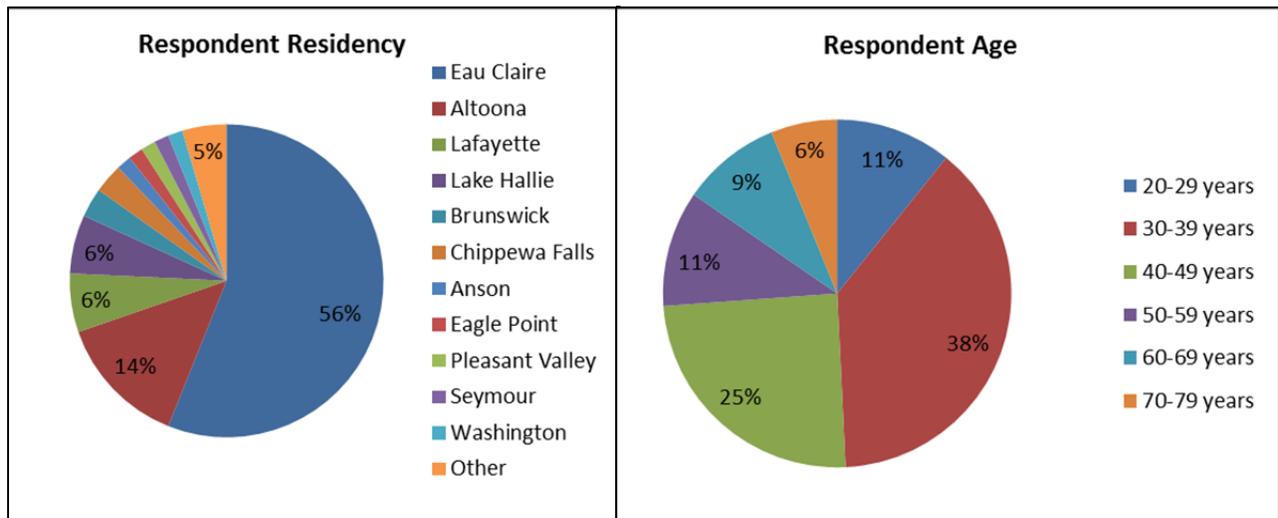
The objective for gathering this input was to learn more about where members of the community walk and bike now and how to improve walking and biking conditions in the future.

The WikiMap engaged 69 participants. They were given a brief survey before working on the map. It asked the following demographic questions and asked about their bicycle riding confidence level.

**Figure 85: WikiMap Riding Confidence Level Chart**



**Figure 86: WikiMap Residency, Age Charts**

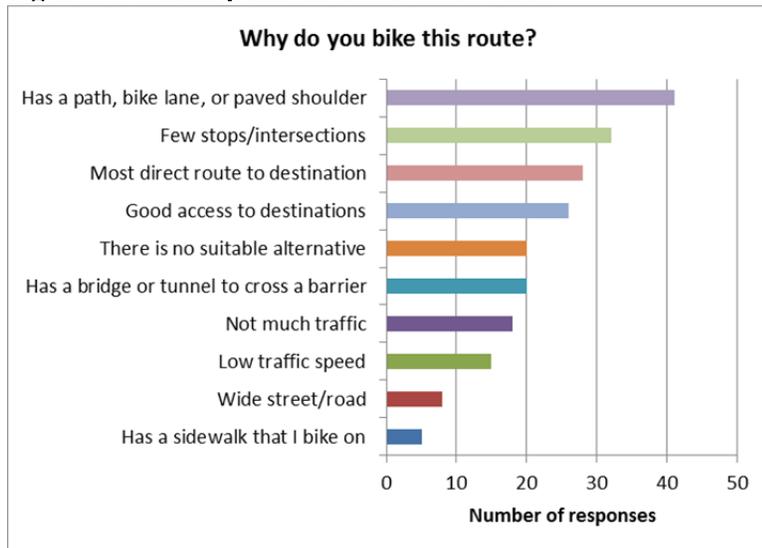


With respect to gender, 83% of respondents were male, and 17% were female.

**Current Routes and Destinations**

Respondents identified 79 routes they currently like to bike. The participants identified the following reasons they rode those routes through the corresponding survey box.

**Figure 87: WikiMap Bike Routes Factors Chart**



Respondents most frequently used the area’s paved trail system. Both for travel within a community and between communities, these trails provided routes for most of the WikiMap users. In addition, a number of the on-street routes connected to a trail or came off a trail.

Respondents also used major streets that do not have trails or bike lanes. Of the routes respondents chose because “There is no suitable alternative,” 90% of them did not have a path, bike lane, or paved shoulder. Most of these are major streets such as:

- Eau Claire: State Street, Harding Avenue, Brackett Avenue, Lake Street, Golf Road, Graham Avenue, and Farwell Street
- Chippewa Falls: Bay Street, Main Street, and Woodward Avenue
- Lake Hallie: 40<sup>th</sup> Avenue and County Highway P
- Altoona: Spooner Avenue and Bartlett Avenue

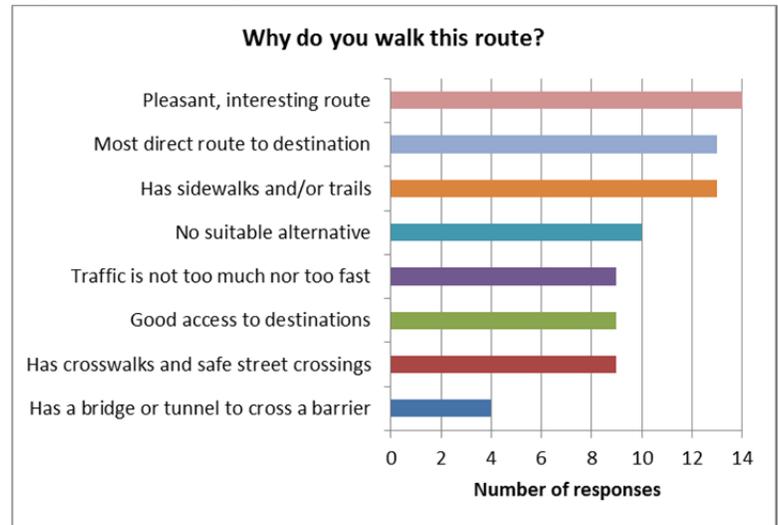
Other respondents used minor streets or side streets that paralleled major streets, likely to avoid these higher-stress streets.

Respondents identified 23 routes they currently like to walk. The participants identified the following reasons they walk those routes through the corresponding survey box.

The majority of current walking routes that respondents prefer were located in central Eau Claire:

- Downtown: Barstow Street, Main Street, Phoenix Park
- In and around University of Wisconsin-Eau Claire: Campus, Water Street, Third Ward Neighborhood, State Street, Shopko

**Figure 88: WikiMap Walk Route Factors Chart**



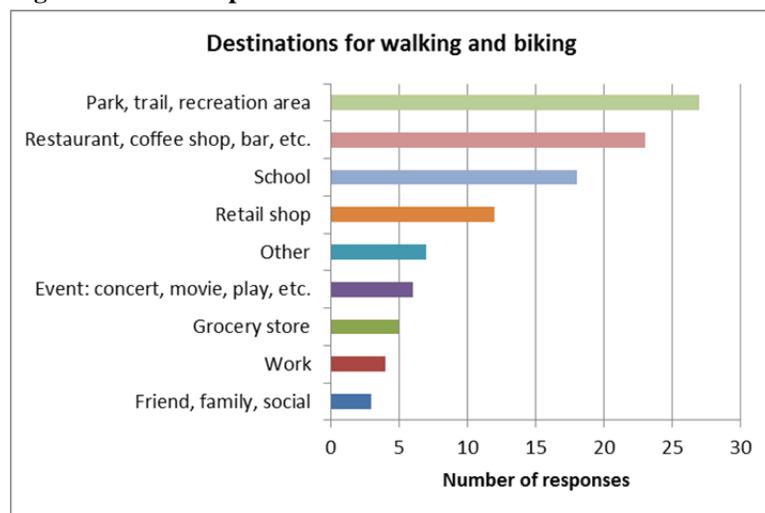
Respondents prefer several routes in Altoona, as well, both on trails and on sidewalks. Several routes went north from Eau Claire on the trail through Lake Hallie.

Respondents identified 106 destinations to which they currently walk or bike, and they are categorized in the following chart.

Destination points were most concentrated in Downtown Eau Claire. The area around the south end of Lake Wissota, in the Town of Lafayette, had 13 points. Eleven points were included in Altoona.

A wide variety of specific destinations were identified on the map.

**Figure 89: WikiMap Destinations Chart**



- Twenty-seven parks were included, from Lake Wissota State Park on the north to Lowes Creek County Park in the south.
- Twenty-three restaurants, coffee shops, bars, etc. were identified, most of which were in Downtown Eau Claire; however, they went as far north as The Edge on Lake Wissota.
- Eighteen schools were included from elementary to post-secondary level.
- Twelve retail areas were identified from the Oakwood Mall to Shopko.
- The Farmers' Market was the most-often cited destination.
- Several institutions like libraries, City Hall, museums, and churches were included.

## Desired Routes and Barriers that Prevent Access

Respondents identified 60 routes they would like to bike if they were safer as well as 43 barriers to biking.

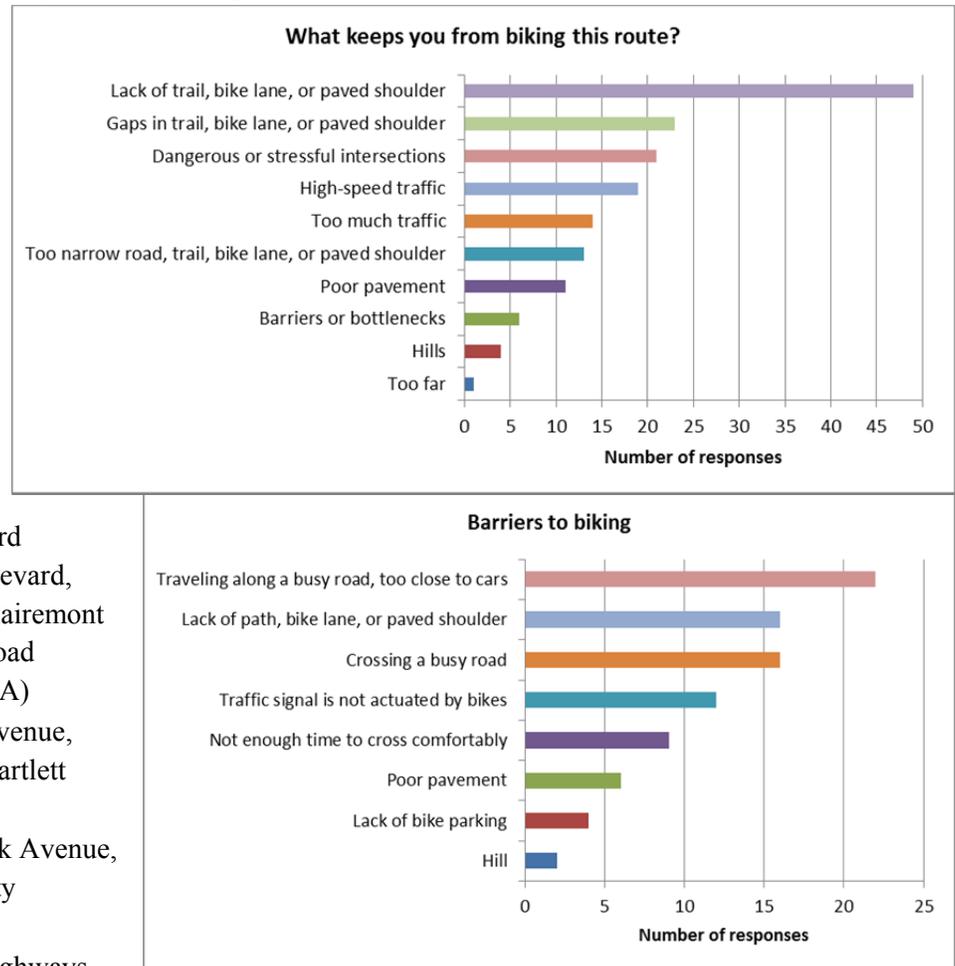
Routes people would like to bike if they were safer include arterial and collector streets that provide good access to destinations, such as:

