

2007

Bicycle Master Plan



Prepared by the Bicycle Federation of Wisconsin for the Village of Sturtevant, Racine County, Wisconsin

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Foreword and Acknowledgements

We would like to thank the Village of Sturtevant for taking the initiative to incorporate bicycle transportation into its planning process. This demonstrates that the Village identifies bicycling as an important form of transportation and recreation of the future.

The Bicycle Master Plan was authored by Greg Rybarczyk and Jack Hirt of The Bicycle Federation of Wisconsin. This plan was funded by the Village of Sturtevant.

The Bicycle Federation of Wisconsin is a statewide nonprofit bicycle education and advocacy organization with over 2,500 members. The Bicycle Federation of Wisconsin's mission is to make

Wisconsin a better place to bicycle. Bicycling is a viable, healthy, and environmentally sustainable means of transportation, recreation, and sport. The Bicycle Federation of Wisconsin provides bicyclists of all ages with information on recreational rides, safety tips, and commuting skills while educating decision makers about the importance of bicycling to our communities. Learn more at www.bfw.org.

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Executive Summary

The Village of Sturtevant Bicycle Master Plan was developed to serve the recreational and transportation needs of the public. The Bicycle Master Plan shall serve as a legal document to be consulted with during any land-use and/or transportation project. When a comprehensive plan is developed for the Village, this document should serve as a supplement to the Comprehensive Plan, and should be part of any update to that plan.

Bicycling is an effective mode of transportation that is quiet, non-polluting, versatile, healthy, and fun. Bicycling is also a transportation mode available to all ages and income levels. In addition to the social, environmental, health, and transportation benefits, bicycling has a positive economic impact. Federal, state, and regional policies and plans have firmly established that the safe accommodation of bicycling and walking is the responsibility of state and local transportation agencies. The *Village of Sturtevant Bicycle Master Plan 2030* serves as the local framework for implementing those policies and plans.

The *Village of Sturtevant Bicycle Master Plan* serves as a blueprint for continuous improvement of bicycling conditions and safety by addressing the “four E’s” – Engineering (bicycle facility creation and improvement), education, encouragement, and enforcement (of the rules of the road for all road users – both motorists and bicyclists). When combined with facility improvements,

enforcement, education and encouragement can dramatically increase both the levels of bicycling and bicyclists' safety, since studies have shown a correlation between higher numbers of bicycles in the traffic stream and lower crash rates for bicyclists.¹

The *Village of Sturtevant Bicycle Master Plan* identifies existing and desirable bicycle routes within the Village of Sturtevant, including connections to neighboring municipalities. The *Village of Sturtevant Bicycle Master Plan* identifies and prioritizes bicycle facility project needs, and provides references for best practices in planning, designing, and maintaining those facilities. In addition, this Plan outlines an idea for improving bicycling in The Village of Sturtevant throughout the next 10 years and beyond. This plan is designed to serve as a template for bicycling and to provide direction for citizens, policy makers, and village staff. The plan introduces broad issues in bicycle planning as it applies to the environment within and surrounding Sturtevant. It also provides information, guidance, and prioritized recommendations for improvements.

Goals and Performance Measures:

Goal: Improve the levels, safety, and convenience of bicycling through the accommodation of bicyclists in every Village, County, and State road construction, resurfacing, streetscape, and traffic calming project improvements.

Performance Measures:

- Development and implementation of bicycle and/or motor vehicle operator education programs
- Accommodate bicyclists' needs in every local, county, or state roadway or planning project undertaken in or adjacent to the Village by 2010.
- Increase the number of bicycle-transit trips to and from the Amtrak station, and any future mass transit stations.
- 70% of residential parcels within 1/4 mile of a bicycle facility by 2020
- By 2010, have 10% of off-street trail complete, 10% of bicycle route, and entire bicycle lane on 90th Street complete

Specific recommendations for on- and off-street bicycle facilities, and their priority, are summarized in Chapter 6. Construction and maintenance cost estimates, design guidelines, and potential funding sources follow the specific facility recommendations, which are illustrated by the map.