- Eau Claire: Farwell Street, Harding Avenue, Madison Street, London Road, Brackett Avenue, Margaret Street, Rudolph Road, Lake Street, N Oxford Avenue, Truax Boulevard, Golf Road, North Clairemont Avenue, and Prill Road (County Highway AA)
- Altoona: Spooner Avenue, 10<sup>th</sup> Street W, and Bartlett Avenue
- Chippewa Falls: Park Avenue, Bridge Street, County Highway J
- Numerous county highways and Town roads south and east of Lake Wissota
- Rural routes: S Lowes Creek Road, Old Town Hall Road, Hobbs Road, Otter Creek Road, Tower Drive (County Highway Q), North Shore Drive (County Highway QQ), County Highway KB, County Highway SS, County Highway K

Several routes were included that do not currently exist but have received some extent of planning:

- The route along the trail gap between Lake Hallie and Chippewa Falls – parallel to STH 124 and Park Avenue – which has received funding to be constructed
- A trail along an old railroad grade in the West Riverside and Upper Westside Neighborhoods of Eau Claire
- Trails along Otter Creek in Altoona
- The “Gateway Drive extension” between Eau Claire and Altoona over Otter Creek
- Highway 93 trail south of its current terminus

**Figure 90: WikiMap Biking Barriers Charts**



In addition to the response options included with the survey, respondents shared other barriers:

- Lack of bridge or tunnel to cross barrier river or street
- The stairs connecting the Clairemont Avenue trail to the Chippewa River State Trail at the old railroad bridge are not conducive to bicycling
- More bike racks needed on Barstow Street and Water Street
- Some unofficial connections are inadequate
- Lack of curb cut

Some locations were cited numerous times as presenting barriers:

- Clairemont Avenue/US Highway 12: Eleven barrier points along this road from Menomonie Street in Eau Claire to Oak Drive in Altoona
- Central Eau Claire: State Street, Water Street, Lake Street, Farwell Street

Respondents identified six routes they would like to walk if they were safer as well as 16 barriers to walking.

Since there were fewer routes identified here, conclusions are harder to draw. However, Harding Avenue and State Street came up again as being problematic.

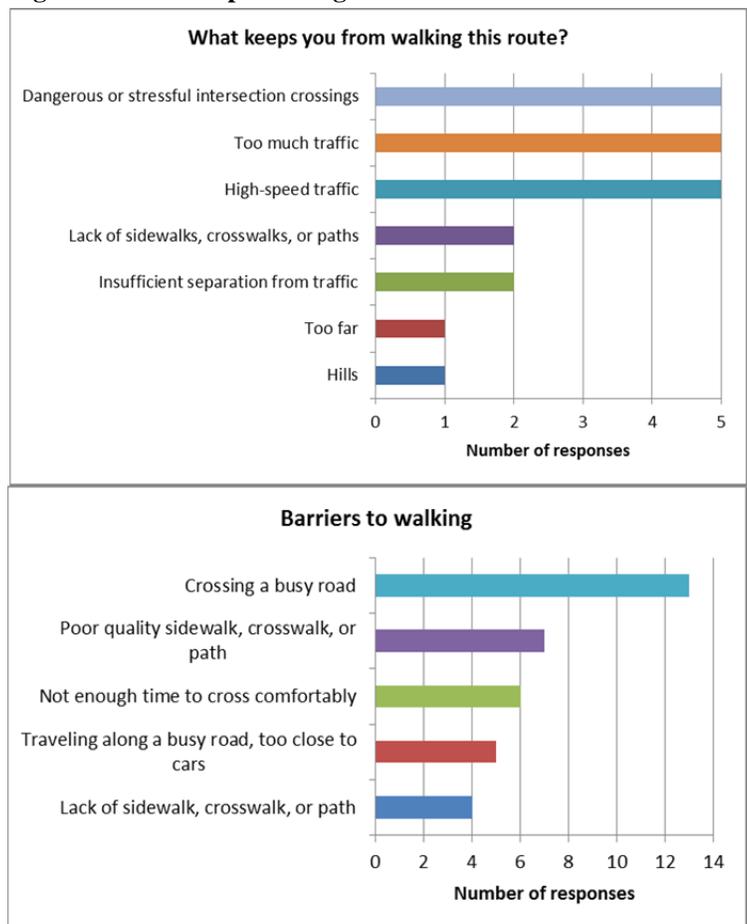
Additional types of barriers included:

- Lack of bridge or tunnel to cross barrier river or street
- Lack of curb cut
- Crosswalks that are ignored
- Lack of lighting

Among the barrier points to walking were several streets already identified:

- Central Eau Claire: State Street, Farwell Street, Harding Avenue, Washington Street
- Clairemont Avenue/US Highway 12: in Eau Claire and Altoona

**Figure 91: WikiMap Walking Barriers Chart**



## Parks, Recreation, and Trails Surveys

The City of Eau Claire completed its Parks, Recreation, and Forestry Community Survey in August 2016. The survey is conducted every five years to help the Parks, Recreation, and Forestry Department evaluate its performance and readjust its priorities. The results of this survey are relevant to this plan because it asked respondents about trails and bikeways. The overall results for the sample of 889 households have a margin of error of +/-3.3% at the 95% level of confidence.

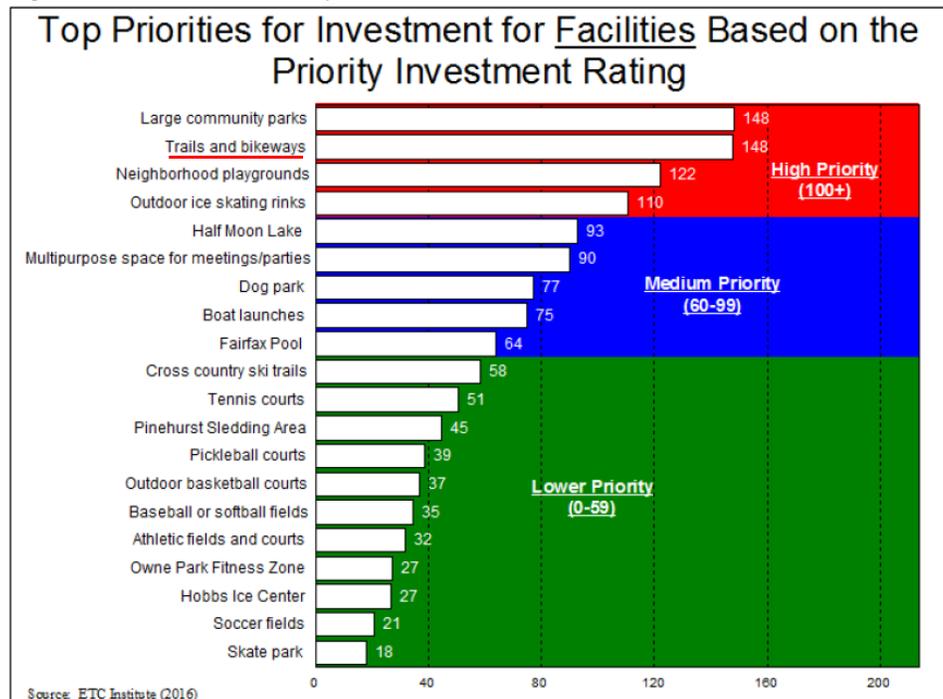
The three recreation facilities with the highest percentage of positive responses were: large community parks (78%), trails and bikeways (63%), and the Fairfax Pool (41%). It was estimated that 2,045 households had unmet needs with respect to trails and bikeways. Based on the sum of respondents' top four choices, the three most important facilities to residents were: large community parks (65%), trails and bikeways (50%), and neighborhood playgrounds (30%).

The company that completed the survey has developed the Priority Investment Rating (PIR) to provide organizations with an objective tool for evaluating the priority that should be placed on Parks, Recreation and Forestry investments. The Priority Investment Rating (PIR) equally weights (1) the importance that residents place on facilities and (2) how many residents have unmet needs for certain facilities. Figure 92 shows the Priority Investment Rating for Eau Claire:

This rating shows trails and bikeways as tied for the highest priority. As a result, the City of Eau Claire can easily justify increasing its investment in the City's trails and bikeways.

The survey also asked respondents about their program priorities, such as sports leagues and fitness classes. Response options did not include bicycle instruction as an option, which means there are currently no such options within the parks and recreation offerings.

Figure 92: Eau Claire Survey Chart



The City of Chippewa Falls also addressed recreational trail improvements in its *Outdoor Park & Recreation Plan, 2013-2018*. The plan cites a 1999 Community Opinion survey, according to which, an improved recreational trail system for biking, hiking, and walking is one of the highest recreational priorities in Chippewa Falls. This plan sets the goal that, “overall, the combination of street right-of way

and off-street trails should provide a system that allows community residents and visitors the opportunity to utilize alternative modes of transportation in the City.” This Outdoor Park & Recreation Plan and other planning efforts in recent years have advanced trails and bikeways in Chippewa Falls, so the City has shown that it can continue to develop on-street bikeways and off-street trails into a citywide network.

The *Chippewa Falls Outdoor Park & Recreation Plan, 2013-2018* also points to the Wisconsin Department of Natural Resources’ *Statewide Comprehensive Outdoor Recreation Plan (SCORP), 2011-2016*. This study concluded that 87.7% of Wisconsin residents “walk for pleasure” and 48.7% bicycle, making these activities very important components of the local recreational mix and providing support for investments in these areas.

**The City of Altoona** is developing its first *Parks, Recreation & Trails Master Plan*. The creation and approval of this document will serve a dual purpose as (1) the municipal parks & recreation master plan, and (2) the bicycle and pedestrian plan. In developing this plan, the City aims to functionally and seamlessly integrate two commonly independent planning approaches into a “single system” perspective. Trails will be included as a core feature of both parks/recreation as well as transportation and connectivity. The Planning Department will lead what is intended to be a multi-disciplinary project that recognizes parks, recreation programs, and bikeability/walkability as force multipliers with value beyond a single use. The Plan is intended to focus on a five- to ten-year implementation period with additional long-term direction into the future. The Parks, Recreation & Trails Master Planning Process is intended to complement and lead into an update of the Altoona Comprehensive Plan.

The City received 386 responses to a community survey about parks, recreation, and trails. The two most frequently used amenities were walking paths and paved bicycling trails. The activities most often engaged in were walking/hiking and biking. Paved bike trails were rated as the number one priority to consider in the long range planning of parks and open spaces. Specifically, respondents emphasized the importance of connecting parks and schools with paved bike paths, and they stated that new developments should feature trails. Respondents valued trails for the benefit they provide to economic development and sustainability objectives. These responses indicate how important walking and biking are to the residents of Altoona and that demand for more facilities and connections is high.

This support for walking and biking in the context of parks, recreation, and trails in the cities of Eau Claire, Chippewa Falls, and Altoona shows how important well-connected, safe walking and biking facilities are for exercise and enjoyment. Trails that are built for recreation in cities also serve useful transportation purposes. The challenge lies in developing support for on-street bicycle facilities when the primary focus is on recreational trails. Ideally, trail construction and use would foster more transportation and encourage development of bike lanes to meet transportation needs.

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## **APPENDIX D – BICYCLE DESIGN GUIDELINES**

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## 1 Introduction

This document was prepared in collaboration with the Chippewa – Eau Claire Metropolitan Planning Organization to supplement the Bicycle and Pedestrian Plan for the Chippewa-Eau Claire Metropolitan Planning Area. These guidelines are meant to be used as a tool to aide in the design of future bicycle facility projects in the Chippewa – Eau Claire Metropolitan Planning Area. This tool does not override applicable state and federal regulations, but it serves to organize and summarize information to assist in creating a cohesive network of bicycle facilities in the region. References to state and federal design regulations as well as sources used for creating this document are included in Section 7 (pages D-19 and D-20).

Bicycling is becoming an increasingly popular form of transportation both within the Chippewa – Eau Claire Metropolitan Planning Area as well as around the nation. Except where legally prohibited, bicyclists should be considered when designing all roadways. Providing safe, accessible bicycle facilities has the potential to decrease roadway congestion and vehicle emissions while simultaneously increasing community health.

Note: Some of the language used in this document is similar, if not identical to, language used in the American Association of State Highway and Transportation Officials (AASHTO) and/or Wisconsin Department of Transportation (WisDOT) guides referenced in Section 7. This was done to ensure full compliance and consistency with these standards.



## 2 Design User

Bicyclists come in all shapes, sizes, and levels of ability – from young, inexperienced children, to recreational users, to experienced commuters that are comfortable riding amongst heavy traffic. These differences result in both different physical dimensions of the bicycle as well as different requirements for rider comfort and safety. Though it is important to recognize and accommodate all users, a standard design bicyclist must be created for consistency in facility design.

### 2.1 Design Width

Recommended design widths are based on the critical physical dimensions of upright adult bicyclists, as shown in Figure 2.1.

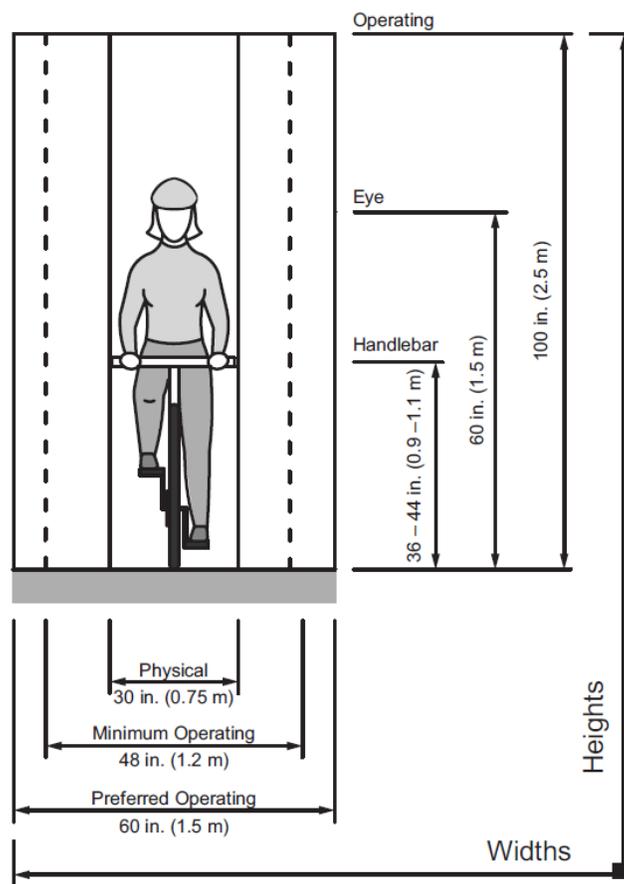


FIGURE 2.1: TYPICAL BICYCLIST WIDTHS FOR DESIGN PURPOSES. (SOURCE: AASHTO 2012)

A typical handlebar width of 30” results in a minimum operating width of 48”, though 60” is preferable for user comfort. This is especially important to consider when riders are adjacent to fixed objects such as a curb or live traffic. See Section 4: On-Road Facilities for further guidelines on these situations.

## 2.2 Design Length

Though standard bicycles are most frequently used on the roadway, other models such as tandem bicycles or bicycles with trailers must also be considered. This is of particular importance when designing median refuges, curves, or areas where bicyclists may be expected to form a queue. The 85<sup>th</sup> percentile distribution of a variety of bicycle types is shown in Figure 2.2, as recommended by AASHTO.

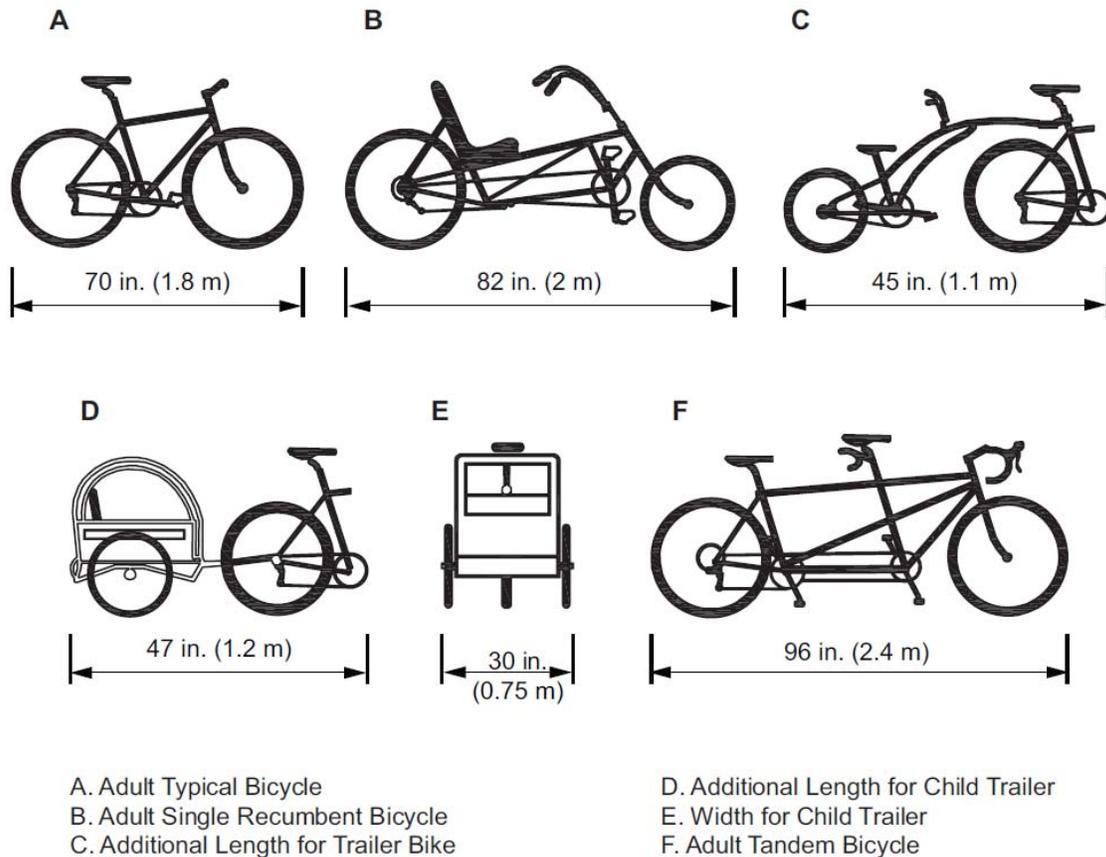


FIGURE 2.2: TYPICAL BICYCLE LENGTH DISTRIBUTION. (SOURCE: AASHTO 2012)

## 3 Shared Use Paths

A shared use path is physically separated from the roadway, though it may or may not exist with the road right-of-way. Due to this separation, shared use paths typically provide the greatest user-comfort and are generally preferred by less experienced bicyclists and for recreational purposes. Generally, shared use paths are exclusively reserved for non-motorized transportation modes, though some may be designated as snowmobile routes during winter periods.

Shared use paths tend to attract a wider range of bicyclists, particularly those who are less experienced such as children. Shared Use Paths are also designed for use by users, in addition to bicyclists, including pedestrians both walking and running, in-line skaters, skateboarders, and scooters. Due to this shared use, facilities (both paths and intersection treatments) must also meet requirements of the Americans with Disabilities Act (ADA) at all times.

## 3.1 Design Purpose

Shared use paths are an extension of the roadway network, intended for non-motorized traffic (with the exception of snowmobiles on select paths). These paths may serve as important links or shortcuts for non-motorized traffic to urban parks or other destinations, as ways to provide access to natural features such as lakes or rivers, as ways to utilize unused land such as abandoned rail corridors, or simply to serve an area with a limited roadway network.

## 3.2 Sidepaths

It is preferred for shared use paths to be designed in independent corridors, though they may also utilize an existing road right-of-way if it is the only corridor available. Paths utilizing an existing right-of-way, typically travelling parallel to an existing road, are known as a sidepaths. Sidepaths are typically only appropriate for use along short sections of roadway. They may also be appropriate for use on longer sections of roadway if there are few driveways and intersections where path crossings will occur.

Care must be taken in sidepath use, as a number of safety concerns are identified with this design. In 2003, it was reported that 29% of bicycle-vehicle collisions in urban areas statewide were related to this facility type.

Most importantly, if the roadway has many intersections or driveways, one direction of bicycle travel will be traveling against the “rules of the road,” or in the opposite direction of the nearest vehicle lanes. Motorists crossing the trail often do not notice bicyclists travelling opposite to the flow of traffic, as it is against driver expectations. Designs shall include accommodations to increase visibility of bicyclists if this facility is used. See Section 5: Intersection Treatments for ways to increase safety and visibility at these locations.



FIGURE 3.2: SIDEPATH ALONG STH 124/  
RUSHMAN DRIVE IN CHIPPEWA FALLS.

## 3.3 Design Standards

### 3.3.1 Cross Section

#### Width

The typical width of a shared use path shall be a minimum of 10' (8' for one-way paths). If high volumes of users or a large mix of user group types – such as recreational bicyclists, commuter bicyclists, and pedestrians – are anticipated, a width of up to 14' may be appropriate. This configuration provides more space for users travelling at different speeds to safely and comfortably pass one another.

Reduced widths up to a minimum of 8' (6' for one-way paths) may be utilized for short distances due to physical constraints such as bridge abutments, utility structures, and fences. Use of this width shall be minimized to the greatest extent practical. The ability for maintenance and emergency vehicles to access paths with reduced widths must be considered to ensure the future safety of users and the useful life of the

path. Warning signs shall be considered at sites with reduced widths, per Manual of Uniform Traffic Control Devices (MUTCD) standards.

**Horizontal Clearance**

Typical shoulders for shared use paths have a desirable width of 3’. Shoulders shall be clear of any obstacles and have a maximum cross-slope of 6H:1V. Shoulder width may be reduced to 2’ minimum where a 3’ width is not practicable.

The minimum horizontal clearance to steep drop offs is 5’. Table 3.3.1 lists conditions that qualify as steep drop offs. If this 5’ width is not possible, a physical barrier is required. Engineering judgement shall be utilized to determine the appropriate barrier based on both embankment height and condition as well as the condition of the bottom surface. Physical barriers may consist of dense shrubbery, safety rail, or fencing.

TABLE 3.3.1: DROP OFF CONDITIONS REQUIRING SPECIAL CONSIDERATION.

Slope	Condition
3H:1V or steeper	Embankment height 6’ or greater
3H:1V or steeper	Parallel to body of water or other substantial obstacle
2H:1V or steeper	Embankment height of 4’ or greater
1H:1V or steeper	Embankment height of 1’ or greater

**Cross Slope**

Shared use paths are used by pedestrians as well as bicyclists and are thus subject to Americans with Disabilities Act (ADA) requirements. These requirements state that sidepaths, or paths adjacent to roadways, function as sidewalks and must follow Public Rights-of-Way Guidelines (PROWAG), requiring the cross slope to be less than 2 percent. Paths in independent rights-of-way must be designed according to Advance Notice of Proposed Rulemaking (ANPRM) on Shared Use Paths, which also requires that a cross slope be less than 2 percent.

To accommodate the above-referenced guidelines, all shared use paths shall be designed with a 1.5% cross slope. This allows for slight variations during construction while still meeting the above-referenced standards and also provides adequate drainage off of the path.

Due to the small range of cross slopes available, superelevation of paths at horizontal curves is not necessary. Instead, cross slopes should follow the patterns of the existing ground to minimize impacts to drainage patterns. Typically, finished elevations of shared use paths should match or be slightly above the existing ground elevation. Paths may be crowned in the center or fully sloped in either direction depending on the topography of the area.

*3.3.2 Alignment and Profile Considerations*

**Design Speeds**

Due to the extreme variation in bicyclist types, purposes, and abilities, expected bicyclist speeds can vary significantly. For example, a path through a park may have high numbers of children and leisurely riders

travelling at low speeds, while a path through a business district may have high numbers of commuters travelling at high speeds. Engineers shall consider the expected user types on a given path when selecting a design speed and select a design speed with the fastest common user in mind.