¹ *Bicycle Transportation Plan for the Madison Urban Area and Dane County*, WI, Madison Area Metropolitan Planning Organization, September 2000.

Safe and convenient accommodations for bicyclists can provide transportation bicyclists with access to goods and services, just as the surface transportation network has provided that for motorists. Increasing levels of bicycling can decrease the need for roadway expansion, travel times for all road users, the community's health care costs resulting from sedentary lifestyles, and the negative environmental consequences of motor vehicle use. Supporting an expanded bicycling network can have myriad positive effects, including social, environmental, health, and economic benefits in addition to the obvious transportation benefits.

Chapter 1 – Introduction

Bicycling is an important mode of transportation that is available to all ages and socioeconomic groups. Bicycling is a convenient and efficient form of transportation. For some people, bicycling is the main mode of transportation. Bicycling is also a popular mode of transportation because, like the automobile (but unlike public transit), a bicycle provides its user with autonomy and flexibility regarding travel schedules and destinations, including multiple destinations (or “trip-chaining”). Door to door bicycle travel times for distances of up to five miles can be faster than, or at least comparable to, driving or transit. Bicycling levels are much higher during the warmer months, but the development of inexpensive, more versatile bicycles and clothing have increased both the appeal and the practice of bicycling in wetter and colder weather.

Bicycling for recreation is also popular, and its popularity (and economic impact) continues to grow, as evidenced by the number of bicyclists participating in bicycling groups and clubs. Nationally, bicycling ranks as the second most popular recreational activity.

1.1 Purposes of the Bicycle Plan

The Village of Sturtevant Bicycle Master Plan (PLAN) shall serve as a legal document to be adhered to during any land-use and/development project. If a comprehensive plan is codified by the Village, this PLAN shall serve as a supplement. By making this PLAN a supplement to a potential comprehensive plan, it should be considered in any development and/or transportation project.

The PLAN is an effort to coordinate and develop a bikeway system that will benefit the recreational and transportation needs of the public. This PLAN also recognizes the use of the bicycle as an alternative form of transportation, which will reduce the amount of vehicles emissions in this geographic area and contribute to an improvement in air quality in the region. The provision of

bikeways in the Village of Sturtevant and Racine County increases the mobility of those people who rely upon bicycles for transportation because they cannot, or choose not, to own and operate a motor vehicle. The PLAN should also serve as a blueprint for continuous improvement of bicycling conditions and safety, and serve to increase levels of bicycling through guidelines for planning, designing, and maintaining bicycle facilities.

The PLAN offers detailed engineering guidelines for various bicycle facilities, maintenance requirements, and bicycle parking recommendations. This information is located within this document in addition to state laws as they apply to non-motorized transportation. Implementation of the recommendations of this PLAN is fueled by national sponsorship of bicycling, surrounding community interest in bicycling, and the Village of Sturtevant's interest in promoting bicycling as a viable transportation option. The success of the PLAN will only be assured by the continued involvement of the Village's bicycling community and other residents that identify the importance of a sustainable transportation system.

The PLAN shall identify existing and desirable bicycle routes within the Village of Sturtevant, including connections to neighboring municipalities and transit stations. The PLAN identifies and prioritizes bicycle facility project needs, and recommends specific policies and educational, promotional, and enforcement activities to improve the practicality and safety of bicycling for transportation on a daily basis.

The Village of Sturtevant Bicycle Master Plan shall serve as a framework for cooperation between state agencies, the county, the Southeastern Wisconsin Regional Planning Commission (SEWRPC), and local governments in planning for and developing bicycle facilities.