For the majority of paths through flat terrain, a design speed of 18 mph is sufficient. If inclines occur within the path, higher speeds shall be used as design checks. For steep downgrades (> 4% for 500 feet or longer), a design speed of 30 mph is recommended. Due to the mixed use of these facilities, design speeds greater than 30 mph are not recommended.

**Turning Radii**

Turning radii is of critical importance to bicycle facility design. Once bicyclists travel over 9 – 13 mph on average, they become unable to turn the handlebars more than a few degrees to either side. This can negatively impact a user’s ability to navigate radii on downhill grades or at the bottom of hills. One further item to consider when designing turning radii is the degree of lean into the turn that bicyclists are able to successfully negotiate. Bicyclists are able to lean into a turn to help negotiate a sharp curve, unlike motorists. However, few cyclists are comfortable leaning to a degree of over 5-10°. Due to this limitation, turning radii should be designed conservatively. See Table 3.3.2 for minimum radii per design speed.

Many situations where small radius curves are desirable, such as railroad crossings and intersection approaches, are considered Stopping Conditions. These curves are exempt from the minimum radii based on facility design speed shown in Table 3.3.2, as bicyclists will be slowing to a stop rather than travelling at the design speed. These situations shall utilize a minimum radius of 27’.

TABLE 3.3.2: MINIMUM RADII FOR SELECT DESIGN SPEEDS. DATA FROM WISCONSIN BICYCLE FACILITY DESIGN MANUAL. (2004)

Design Speed (mph)	Minimum Radius (ft)
12	27
14	36
16	47
18	60
20	74
25	115
30	166

**Grade**

The maximum grade that shall be used on shared use paths is 5 percent. This may be exceeded in the case of a sidepath along a roadway which exceeds 5 percent grade. In this situation, the grade may be greater than 5 percent but must remain less than or equal to the grade of the roadway.

Because pedestrians may also utilize shared use paths, design is subject to the accessibility guidelines outlined in the ANPRM on Shared Use Paths. It is recognized that physical constraints may restrict the ability of a path to meet this maximum grade. In these situations, the designer shall refer to the US Access Board website ([www.access-board.gov](http://www.access-board.gov)) for the latest information regarding accessibility requirements.

Alternatives to mitigate the effects of steep grades include:

- Increase design speeds
- Add an additional 4 – 6-foot width to provide more space for user speed differentials
- Add warning signs per MUTCD
- Extend horizontal clearances and/or add railings
- Provide resting intervals with flatter grades

### **Stopping Sight Distance**

Stopping distance for bicyclists is not as easily determined as it is for motorists. This is due to varying rider comfort and ability, differences in brake systems, and external factors. External conditions such as wet or icy pavement can drastically reduce a bicyclist's ability to stop. To help minimize the impact of these conditions, adequate sight distance and advanced warning of stop conditions is needed at all such locations.

## **4 On-Road Facilities**

### **4.1 General Considerations**

#### *4.1.1 Traffic Volumes*

Vehicular traffic volumes play a big role in determining the appropriate bicycle facility design. Traffic volumes should not be analyzed in a vacuum. As vehicular speeds increase, the likelihood and severity of injury to bicyclists in vehicle-bicycle incidents increases exponentially. Traffic volumes and speeds should be analyzed in coordination with each other.

Separated bicycle facilities are recommended for roadways with ADT > 3,000. Features including many vertical or horizontal curves or high proportions of heavy vehicles may make the inclusion of bicycle facilities beneficial for lower traffic volumes, as well, particularly if these routes are near existing or proposed bicycle facilities that will have high numbers of expected bicyclists.

#### *4.1.2 Roadway Construction*

During construction of both roadways and shared use paths, bicyclist accommodations must be considered. Where possible, narrowing the vehicle lane width to provide a 4' minimum bicycle lane is the preferred treatment. This will increase safety by both physically separating modes and acting as a traffic calming measure on vehicular traffic. If temporary bicycle lanes are not practicable, shared lane treatments including "Share the Road" signage or temporary Shared Lane Pavement Markings are recommended. Increasing visibility for bicyclists in this way improves safety by alerting vehicles to the anticipated bicycle traffic, and it provides direction for bicyclists as to whether or not they are permitted to enter the construction zone.

#### *4.1.3 Maintenance*

Maintenance of bicycle facilities is of critical importance to ensure that users have access and that safety is preserved. It is important to ensure that resources are available to guarantee future maintenance of the facility during design. This is particularly important in regard to snow removal. Both regular and buffered

bicycle lanes are able to be plowed in conjunction with the roadway, but treatments such as cycle tracks may require use of a different snow removal technique.

Maintenance of pavement markings is also critical to all bicycle facilities. Striping at intersections, bicycle lane symbols, and bicycle lane delineation are all crucial to ensure necessary visibility is given to bicyclists. Before installing these treatments, a plan for future maintenance should be agreed upon.

Also important to the maintenance of bicycle facilities is pavement quality. Bicyclists are more easily impacted by poor quality pavement than vehicles. This problem is particularly a concern in rural transition areas, where the shoulder of the roadway may be utilized as a bike facility and is more susceptible to raveling. Shoulder raveling may cause the usable width of the bicycle facility to decrease with wear. This is further discussed in Section 4.1.4 Rural Transition Areas.

#### *4.1.4 Rural Transition Areas*

The transition areas between urban and rural roadway designations often create conditions that put bicyclists at increased risk. Bicycle accommodations must be considered in these critical areas, though facilities as described in Section 4.2 are often unnecessary. At a minimum, design standards set forth by the Wisconsin Department of Transportation (WisDOT) in the Facilities Development Manual shall be followed for these situations.

Current WisDOT guidelines state that bicycle accommodations shall be considered along rural roadways when design ADT >750 vehicles per day. Bicycle accommodations shall also be considered for ADT <750 if the facility is within one mile of an existing or planned bicycle route or local road or if it would provide a connection of less than 3 miles between urban areas and town/county roadway networks. Accommodations shall also be provided for any corridor identified in relevant local plans as a proposed bicycle route.

Minimum design standards for rural/transition roadways providing a bicycle facility require a 3' paved shoulder. As alluded to in Section 4.1.3, increasing this width up to 5' may be appropriate to ensure longevity of the paved surface and usable width for bicyclists. If the proposed project is part of the Transportation Enhancements or Safe Routes to School programs, the minimum paved shoulder width increases to 5'.

## 4.2 Facility Types

There are a wide variety of on-road facilities in use both across the country and worldwide. On-road facilities that are developed according to these guidelines are summarized in Table 4.2. Each facility type will be discussed in greater detail within this section.

TABLE 4.2: SUMMARY OF ON-ROAD BICYCLE FACILITIES.

Facility Type	Brief Description	Benefits	Disadvantages
Bicycle Boulevard	A low-volume, low-speed neighborhood through street where bicycles may use the full width of the roadway and have priority over vehicles.	Provides bicycle user comfort through use of full width of roadway, and encourages separation of modes as cars are discouraged from these streets.	To be successful, a grid network must be in place so vehicles have an easily accessible alternate route.
Conventional Bike Lane	A designated lane to the outside of traffic lanes for one-directional bicycle traffic.	Separates modes while minimizing total right-of-way required.	Parking lanes and bus stops create potential points of conflict.
Buffered Bike Lane	Similar to a conventional bike lane, but an additional 2-4' of striping separates moving traffic from the bike lane.	Increased bicyclist safety and comfort due to separation from moving vehicles.	Requires more space within the right of way. Parking lanes and bus stops create potential points of conflict.
Separated Bike Lane (aka Protected Bike Lanes, Cycle Tracks)	Function as on-road bike paths. They may be one or two directional.	Provides fully separated facility for bicyclists, increasing user comfort.	Creates additional points of conflict at driveways and side street crossings.
Shared Lane	Where a full-width bicycle lane is not practicable, the outer vehicular lane is made wider and painted with a Shared Lane Marking to indicate both modes may share lane.	Previously recommended when right-of-way was limited but is now only recommended in specific transitory settings.	Shared lanes may create additional conflicts between bicyclists and vehicular traffic.

### 4.2.1 Bicycle Boulevards

#### Description

Bicycle boulevards are a useful designation for a two-lane roadway with very low vehicular traffic volumes, typically through a residential area. Roadway design speeds should be 25 mph or less. Vehicular traffic shall consist of predominantly local traffic, with ADT  $\leq$  750 vehicles per day. In this section, local

traffic refers to residential traffic of the roadway itself. Though any user may access the facility, non-local traffic shall be discouraged from traveling along the corridor through design strategies described below.

Bike boulevards are designed such that bicyclists may utilize the entire roadway, and cars must yield to them. To accomplish this, the roadway must be adequately narrow, thus discouraging cars from passing bicyclists. Vehicular lane widths are preferred to be 9-10' wide with a maximum of 11'.

Bicycle boulevards shall be designated through the painting of the Shared Lane Marking (MUTCD 9C-9), commonly referred to as a “sharrow”, in the center of the travel lane in both directions as well as through the posting of bicycle boulevard signage. Consideration for vehicle calming treatments including speed humps, traffic circles, and narrow lanes is recommended to slow vehicular traffic and encourage the use of alternate routes.

**Design Standards**

<b>Width</b>	Bicyclists may utilize full width of roadway
<b>Pavement Marking</b>	<ul style="list-style-type: none"> <li>• Shared Lane Symbols painted in center of shared lanes (MUTCD 9C-9)</li> <li>• No lane striping between vehicle lanes</li> <li>• Optional parking lane striping</li> </ul>
<b>Signage</b>	Bicycle Boulevard signs

- Example Situations:*
- Neighborhood road parallels collector street
  - Neighborhood utilizes a grid-network and one corridor is chosen as a preferred bicycle route

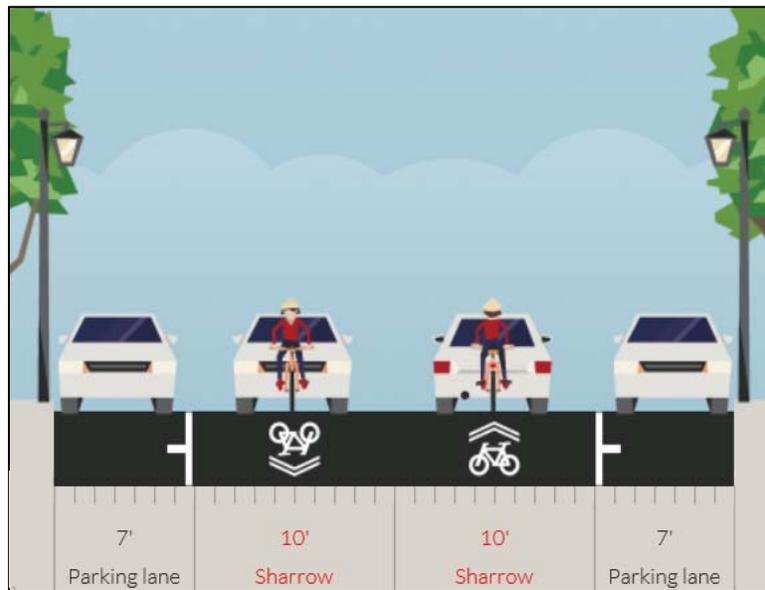


IMAGE 4.2.1: TYPICAL BIKE BOULEVARD CROSS SECTION. NOTE THE LACK OF CENTERLINE STRIPING. (IMAGE SOURCE: STREETMIX.NET)

## 4.2.2 Conventional Bicycle Lanes

### Description

Conventional bicycle lanes are placed on the outer edge of roadways. Bicyclists travel in a single direction, following the flow of vehicular traffic. As mentioned in Section 2.1, the recommended width of these lanes is 5'. This width refers to a usable width rather than total width. If the roadway utilizes integral curb, 1' adjacent to the curb shall be considered unusable, increasing the total minimum width to 6'. Increased widths of 6' are also recommended when the bike lane is adjacent to a parking lane to provide additional user comfort and safety. Narrowing the parking lane is a recommended design solution to accomplish this objective while maintaining the same total roadway width.

A minimum design width of 4' (5' for integral curb) may be utilized throughout narrow spaces including bridges, but use shall be minimized to the maximum extent practicable. Where street parking is allowed on roadways, the bicycle lane shall be placed to the left of the parking lane in the direction of travel. Conventional bike lanes are typically recommended for roads with ADT >3,000 and design speeds of 25-35 mph.