1.2 PLAN Scope

The Village of Sturtevant Bicycle Master Plan focuses on bicycling for utilitarian and recreational purposes. For bicycle transportation, trip origins, destinations, and trip purpose are of utmost importance (e.g. commuting to work or school, shopping, attending a social event, etc.), and the bicycle is simply the means to the end. Conversely, recreational bicycling trips are made expressly for the enjoyment of bicycling, and the destination, if there is one at all, is of minor importance. The reality is that most trips (and many facilities) serve both functions, but the bicycle facility (including roadways suitable for bicycling) must be complete in order to serve the needs of all transportation bicyclists.

The Village of Sturtevant Bicycle Master PLAN is an effort to assimilate a multi-modal transportation system. The implementation of a bicycle network will benefit recreational and transportation needs of the public. This PLAN recognizes that the use of a bicycle as a transport mode will reduce the amount of vehicle emissions in this region and hence improving the quality of life for everyone. In addition, the provision of bicycle facilities in the village will increase the mobility and access for those who rely on the bicycle for transportation purposes.

In order to be eligible for funding under most Federal aid programs, bicycle projects must be primarily for transportation purposes (the Recreational Trails Program is a notable exception). In general, federal guidelines consider any bicycle path or trail other than a closed loop trail as being principally for transportation and eligible for federal funding. With the growing federal policy support for bicycling, additional funding is available for bicycle transportation improvements.

Additionally, studies have shown that the more bicycles in the traffic stream, the lower the crash rate for bicyclists. Educating motorists on how to share the road safely with bicyclists is also important. Education of elected officials, planners, engineers, and others involved in land use development will help insure that bicyclists' needs are considered and accommodated when planning and designing new neighborhoods and roadways. Lastly, for enforcement to be effective, law enforcement officers need to know which illegal behaviors are the most common factors in crashes, and enforce them. Wisconsin's Pedestrian and Bicycle Law Enforcement training course, available through Larry Corsi through the Wisconsin Department of Transportation (WisDOT) Bureau of Transportation Safety, teaches just that. It also qualifies towards the training hours required of most law enforcement agencies.

The PLAN identifies existing facilities and deficiencies, and recommends new programs, policies, and bicycle facilities projects (off-street paths, on-street facilities, and signed routes, as well as supporting facilities, such as bicycle parking) for the planning period. Implementation of the plan will encourage the use of this practical, non-polluting, and affordable mode of transportation. Existing roadways in the village were analyzed for their suitability for bicycling, to identify corridors that serve as bicycle transportation routes or barriers to cycling. The bicycle facility recommendations are those necessary for bicyclist safety, mobility, and access to important destinations such as schools, employment centers, commercial areas, public institutional land uses, and recreational areas. Recommendations are prioritized to fill in gaps first in order to maximize the existing network, and then augment the existing bicycle transportation network in the Village and its connections to other municipalities.

The recommendations of this Plan Update are flexible. In many cases the recommended facility is what will ultimately be constructed. Opportunities may arise in some locations that will require the proposed solution to be re-evaluated. These opportunities may result in a facility that is safer, more comfortable, and more cost-effective than what was originally scripted. There are recommendations in this PLAN that can be implemented easily in the short-term with other recommendations requiring additional time. In cases where the bicycle facility cannot be constructed immediately, short-term solutions may be used. The PLAN's guiding policy is to promote bicycle use as a viable, attractive, healthy, non-polluting form of transportation and to assure safe and convenient access to all areas of the city. The four "E's" (Education, Enforcement, Engineering and Encouragement) contribute to this policy.

1.3 Summary of Public Input

An effective plan includes input from the public during the planning process as an effort to assess what the wants and needs of the residents are. Input for this PLAN was collected by holding an open public meeting at the Village of Sturtevant Village Hall. Participants at the meeting were given the chance to comment on the proposed bicycle network demonstrated in this PLAN.