### Design Standards

<b>Width</b>	5' Recommended, 4' Minimum (Usable width)
<b>Pavement Marking</b>	<ul style="list-style-type: none"> <li>• 6" Solid striped lane marking</li> <li>• Helmeted bicyclist pavement marking in center of lane (MUTCD 9C-3B)</li> </ul>
<b>Signage</b>	Bike Route Signs

- Example Situations:*
- Urban corridor with little or no bus service
  - Neighborhood through street with low heavy vehicle use

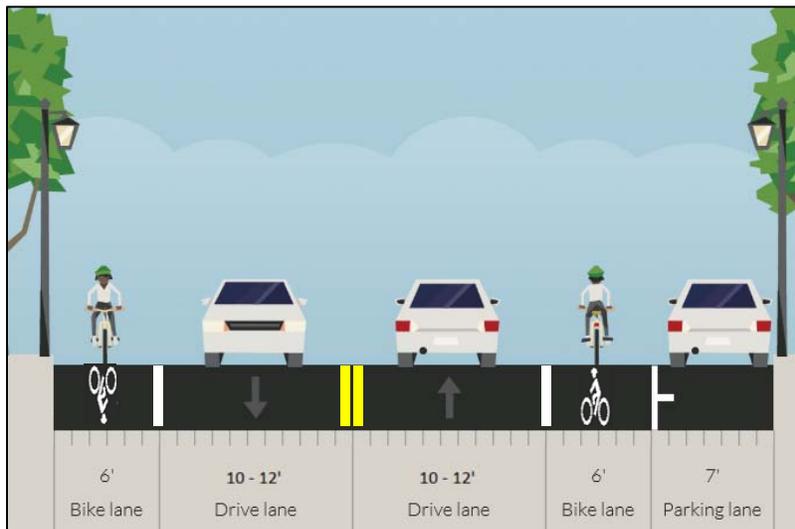


IMAGE 4.2.2: TYPICAL CROSS SECTION UTILIZING CONVENTIONAL BICYCLE LANES. THE ONCOMING BICYCLE LANE UTILIZES A 6-FOOT WIDTH DUE TO INTEGRAL CURB, AND THE OUTGOING LANE UTILIZES 6-FOOT WIDTH TO BETTER ACCOMMODATE THE PARKING LANE. (IMAGE SOURCE: STREETMIX.NET)

### 4.2.3 Buffered Bicycle Lanes

#### Description

Buffered bicycle lanes are similar to the conventional bicycle lanes described in Section 4.2.2, but they provide additional rider safety and comfort by creating a buffer between vehicular traffic and the bicycle lane. This buffer is typically a 2-4' area designated with diagonal striping. A minimum 18" width is also possible, though this would simply be marked with two striped lane markings.

The recommended lane width remains at 5'. The buffered zone may be considered as part of the total width of the bicycle facility. This does not impact the recommended 5' width of the bike lane but does allow for modifications when integral curb is being used. In these situations, the lane edge may be striped 5' from the face of the curb as opposed to the 6' needed for conventional bike lanes.

Buffered bicycle lanes are preferable to conventional bicycle lanes when right-of-way is available, particularly on roadways with high traffic volumes, a high percentage of heavy vehicles, or speeds of 35 mph and above.

#### Design Standards

<b>Width</b>	<ul style="list-style-type: none"> <li>• 5' Recommended (Usable Width)</li> <li>• 2-4' Striped Buffer Zone (18" minimum)</li> </ul>
<b>Pavement Marking</b>	<ul style="list-style-type: none"> <li>• 6" Solid striped lane marking</li> <li>• Diagonally striped buffer zone</li> <li>• Helmeted bicyclist pavement marking in center of lane (MUTCD 9C-3B)</li> </ul>
<b>Signage</b>	Bike Route Signs

- Example Situations:*
- Urban corridor with frequent heavy vehicle use
  - Roads that transition from high to low speed within the urbanized area

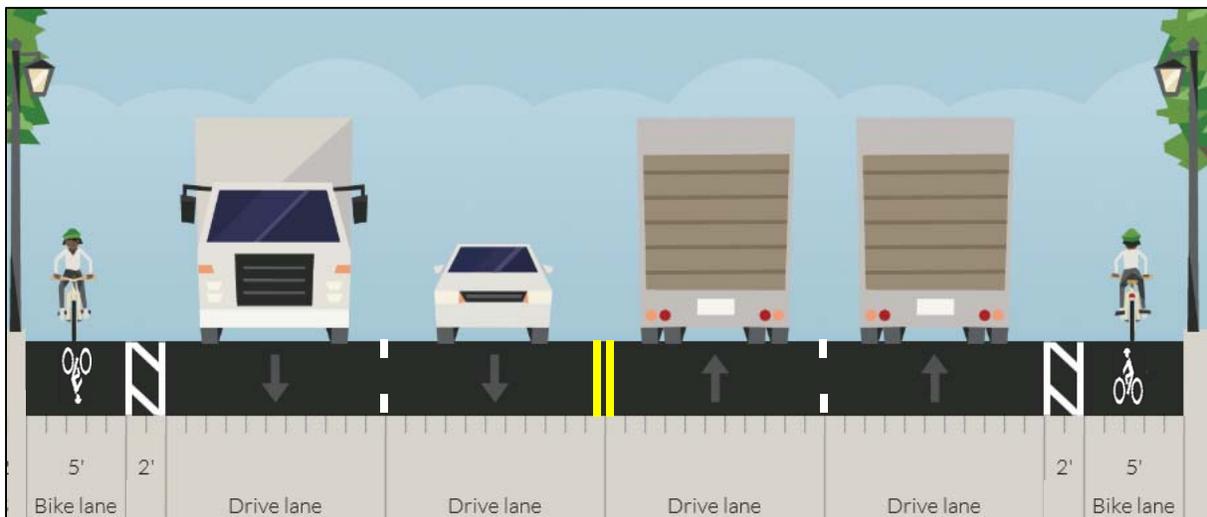


IMAGE 4.2.3: TYPICAL CROSS SECTION WITH BUFFERED BICYCLE LANES. 5-FOOT BICYCLE LANES ARE UTILIZED DUE TO THE INCLUSION OF THE BUFFER ZONE IN TOTAL FACILITY WIDTH. (STREETMIX.NET)

## 4.2.4 Separated Bike Lanes

### Description

Separated bike lanes, also known as protected bike lanes or cycle tracks, function as on-road bicycle trails. They are physically separated from vehicular traffic by a median or bollards; or they may be raised to provide vertical separation. Most often, they are two-way facilities for bicycle-only traffic. Successful separated bike lanes must have separate pedestrian facilities to ensure that pedestrians do not utilize the bicycle facility.

Similar to sidepaths discussed in Section 3.2, care must be taken at driveway openings and side-road crossings to ensure visibility for bicycle traffic, as an additional point of conflict is added to each location where this facility is used. Particular attention is required for two-way facilities, as bicyclists may travel in the direction opposite vehicular traffic flow which is against driver expectations. Additional pavement markings, signage, and/or bicycle signals are recommended to ensure vehicle awareness.

Separated bike lanes shall be 10' in width for two-way facilities (8' for one-way facilities). A minimum width of 8' (6' for one-way facilities) is permitted for short distances due to physical constraints such as bridge parapets but is not recommended for longer distances. Typically, two-way cycle tracks are preferred due to right-of-way restrictions.

Separated bike lanes are designated with bicycle pavement markings in both directions. A dashed center line along two-way facilities is also recommended for the length of the lane. Green pavement marking through intersections helps distinguish these facilities from frontage roads or other vehicular facilities and provides additional visibility and safety to bicyclists.

### Design Standards

<b>Width</b>	<ul style="list-style-type: none"><li>• 10' Recommended (8' Minimum) for two-direction travel lane</li><li>• 8' Recommended (6' Minimum) for one-direction travel lane</li></ul>
<b>Pavement Marking</b>	<ul style="list-style-type: none"><li>• Yellow dashed centerline striping (for two-way facilities)</li><li>• Helmeted bicyclist pavement markings (MUTCD 9C-3B)</li><li>• Green Pavement treatment at intersections</li></ul>
<b>Signage</b>	Bike Route Signs

- Example Situations:*
- *Roadway that parallels river where right of way is limited*
  - *Collector street with many bus stops that would create additional points of conflict if standard bike lanes were utilized*



IMAGE 4.2.4: TYPICAL CROSS SECTION WITH TWO-DIRECTION SEPARATED BIKE LANE.  
 NOTE 6' LANE WIDTHS ARE UTILIZED DUE TO THE USE OF INTEGRAL CURB. (IMAGE  
 SOURCE: STREETMIX.NET)

### 4.2.5 Shared Lanes

#### Description

Shared lanes are wide outside travel lanes that are marked with a Shared Lane Marking symbol, or sharrow, to indicate that both vehicles and bicycles may travel in the lane. However, a recent study from the University of Colorado (2016) indicated that the intended benefits of bicycle facilities may not be realized through shared lanes indicated by sharrow symbols. The study found that the use of sharrows resulted in increased vehicle-bicycle incidents when compared to roadways with no treatment. Agencies that no longer classify wide travel lanes designated with a sharrow symbol as a bicycle facility include The League of American Bicyclists and the National Association of City Transportation Officials (NACTO).

The use of the sharrow is still recommended in specific situations where bicycle and vehicle traffic combine. These uses are outlined below under Design Standards.

The Shared Lane symbol/sharrow is also used to indicate shared use of bicycle boulevards. Bicycle boulevards differ from shared lanes due to lower speeds, lower volumes, and the preferential treatment of bicyclists. Shared facilities on local, neighborhood roads are also permitted, though these facilities are recognized through low speeds and volumes and generally do not include pavement markings.

#### Changes from Previous Design

Shared lanes were previously used when right-of-way was limited and full-width bicycle lanes were not possible. Outer lane widths were typically increased to 14'. These outer lanes were then painted with the Shared Lane symbol. This design is no longer recommended as a facility type.

## Design Standards

This design is no longer recommended as a facility type, but it can be useful to guide bicyclists and alert vehicular drivers to bicyclists in specific situations where the design speed is 35 mph or less. These situations include:

- To clarify and designate the position of bicyclists through intersections
- To fill a short-distance gap in an otherwise continuous bicycle route
- To designate the positioning of bicyclists through combined bike lanes/turn lanes
- On down-hill segments where a bicycle lane is placed in the up-hill direction

<b>Width</b>	N/A
<b>Pavement Marking</b>	Shared Lane Symbol placed in center of lane or center of designated bicycle route (MUTCD 9C-9)
<b>Signage</b>	Bike Route Signs

## 4.3 Pavement Markings

This section summarizes the pavement markings referred to in Sections 4.1 – 4.5. All pavement markings including symbols, words, lane striping, and/or arrows shall meet the requirements set forth in MUTCD Section 9C.

### Shared Lane Marking

The Shared Lane Marking, commonly referred to as a “sharrow”, is detailed in MUTCD 9C-9. Use of this marking is described in Section 4.2.1 Bicycle Boulevards and Section 4.2.5 Shared Lanes.

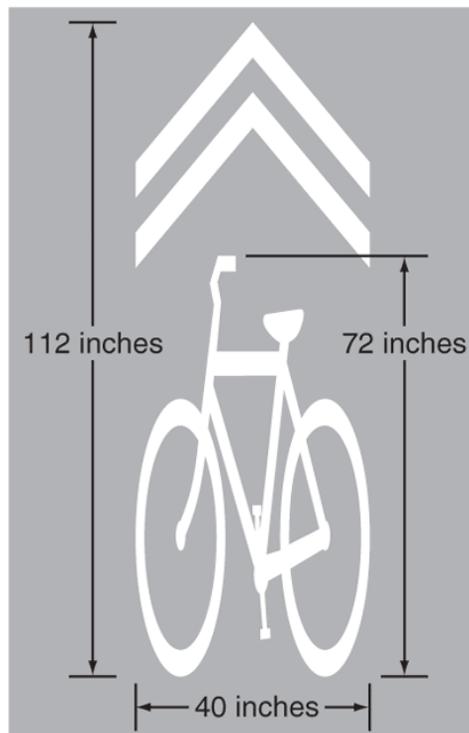


FIGURE 4.3.1: SHARED LANE MARKING. (MUTCD 9C-9)

## Helmeted Bicyclist Symbol

The standard bicycle lane marking utilized within the region shall be the helmeted bicyclist symbol, as detailed in MUTCD 9C-3B. This marking is referenced in Sections 4.2.2 Conventional Bicycle Lanes, 4.2.3 Buffered Bicycle Lanes, and 4.2.4 Separated Bike Lanes.