1.3.1 Information collected at the open Public Meeting.

Suggestions were made to incorporate a bicycle facility along Broadway Ave as it is reconstructed to facilitate a safe route to the schools located in the area and to connect residents to the overall bicycle network. Also from this meeting, a comment was made to incorporate a bicycle facility along the new alignment of Willow Rd as it is reconstructed north of State Highway 11.

1.3.2 Meeting with Schulte School

A separate meeting was arranged with the principal of the public elementary school, Shelley Kirtek, located in the village. A suggestion was made and incorporated into this PLAN to include an off-street connection onto the school grounds from the south to avoid the intersection on the north side of the school which is congested with motor vehicle traffic during pick-up and drop-off times. Installation of proper bicycle parking at the school is also a suggested improvement.

Chapter 2 –The Importance and Relevance of Bicycling

2.1 Social, Environmental, Health, and Transportation Benefits

Cycling, together with walking and in association with public transport, can broaden the range of transport choices available to citizens. In particular, safe walking and cycling, in combination with efficient public transport, can play a major role in re-establishing or maintaining adequate levels of physical activity in the general population and decreasing the risk of cardiovascular diseases, diabetes, hypertension, some cancers, as well as risks related to overweight and obesity. Improving bicycle facilities for transportation purposes benefits those who bicycle for recreation and fitness. Recreational bicycle rides can begin at home and be combined with other, often utilitarian, trip purposes. When linked with a larger bikeway system, off-street paths can provide important transportation linkages, and a complete bikeway network benefits everyone, regardless of how they use the road.

The bicycle is an effective means of transportation that is quiet, non-polluting, versatile, healthy, and fun. Bicycling is the most energy efficient form of transportation, and is often faster than driving for shorter trips (up to five miles). Bicycling offers low cost mobility; for those who do not use or have access to an automobile, such as school-age children, bicycling is particularly important. While bicycling may not replace all trips by motor vehicle, it can be a practical mode for many trips, and part of multi-modal trips as well (such as a trip to a park-and-ride carpool facility, or transit stop). Internal travel within central Wisconsin is predominantly by personal motor vehicle. Walking and bicycle travel represent the next largest percentage of internal weekday travel by resident households of the region, and that percentage has doubled since 1991.

Increasing bicycle opportunities and levels improves the efficiency of the transportation system. It improves neighborhood livability by reducing motor vehicle traffic and its associated pollution and congestion, reducing the need for motor vehicle parking, and reducing motor vehicle crashes, injuries, and property damage. Moreover, bicyclists take up little roadway space. In most urban traffic conditions, bicyclists do not significantly limit traffic flow. Therefore, converting motorists to bicyclists will increase roadway capacity, reduce congestion, and decrease trip times for everyone.

1 in 60 workers nationwide already bicycle commutes. This proportion of bicycle commuters could rise to 1 in 5 if better facilities were provided.-according to 1990 Harris poll

2.2 Economic Impact of Bicycling

Improving the bicycling environment can provide non-transportation related benefits as well. The community benefits from bicycle riders who purchase food and other needs locally. The tourism industry benefits as more bicyclists are attracted from outside the community. Most importantly, the quality of life of the community is enhanced by the presence of bicyclists and pedestrians, for example, when social interactions occur spontaneously, or when people feel safer being outdoors².

Bicycle facilities have been shown to have a positive effect on both nearby property values, and an increase in business reported by owners of businesses near bicycle facilities. A study by North Carolina's Department of Transportation of bicycle facilities in the Outer Banks reveals an annual economic impact of the facilities of 600% of the (one-time) capital costs. A study in Wisconsin showed 39% of responding businesses indicated increased business as a result of users of the Fox River Trail. The same study showed that a bicycle facility had positive effects on real estate values (and therefore property tax revenues). Lots adjacent to the Mountain Bay Trail in Brown County, WI, sold faster and for an average of 9% more than similar property not located next to the trail. The study also suggests that, by providing workers an alternative to driving to work, the trail became an inexpensive alternative to increasing road capacity. The conclusion that trail facilities generate increased revenue through higher property values is corroborated by the Consumer's Survey on Smart Choices for Home Buyers. In that survey, trails ranked the second most important amenity out of a list of 18 choices.

Trail-related expenditures by bicyclists nationally range from less than \$1 per day to more than \$75 per day, depending on mileage covered. Generally, it has been found a trail can bring at least one million dollars annually to a community, depending on how well the municipality and public embraces the trail³. At the same time, another way to look at the economic benefits of trails is on property values. According to *The National Trails Partnership*³, it has been shown that "70% of landowners felt that overall, an adjacent trail were a good "neighbor," with positive impacts including 1) getting in touch with nature (64%), 2) recreational opportunity (53%), and 3) health benefits (24%)".

²National Trails Partnership, *The Economic and Social Benefit of Trails*, March 2007

³National Association of Realtors and National Association of Home Builders, *Consumer's Survey on Smart Choices for Home Buyers*, April 2002

2.3 Bicycles and Transit

Improving the bicycle-transit link is an important part of making bicycling a part of daily life in the Village. Linking bicycles with mass transit- the Amtrak Station, overcomes such barriers as lengthy trips, journey to work, and bringing a bicycle to other major metropolitan areas. Furthermore, this multi-modal connection also enables bicyclists to reach more areas that are distant and increases transit ridership on weekends and midday. The bicycle-transit link can also make access to transit less expensive by not having to drive an automobile and parking costs. In suburban communities, population densities are often too low to offer transit service within walking distance (one-quarter mile) of every commuter. Bicycling to transit instead of driving benefits communities by reducing taxpayer costs, air pollution, and energy consumption with relatively low cost investments. The main goals of establishing the bike-transit link in the Village include, allowing bicycles on trains without packing, offering bicycle parking at transit stations, improving bicycle facilities to transit stops, and educating citizens on the advantages of utilizing bicycles and transit.

Historically, transit stations have not been viewed as attractive bicycle destinations, and as a result, convenient bicycle facilities from neighborhoods to these stations have not been implemented. On the other hand, bicycle facilities that connect transit stations, such as the Amtrak station in the Village, along with secure bicycle parking and allowing bicycles on trains, are integral to a sustainable transportation system, smart growth practices, and connecting the citizens of the Village to regional destinations.

The Amtrak station located in the Village of Sturtevant serves commuters within the region, specifically between Chicago and Milwaukee. The Hiawatha line includes a stop in Sturtevant. This vital station places Sturtevant in an advantageous position to maximize the bicycle-transit link. There currently exists bicycle parking on the Amtrak station property, although bicycles cannot be brought onto the train either as luggage or on-board. Through the endorsement of bicycling to the Amtrak station by government officials and citizens, the integration of bicycling into the journey will make a sustainable transportation system come to fruition. It is recommended that cooperation between Village policy makers and the Amtrak company continue in the vein of transit-oriented development (TOD) practices and financing a service attendant by Amtrak at this station so that bicycles can be brought onto the train at this location.

Chapter 3 – Existing Federal, State, Regional, Local Policies and Plans Related to Bicycling

3.1 Federal – AASHTO, USDOT - FHWA, SAFETEA-LU

The Guide for the Development of Bicycle Facilities by the American Association of State Highway and Transportation Officials (AASHTO) is commonly accepted as the “best practices” for building bicycle facilities. The Wisconsin Bicycle Facility Design Handbook, by WisDOT, however, meets or exceeds all AASHTO guidelines.