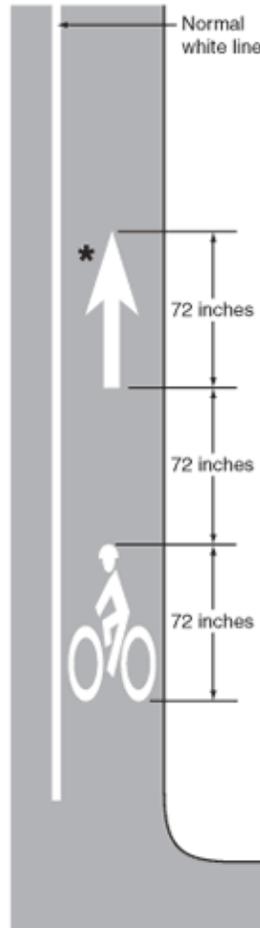


FIGURE 4.3.2: HELMETED BICYCLIST SYMBOL. (MUTCD 9C-3B)

## 5 Intersection Treatments

Intersection treatments are one of the most critical components of bicycle facility design, as nearly two-thirds of bicycle-vehicle collisions occur at these locations. It is important to increase visibility for bicyclists at intersections. This is especially the case if bicyclists are travelling in an unexpected pattern, such as contra-flow traffic along an intersecting path, and when bicyclists are completing turning movements. It is much more difficult for a bicyclist to reach full speed after being stopped than it is for a vehicle, increasing the potential danger of these situations.

## 5.1 Striping

Based on the volume of the roadway, design speed, anticipated volume of vehicular turning movements, and layout of the bicycle facility, different methods of striping should be considered to ensure adequate visibility is given to users.

### No Striping

For very low volume, low speed roadways, bike lane striping through intersections may not be required. This is particularly true if there are low volumes of vehicles completing turning movements at the site.

### Basic Striping

For medium – high volume roadways, bike lanes should be striped through the intersection. These shall be delineated with 6” solid white striped lines on the outer edge of the bicycle travel way. This striping alerts drivers to anticipate bicyclists’ movements through the intersection.

### Colored Striping

To provide further visibility along high volume roads, colored striping shall be used through the intersections. Colored striping shall consist of green pavement marking the width of the bike lane or path. Colored striping shall be bordered by 6” solid white striped lines. This provides the greatest level of visibility to bicyclists. This treatment is also recommended for crossings of both bike paths and cycle tracks, when bicyclists will be traveling in the direction opposite to driver expectation.

## 5.2 Bike Boxes

### Description

Bicyclists face difficulty completing left turns on busy roadways, as they must travel through vehicular lanes to correctly position themselves to complete the turning movement. Due to speed differentials, particularly when bicyclists must start from a stopped position, striping of bike boxes is recommended when bicyclist left turn movements are anticipated to be frequent.

### Pavement Markings

Bike boxes are typically 10 – 16 feet deep green striping for the entire width of vehicle travel lanes, from the median to the outer edge of the bike lane. They are placed directly behind the pedestrian cross walk at intersections and in front of the stop bar for vehicular traffic. This prevents vehicles from stopping too close to the intersection and bicyclists from encroaching on the pedestrian cross walk. Helmeted bicyclist symbols (MUTCD 9C-3B) shall also be painted inside the bike box to designate the space as a bicyclist zone. These symbols shall be centered between the pedestrian crosswalk and the vehicle stop bar in the center of the vehicular travel lane.

### Signing

Locations utilizing this treatment shall include signs that prohibit vehicular right turns on red (MUTCD R10-11). “Stop here on red” (MUTCD R10-6A) signs are also recommended behind the bike box to ensure that vehicles understand how to proceed with the unique treatment.



IMAGE 5.2: EXAMPLE BIKE BOX IN USE IN PORTLAND, OREGON. (IMAGE SOURCE: NACTO.ORG)

## 5.3 Bicycle Signals

Bicycle signals at intersections provide the highest level of visibility to bicyclists. Potential treatments and their applicability are discussed below.

### No Signal

Many intersections require no additional treatment for bicycle crossings. This is particularly true through urban corridors, where high numbers of pedestrians and bicyclists are likely to be present at all times thus increasing driver awareness.

### Rectangular Rapid Flashing Beacon

Rectangular Rapid Flashing Beacons (RRFBs) are the most common type of bicycle signal. This treatment is particularly recommended at mid-block crossings of bicycle facilities to increase visibility for bicyclists. They are also recommended at intersection crossings where a bicycle facility crosses a roadway that does not have a stop condition at the intersection (including both signalized intersections and stop-controlled intersections).

RRFBs come in two distinct types: push-activated and motion sensor-activated. Motion sensor activation is not recommended at crossing situations where pedestrians and/or bicyclists may not all be crossing the same road (i.e. intersections where sidewalks/trails run both north-south and east-west). Since sensors are not sensitive enough to detect which direction users intend to travel, push buttons are preferred for these locations. Motion sensor activation is most applicable for mid-block crossing of shared use paths along a roadway. Solar power is recommended for both push-activated and motion sensor-activated signal types.

RRFBs shall be installed upstream of the proposed bicycle crossing in the direction of oncoming traffic. Push buttons shall be installed close enough to the proposed crossing such that bicyclists may activate the

signal without dismounting. Advanced warning signs shall also be installed in advance of these crossings per MUTCD standards based on the design speed of the roadway which is being crossed. See MUTCD Section 2C.05 for current information regarding advanced warning signs.

### **Bicycle Signal**

Full bicycle signals are recommended for crossings where constant or near-constant flows of bicycles are anticipated. This treatment provides green, yellow, and red signalized bicycle lights for bicyclists similar to the red, yellow, and green vehicular signals. This treatment is unlikely to be needed in the near future for the Chippewa-Eau Claire MPA. Refer to the latest NACTO recommendations for further information if Rectangular Rapid Flashing Beacons are found to be inadequate in future years.

## **6 Design Policy**

Bicyclists are not dependent on one route or specific corridor but rather require a vast network of facilities to best enable full mobility. However, the nature of roadway improvements is such that upgrades are often scattered and in segments. Due to this problem, a particular roadway improvement may not initially appear to benefit from bicycle facilities but may end up becoming a critical component of the future bicycle network. The addition of bicycle facilities should always be considered and analyzed using the current Chippewa – Eau Claire Metropolitan Bicycle and Pedestrian Plan as well as applicable state, regional, and local plans.

## **7 Reference Resources**

The following guidelines and references were used in the creation of this document. At all times, design must meet applicable design standards set forth by AASHTO, MUTCD, and the Wisconsin Department of Transportation.

AASHTO. (2012). Guide for the Development of Bicycle Facilities. Washington, D.C.

Amsden, M., & Huber, T. (2006). Bicycle Crash Analysis for Wisconsin using a Crash Typing Tool (PBCAT) and Geographic Information System (GIS). Madison, WI: Wisconsin Department of Transportation.

Architectural and Transportation Barriers Compliance Board. (2011). Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way. Washington, DC: Federal Register. Retrieved from <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines>

City of Minneapolis. (2010). Access Minneapolis: Street and Sidewalk Design Guidelines. Minneapolis, MN: Public Works Department.

Jaffe, E. (2016, February 5). Some Bike Infrastructure is Worse Than None at All. City Lab, The Atlantic.

Madison Area Metropolitan Planning Organization. (2000). Bicycle Transportation Plan: Madison Urban Area and Dane County. Madison, WI. Retrieved from <https://www.cityofmadison.com/trafficEngineering/documents/BikeTranspPlan/bikeplan00.pdf>

- Madison Area Transportation Planning Board. (2015). Bicycle Transportation Plan for the Madison Metropolitan Area and Dane County. Madison, WI. Retrieved from [http://www.madisonareampo.org/planning/documents/Final\\_BTP\\_2015\\_web.pdf](http://www.madisonareampo.org/planning/documents/Final_BTP_2015_web.pdf)
- National Association of City Transportation Officials. (2014). Urban Bikeway Design Guide.
- Stein, W. J., & Neuman, T. R. (2007). Mitigation Strategies for Design Exceptions (Report FHWA-SA-07-011). Washington, DC: US Department of Transportation. Retrieved from Mitigation.
- Wisconsin Department of Transportation. (2004). Wisconsin Bicycle Facility Design Handbook. Madison, WI.
- Wisconsin Department of Transportation. (2016). Facilities Development Manual. Madison: State of Wisconsin.

**APPENDIX E – FEDERAL HIGHWAY ADMINISTRATION  
PEDESTRIAN AND BICYCLE RESEARCH AND PROGRAM  
ACTIVITIES**

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# Federal Highway Administration Pedestrian and Bicycle Research and Program Activities

Prepared for Transportation Research Board (TRB)  
January 9, 2017



U.S. Department  
of Transportation

**Federal Highway  
Administration**

This document describes recent, ongoing, and upcoming pedestrian and bicycle research efforts and related activities for the Federal Highway Administration (FHWA) offices listed below. While collaboration and coordination occurs between offices, activities are listed under the lead office.

To be posted at [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/resources/trb\\_summaries/](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/resources/trb_summaries/)

## Office of the Secretary of Transportation (OST)

**Safer People, Safer Streets:** The Safer People, Safer Streets initiative launched two years ago as a high-profile collaborative, intermodal effort to help improve pedestrian and bicycle safety at the local level in response to data showing increasing fatalities. Through the initiative DOT sponsored 52 pedestrian and bicycle safety assessments (one in every State, the District of Columbia, and Puerto Rico), issued the Mayors' Challenge for Safer People, Safer Streets, and identified policy issues and gaps. The formal initiative completed its work in September 2016, but the multimodal, Departmentwide focus on pedestrian and bicycle safety continues.

The Summit for Safer People, Safer Streets held in September celebrated the accomplishments of the initiative and of the communities that participated in the Mayors' Challenge for Safer People, Safer Streets. Ten cities received awards from Secretary Foxx at the event, and their accomplishments are illustrated on the Mayors' Challenge webpage. See <https://www.transportation.gov/mayors-challenge>.

OST Contact: Anthony Burton, [anthony.burton@dot.gov](mailto:anthony.burton@dot.gov), 202-366-2278

## FHWA Office of Planning, Environment, and Realty (HEP)

### Office of Human Environment (HEPH)

#### Recent Resources

**Strategic Agenda for Pedestrian and Bicycle Transportation.** This report informs FHWA's pedestrian and bicycle activities in the next 3 to 5 years and is organized around four goals: (1) Networks, (2) Safety, (3) Equity, and (4) Trips. Each goal includes actions relating to (a) Capacity Building, (b) Policy, (c) Data, and (d) Research. See

[www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/strategic\\_agenda](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/strategic_agenda).

**Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts.** The guidebook helps practitioners address topics such as intersection design, road diets, pedestrian crossings, transit and school access, freight, and accessibility. It highlights ways to apply design flexibility, while

focusing on reducing multimodal conflicts and achieving connected networks. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/multimodal\\_networks](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks).

**Pursuing Equity in Pedestrian and Bicycle Planning.** This white paper discusses equity considerations in the pedestrian and bicycle planning process. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/resources/equity\\_paper](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/resources/equity_paper).

**Guidebook for Developing Pedestrian and Bicycle Performance Measures.** This document helps communities develop performance measures that can fully integrate pedestrian and bicycle planning in ongoing performance management activities. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/performance\\_measures\\_guidebook](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/performance_measures_guidebook).

**Incorporating On-Road Bicycle Networks into Resurfacing Projects.** This guidebook helps communities integrate on-road bicycle facilities as part of their routine roadway resurfacing process. This is an efficient and cost-effective way for communities to create connected networks of bicycle facilities. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/resurfacing](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing).

**Bicycle Network Planning & Facility Design Approaches in the Netherlands and the United States.** This FHWA Global Benchmarking Program report explores similarities and differences in approaches to bicycle network planning and facility design. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/network\\_planning\\_design](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/network_planning_design).

**Bike Network Mapping Idea Book.** This document highlights ways that different communities have mapped their existing and proposed bicycle networks. It is a resource for communities to identify, plan, and improve their bicycle networks. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/bikemap\\_book](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/bikemap_book).

**Small Town and Rural Multimodal Networks.** This guidebook helps small towns and rural communities support safe, comfortable, and active travel for people of all ages and abilities. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian](http://www.fhwa.dot.gov/environment/bicycle_pedestrian).

**2016 Recreational Trails Program (RTP) Annual Report.** This report provides information about the RTP and highlights the RTP Database and how States use funds. It illustrates eligible project types along with project examples receiving awards from the Coalition for Recreational Trails. See [www.fhwa.dot.gov/environment/recreational\\_trails/overview/report/2016/index.cfm](http://www.fhwa.dot.gov/environment/recreational_trails/overview/report/2016/index.cfm).

**Transportation Alternatives Program (TAP) Performance Management Guidebook.** This document provides sample performance objectives and measures that States, Metropolitan Planning Organizations (MPOs), and project sponsors may consider as they administer, implement, and evaluate TAP projects and program outcomes. See [www.fhwa.dot.gov/environment/transportation\\_alternatives/performance\\_management/](http://www.fhwa.dot.gov/environment/transportation_alternatives/performance_management/).

## **Ongoing Research and Related Activities**

**Livability Team Related Activities.** FHWA is continuing to track related activities and products via the [Livability Website](#), [Human Environment Digest](#), and [Environmental Justice](#) (EJ) Webpage.

**Pedestrian and Bicycle Information Center (PBIC).** FHWA entered into a 5-year cooperative agreement with the University of North Carolina Highway Safety Research Center (UNC/HSRC) to support the PBIC in September 2016. The statement of work covers: (1) Operate a national pedestrian and bicycle information center; (2) Conduct pedestrian and bicycle research and provide technical assistance; and (3) Enhance behavioral safety education, enforcement, policy, research, and communication-related efforts in cooperation with the National Highway Traffic Safety Administration (with NHTSA funding). See [www.pedbikeinfo.org/](http://www.pedbikeinfo.org/).

**Innovative Street Design and Accessibility.** This research project will focus on the extent to which new and emerging street designs and practices, such as shared streets, meet the needs of people with disabilities, specifically regarding navigation for pedestrians with vision disabilities. This project will synthesize current practice and document linkages to existing accessibility design guidance and regulations. It will highlight innovative practices that are enhancing accessibility in communities and document key design challenges, instances where existing design guidance is lacking, and areas where additional research is needed. Anticipated Fall 2017.

**Measuring Multimodal Network Connectivity.** This project will synthesize and present the full range of options available for measuring network connectivity and tracking change over time. A summary report will be developed documenting the various methodologies and approaches and identifying strengths and weaknesses of each based on a real world application in different contexts. The methodologies will range from detailed data, resource, and time-heavy applications to more streamlined approaches. Methodologies will be examined for communities that have extensive data and also for communities that have limited data. The project will apply a subset of these methodologies in five case study communities, and the results will be included in the final report. Anticipated Fall 2017.

**Every Day Counts (EDC-4)/Community Connections Initiative.** This initiative promotes the use of innovative transportation planning and project delivery strategies to lead to community-focused transportation projects that support community revitalization. Two webinars and seven summits took place from September to December 2016, focusing on various transportation components to enhance the transportation process and improve connectivity between disadvantaged populations and essential services. See [www.fhwa.dot.gov/innovation/everydaycounts/edc\\_4/connections.cfm](http://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/connections.cfm).

**MySidewalk.** This is a mobile application facilitating the crowd-sourced collection of sidewalk inventory and condition data. MySidewalk utilizes advances in social networks, mobile data collection, and data mining to provide integrated sidewalk datasets. It is funded through the [Small Business Innovation Research](#) (SBIR) Program. Phase I demonstrated the feasibility of the concept through a proof-of-concept prototype. Phase II is improving the MySidewalk user interface and features, beta testing a pilot implementation, and preparing to take the application to market. Anticipated Spring 2018.

**Rails-with-Trails Effective Practices.** The Federal Railroad Administration (FRA), FHWA, the Federal Transit Administration (FTA), and NHTSA initiated a research study to follow up on the 2002 [Rails-with-Trails: Lessons Learned; Literature Review, Current Practices, Conclusions](#). The 2002 report addressed issues associated with the development of shared use paths and other trails within or adjacent to active railroad and transit rights-of-way. The new report will document and synthesize lessons learned over the past 15 years. It will provide examples of effective practices to maintain or enhance the safety and security of railroad and transit employees and property, trail users, and the general public, while meeting community mobility and land use goals. Anticipated Fall 2018.

## **Funding**

**Federal-Aid Funds for Pedestrian and Bicycle Programs and Projects.** FHWA posts Federal pedestrian and bicycle funding at [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/funding/bipedfund.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/bipedfund.cfm).

**Pedestrian and Bicycle Funding Opportunities / U.S. Department of Transportation Transit, Highway, and Safety Funds.** FHWA updated this funding table to account for the Fixing America's Surface Transportation (FAST) Act and to provide more project examples. It indicates potential eligibility for pedestrian and bicycle projects, notes basic program requirements, and links to program guidance. Project sponsors should fully integrate nonmotorized accommodation into surface transportation projects. The table is available in [HTML](#) and [PDF](#) formats.

## **Safe Routes to School (SRTS)**

**SRTS Clearinghouse Status.** FHWA's cooperative agreement with the UNC Highway Safety Research Center's National Center for Safe Routes to School to operate the SRTS clearinghouse ended in December 2016. FHWA will provide some support for tracking SRTS projects, collecting student travel data, and promoting Walk and Bike to School Days through the PBIC. Below are highlights of activities the National Center for SRTS conducted as the SRTS clearinghouse in 2016. FHWA's SRTS webpage is [www.fhwa.dot.gov/environment/safe\\_routes\\_to\\_school/](http://www.fhwa.dot.gov/environment/safe_routes_to_school/).

**Quarterly Tracking Briefs.** Briefs provide information about State SRTS program funding. The September 30, 2016 brief noted about \$5.3 million spent or announced for SRTS programs through the FAST Act legislation from reporting States. See [www.saferoutesinfo.org/program-tools/national-progress/program-tracking-reports](http://www.saferoutesinfo.org/program-tools/national-progress/program-tracking-reports).

**Trends in Walking and Bicycling to School from 2007 to 2014.** The report included 720,000 parent surveys from 6,500 schools and found walking to and from school increased from less than 14 percent to more than 17 percent of all trips between 2007-08 and 2014. See <http://bit.do/walkbiketrends>.

**Advancing Safe Walking and Bicycling for Youth: Approaches from the Federal Safe Routes to School Program that Support Broad Safety Benefits for Youth.** The report describes five ways that SRTS strategies can be used to improve safety beyond the trip to school. See [http://saferoutesinfo.org/sites/default/files/VisionZero\\_final.pdf](http://saferoutesinfo.org/sites/default/files/VisionZero_final.pdf).

**Walking and Bicycling in Indian Country: SRTS in Tribal Communities.** This brief describes issues and examples of SRTS programs in tribal communities. See [http://saferoutesinfo.org/sites/default/files/SRTS\\_brief\\_tribal.pdf](http://saferoutesinfo.org/sites/default/files/SRTS_brief_tribal.pdf).

**SRTS in Small Rural Communities: Challenges and Strategies to Accessing Funding.** This brief describes issues and examples of SRTS programs in small rural areas. See [http://saferoutesinfo.org/sites/default/files/SRTS\\_brief\\_RuralComm\\_final.pdf](http://saferoutesinfo.org/sites/default/files/SRTS_brief_RuralComm_final.pdf).

**National Walk to School Day and National Bike to School Day.** Record participation of 5,086 schools and 2,678 schools, respectively. Partnered with Mayors' Challenge for Safer People and Safer Streets to invite a total of 1,500 mayors to join events and commit to child and youth pedestrian safety. See [www.walkbiketoschool.org](http://www.walkbiketoschool.org).

#### **HEPH Contacts:**

Website: [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/index.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/index.cfm)

- Gary Jensen, [gary.jensen@dot.gov](mailto:gary.jensen@dot.gov), 202-366-2048
- Dan Goodman, [daniel.goodman@dot.gov](mailto:daniel.goodman@dot.gov), 202-366-9064
- Christopher Douwes, [christopher.douwes@dot.gov](mailto:christopher.douwes@dot.gov), 202-366-5013
- Wesley Blount, [wesley.blount@dot.gov](mailto:wesley.blount@dot.gov), 202-366-0799

#### **Office of Planning (HEP)**

**Bicycle-Pedestrian Count Technology Pilot Project.** In 2015, FHWA's Office of Planning, Environment, and Realty (HEP) awarded grants to 10 Metropolitan Planning Organizations (MPOs) for a Bicycle-Pedestrian Count Technology Pilot Project. The Pilot Project funded the purchase of a limited number of portable automatic counters to collect counts at various locations within the MPO planning areas. The project asked agencies to collect counts over a period of one year using the portable counters and to share data and experiences with FHWA. Participants had access to a series of internal webinars and other technical assistance opportunities. FHWA released a summary report on its [Bicycle-Pedestrian Count Technology Pilot Project](#) in December 2016. The purpose of the pilot project was to increase the organizational and technical capacity of MPOs to establish and operate effective bicycle and pedestrian count programs and to provide lessons learned for peer agencies across the country. Technical resources developed during the project include slide shows and webinar recordings, and may be found at the [Pedestrian and Bicycle Information Center](#), [www.pedbikeinfo.org](http://www.pedbikeinfo.org).

#### **Coding Nonmotorized Station Location Information in the 2016 Traffic Monitoring Guide Format.**

HEPP published a user-friendly guidebook to support development of data that can be communicated in the Traffic Monitoring Guide (TMG) format and eventually contributed to the national database of bicycle and pedestrian counts that is currently being developed through the Traffic Monitoring Analysis System. The guidebook includes diagrams, illustrations, and numerous examples showing how to interpret the TMG format and how to assemble correct and consistent information about bicycle and pedestrian count locations and the counts themselves. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/).

**Connected Bicycle Technology.** FHWA awarded a [Small Business Innovation Research](#) (SBIR) Phase I project to Charles River Analytics of Cambridge, MA to develop a prototype of connected vehicle technology and supporting applications for bicycles. Phase I concluded in November 2016 with a successful demonstration of the prototype on the connected vehicle test facility at the FHWA Turner Fairbank Highway Research Center. A Phase II proposal is currently being evaluated. Connected vehicle technology allows direct communication of safety and mobility information between suitably equipped vehicles, as well as between vehicles and infrastructure such as traffic lights or warning beacons. The products of this research will ensure that bicycles can participate in this new information environment.

**HEPP Contacts:**

Website: [www.fhwa.dot.gov/planning/processes/pedestrian\\_bicycle/](http://www.fhwa.dot.gov/planning/processes/pedestrian_bicycle/)

- Jody McCullough, [jody.mccullough@dot.gov](mailto:jody.mccullough@dot.gov), 202-366-5001
- Jeremy Raw, [jeremy.raw@dot.gov](mailto:jeremy.raw@dot.gov), 202-366-0986
- Brian Gardner, [brian.gardner@dot.gov](mailto:brian.gardner@dot.gov), 202-366-4061
- Jill Stark, [jill.stark@dot.gov](mailto:jill.stark@dot.gov), 202-366-8870

## **FHWA Office of Highway Policy Information (HPPI)**

**Exploring Pedestrian Counting Procedures: A Review and Compilation of Existing Procedures, Good Practices, and Recommendations.** In May 2015 HPPI published a report on the state of practice in pedestrian counting. This report covers existing guidance and best practices to recommend strategies for accurate, timely, and feasible measurement of pedestrian travel. See [www.fhwa.dot.gov/policyinformation/travel\\_monitoring/pubs/hpl16026/](http://www.fhwa.dot.gov/policyinformation/travel_monitoring/pubs/hpl16026/).

**Pedestrian and Bicycle Updates to the Traffic Monitoring Analysis System (TMAS).** To support statistical analysis of travel trends, HPPI maintains a system called the Traffic Monitoring Analysis System (TMAS), which receives raw data from automatic motorized vehicle collection programs, vehicle classification counts, and weigh-in-motion counters. It computes basic reports from those data sets. A project funded by the FHWA Office of Planning is modifying TMAS to receive and report on bicycle and pedestrian counts based on the Traffic Monitoring Guide data format (see next item). Those enhancements will be included in TMAS Version 2.8, which is under active development and scheduled for release in 2017. It will be at [www.fhwa.dot.gov/policyinformation/tmguid/](http://www.fhwa.dot.gov/policyinformation/tmguid/).

**Traffic Monitoring Guide (TMG).** HPPI publishes the TMG to support consistent traffic monitoring techniques. Since 2013 this guide has included information on conducting bicycle and pedestrian counts and reporting those counts in a standard data format. HPPI published a new edition of the TMG in 2016 with several important updates to the bicycle and pedestrian data format. See [www.fhwa.dot.gov/policyinformation/tmguid/](http://www.fhwa.dot.gov/policyinformation/tmguid/).

**HPPI Contacts:**

- Steven Jessberger, [steven.jessberger@dot.gov](mailto:steven.jessberger@dot.gov), 202-366-5052
- Tianjia Tang, [tianjia.tang@dot.gov](mailto:tianjia.tang@dot.gov), 202-366-2236

## **FHWA Office of Infrastructure (HIF)**

**Controlling Criteria for Design: A Final Notice.** This guidance was published in the *Federal Register* on May 5, 2016, to finalize the revision of FHWA’s policy on controlling criteria for design. The change reduces the number of controlling criteria from 13 to 10, and introduces context to the application of the controlling criteria. As a result, only two controlling criteria apply to non-freeways with a design speed less than 50 miles per hour. See [www.fhwa.dot.gov/design/standards/160505.cfm](http://www.fhwa.dot.gov/design/standards/160505.cfm).

### **HIF Contact:**

- Elizabeth Hilton, [elizabeth.hilton@dot.gov](mailto:elizabeth.hilton@dot.gov), 512-536-5970

## **FHWA Office of Operations (HOP)**

**Interim Approval for Intersection Bicycle Boxes.** FHWA issued an Interim Approval for intersection bicycle boxes (IA-18) on October 12, 2016, through the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD). See [http://mutcd.fhwa.dot.gov/res-interim\\_approvals.htm](http://mutcd.fhwa.dot.gov/res-interim_approvals.htm).

**Update to Interim Approval for Green-Colored Pavement.** FHWA updated Interim Approval 14, which allows the use of green-colored pavement in bicycle lanes and bicycle lane extensions, based upon the experience of manufacturers and installing agencies with production and field installation. [Official Ruling 9\(09\)-86 \(I\)](#) revises the chromaticity specifications of green-colored pavement under IA-14 to better allow for uniformity in the production process and the materials wearing under UV exposure in the field. All Official MUTCD Interpretations are at <http://mutcd.fhwa.dot.gov/resources/interpretations/index.htm>.

**Update to MUTCD FAQ on “Share the Road” Signing for Bicyclists.** FHWA updated the [MUTCD FAQ](#) to address the most recent research surrounding “Share the Road” messaging as it relates to bicyclists on the roadway. [The new FAQ entry](#) notes that “Share the Road” messaging can be confusing to drivers and bicyclists who each misinterpret the message as applying to the other group. The FHWA recommends the use of a W11-1 warning sign with a word message plaque reading “IN LANE” or “ON ROADWAY”. See [http://mutcd.fhwa.dot.gov/knowledge/faqs/faq\\_part9.htm#signsq5](http://mutcd.fhwa.dot.gov/knowledge/faqs/faq_part9.htm#signsq5).

**Clarification Memo on Traffic Control Devices and Bicycle Facilities.** Based on requests from the Institute of Transportation Engineers, National Association of City Transportation Officials, and People for Bikes, the FHWA has issued a memo clarifying the approval status of several traffic control devices, including two-stage turn boxes, bicycle lane extensions, green-colored pavement with shared-lane markings, and others.

**Bicycle Facilities and the Manual on Uniform Traffic Control Devices.** The table lists various bicycle-related signs, markings, signals, and other treatments and identifies their status (e.g., can be implemented, currently experimental) in the 2009 version of the MUTCD. See [www.fhwa.dot.gov/environment/bicycle\\_pedestrian/guidance/mutcd/](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/mutcd/).

### **HOP Contacts:**

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## **FHWA Office of Safety (HSA)**

**Bike Facility Selection Guide.** This project will develop a new resource guide that will help State and local agencies identify the most appropriate types of bike facilities to use based on user and roadway characteristics. After development, we will provide technical assistance to several pilot communities as they use the guide. FHWA's stakeholders are continually asking us for new resources to help them implement safer bicycle facilities. We have produced and revised a number of well-received tools (e.g., BIKESAFE) and documents (e.g., *Separated Bike Lane Planning and Design Guide*). However, there is a gap as to *when* to separate bicycle traffic from motor vehicle traffic and how to do it safely within an often constrained urban right-of-way. Contract award expected Spring 2017.

**Pedestrian and Bicyclist Scalable Risk Assessment Methodology (ScRAM).** This project will build off existing resources to create a standardized approach that agencies can use to estimate pedestrian and bicyclist exposure to risk. It will result in a Scalable Risk Assessment Methodology. It will make it easier for stakeholders to assess risk and inform funding decisions, which is especially important given the constrained fiscal environment. Texas Transportation Institute was awarded the contract in Spring 2016.

**Pedestrian and Bike Safety Reference Tool.** FHWA has developed numerous tools, case studies, and resources to assist State and local agencies with making pedestrian and bicyclist safety improvements. Despite this, there are concerns that end users are not aware of these resources and when or how to use them. The project will compile and provide in one central location comprehensive decision support tools, design guidance, and other resources to support the development of safe and complete bicycle and pedestrian transportation networks. The decision support resource will assist stakeholders with the full life cycle of pedestrian and bicyclist project development, including public involvement, planning, programming, design and construction, safety, operations and maintenance, and evaluation. Expected Spring 2017.

**Noteworthy Local Policies that Support Safe and Complete Pedestrian and Bicycle Networks.** This project will identify examples, highlight noteworthy practices, and discuss advantages, effectiveness, and any shortcomings of provisions supporting safe and complete walking and biking environments (i.e., Complete Streets policies and access management). Expected in early 2017.

**Pedestrian Forum.** The Office of Safety produces a quarterly newsletter focusing on pedestrian safety. The current and previous issues are at [http://safety.fhwa.dot.gov/ped\\_bike/pedforum/](http://safety.fhwa.dot.gov/ped_bike/pedforum/). You can subscribe at <http://safety.fhwa.dot.gov/esubscribe.cfm#ped>.

**Pedestrian Safety Focus States and Cities.** Since 2004, FHWA's Safety Office has been working to aggressively reduce pedestrian deaths by focusing extra resources on the cities and States with the highest pedestrian fatalities and/or fatality rates. The states and cities were revised in 2015 to include bikes and what you currently see in this [map](#). For more information on how the States and cities were selected visit the [Office of Safety's Focused Approach Website](#). FHWA has been offering **free technical assistance**

**and courses** to each of the states and cities and **free bimonthly webinars** on subjects of interest. See [http://safety.fhwa.dot.gov/ped\\_bike/ped\\_focus/](http://safety.fhwa.dot.gov/ped_bike/ped_focus/).

**Safe Transportation for Every Pedestrian (STEP).** Pedestrians account for more than 17.5 percent of all fatalities in motor vehicle traffic crashes. The majority of these deaths occur at uncontrolled crossing locations such as mid-block or unsignalized intersections. These are among the most common locations for pedestrian fatalities generally because of inadequate pedestrian *crossing facilities* and insufficient or inconvenient *crossing opportunities*, all of which create barriers to safe, convenient, and complete pedestrian networks. Over the next two years, FHWA is promoting the following pedestrian safety countermeasures through the fourth round of Every Day Counts (EDC-4):

- **Road Diets** can reduce vehicle speeds and the number of lanes pedestrians cross, and they can create space to add new pedestrian facilities.
- **Pedestrian hybrid beacons** (PHBs) are a beneficial intermediate option between RRFBs and a full pedestrian signal. They provide positive stop control in areas without the high pedestrian traffic volumes that typically warrant signal installation.
- **Pedestrian refuge islands** allow pedestrians a safe place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or others with limited mobility.
- **Raised crosswalks** can reduce vehicle speeds.
- **Crosswalk visibility enhancements**, such as crosswalk lighting and enhanced signing and marking, help drivers detect pedestrians—particularly at night.

See [www.fhwa.dot.gov/innovation/everydaycounts/edc\\_4/step.cfm](http://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/step.cfm).

### **Recent Safety Products**

**Road Diet Policies.** This document describes the benefits and highlights real-world examples of agencies including Road Diets within new or revised transportation policies and guidance. See [http://safety.fhwa.dot.gov/road\\_diets/resources/fhwasa16072/](http://safety.fhwa.dot.gov/road_diets/resources/fhwasa16072/).

**MYTH BUSTERS: Debunking Road Diet Myths.** This flyer debunks some of the most common Road Diet myths. See [http://safety.fhwa.dot.gov/road\\_diets/resources/fhwasa16074/](http://safety.fhwa.dot.gov/road_diets/resources/fhwasa16074/).

**Did You Know a Road Can Go On a Diet?** This document provides an overview of Road Diets and how they can be implemented to improve safety. See [http://safety.fhwa.dot.gov/road\\_diets/resources/](http://safety.fhwa.dot.gov/road_diets/resources/) (PDF: [http://safety.fhwa.dot.gov/road\\_diets/resources/pdf/get-the-facts062016.pdf](http://safety.fhwa.dot.gov/road_diets/resources/pdf/get-the-facts062016.pdf)).

**Building Safer Routes to School.** Road Diets can improve roadway conditions near areas children frequent, like schools and parks. In these locations, safety can be drastically improved for motorists by calming traffic and improving the line of sight for children and drivers alike. See [http://safety.fhwa.dot.gov/road\\_diets/resources/](http://safety.fhwa.dot.gov/road_diets/resources/) (PDF: [http://safety.fhwa.dot.gov/road\\_diets/resources/pdf/safer\\_route\\_to\\_schoolv1\\_052616.pdf](http://safety.fhwa.dot.gov/road_diets/resources/pdf/safer_route_to_schoolv1_052616.pdf)).

**Road Diets: A proven safety Countermeasure that improves safety, livability, and access for ALL users (Video).**

- **Long version:**  
<https://vimeo.com/176519494/517684ac7b> (Transcripts)
- **Short version:**  
<https://vimeo.com/176522659/7c0d3d1174> (Transcripts)

**Improving Access to Transit Using Road Safety Audits: Four Case Studies.** This case studies document provides a review of the Road Safety Audit (RSA) process and four case study examples of RSAs that had a demonstrated interest in improving access to transit. See <http://safety.fhwa.dot.gov/rsa/resources/> (PDF: <http://safety.fhwa.dot.gov/rsa/resources/docs/fhwasa16120.pdf>).

#### **HSA Contacts:**

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### **FHWA Office of Safety Research and Development (HRDS)**

**Identification and Prioritization of Pedestrian Crash Locations/Area.** This research project effort will improve safety and mobility for pedestrians and bicyclists. An initial step in reducing the frequency of pedestrian crashes is identifying where they are occurring. Once locations have been identified, appropriate treatments can be selected and installed. Several techniques are used to identify high crash locations, including identifying intersections or midblock crossings with the highest number of crashes in a given time period (i.e., frequency) or the highest number of crashes after adjusting for exposure (i.e., crash rate). This project will document methods used to identify or prioritize high pedestrian crash sites or areas, including the methods' input data demands. It will develop a best practice guide to assist State and local agencies in identifying high pedestrian crash locations, corridors, and zones. The guide will demonstrate both existing tools along with potential tools being explored to identify locations that justify consideration of pedestrian treatments. Anticipated December 2017.

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