The Manual on Uniform Traffic Control Devices by the US Department of Transportation (USDOT) Federal Highway Administration (FHWA) contains currently acceptable signage for use on bicycle facilities, as well as experimental signs. mutcd.fhwa.dot.gov/

Congress firmly established the principle that the safe accommodation of bicycling and walking is the responsibility of state and local transportation agencies, and that this responsibility extends to the planning, design, operation, maintenance, and management of the transportation system in federal transportation law, including the Intermodal Surface Transportation Efficiency Act (ISTEA), its reauthorization, the Transportation Equity Act for the 21st Century (TEA-21), and its reauthorization, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), www.americabikes.org/resources_policy_bicyclefriendly.asp

The Federal Highway Administration Program guidance on the federal transportation bills states that “In the planning, design, and operation of transportation facilities bicyclists and pedestrians should be included as a matter of routine and the decision not to accommodate them should be the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by designing highways that are incompatible with safe, convenient walking and bicycling.”

3.2 State - Wisconsin Department of Transportation (WisDOT)

The Wisconsin Bicycle Transportation Plan 2020 (WisDOT September 1998) is intended “to establish bicycling as a viable, convenient, and safe transportation choice throughout Wisconsin.” The role of the state plan is “ensuring an interconnected transportation system across government boundaries and highway jurisdictions that can work safely for bicyclists...” The recommendations in the Village Bicycle Master Plan should contribute to achieving the two primary goals of the state plan: doubling the number of bicycle trips by 2010, and reducing crashes involving bicyclists and motor vehicles by 10% or more by 2010. www.dot.state.wi.us/projects/state/bike2020.htm

The Wisconsin Bicycle Facility Design Handbook meets or exceeds federal (AASHTO) guidelines (referenced in SEWRPC Plans), and should be used preferentially over the AASHTO Guide for the Development of Bicycle Facilities. It is available from the state bicycle and pedestrian coordinator, Tom Huber, (thomas.huber@dot.state.wi.us), and also online at www.dot.wisconsin.gov/projects/state/docs/bike-facility.pdf.

Although intended for larger communities, the Wisconsin Bicycle Planning Guidance: Guidelines for MPOs & Communities in Planning Bicycle Facilities still contains useful information about the importance of planning a complete bikeway network.

www.dot.state.wi.us/projects/bikes.htm

3.3 Regional - Southeastern Wisconsin Regional Planning Commission (SEWRPC)

The Village of Sturtevant Bicycle Master Plan has been coordinated with the development of regional bicycle transportation network. Many of the Village’s bikeways are part of a regional network and will be developed and implemented with anticipated cooperation.

The KRM: A Plan for the Kenosha-Racine-Milwaukee Commuter Link (SEWRPC) indicates that Sturtevant is within the KRM service area. This service area indicates that combined with safe and convenient bicycle routes throughout Sturtevant, Mount Pleasant, and Racine, this could make it possible for residents to use multimodal alternatives to get to Kenosha, Milwaukee, and Chicago. www.sewrpc.org/KRMonline/

The Regional Transportation System Plan for Southeastern Wisconsin: 2035 (SEWRPC Planning Report No. 49) includes SEWRPC’s vision for transportation in the region:

“A multimodal system with high quality public transit, bicycle and pedestrian, and arterial street and highway elements which add to the quality of life of Region residents and support and promote expansion of the Region’s economy, by providing for convenient, efficient, and safe travel by each mode...” Also useful is chapter IV: Regional Travel Habits and Patterns, which can serve as a baseline (e.g. for measuring local progress in goals such as WisDOT’s to double the number of trips by bicycle).

www.sewrpc.org/regionalplans/regionaltransysplan.shtm

The Amendment to the Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin: 2020 (SEWRPC) “seeks to remove existing impediments to bicycle travel related to the lack of bicycle paths, the lack of safe accommodation on streets and highways, and the lack of support facilities such as bicycle parking and storage lockers. The plan recommends that improvements such as extra-wide outside travel lanes or paved shoulders be considered to be provided whenever an arterial street or highway is constructed or reconstructed to better accommodate shared roadway use by bicycles and motor vehicles.” pp 2.

In addition, *The Amendment to the Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin: 2020* has identified Racine County has an important regional urbanized area and thus has recommended that a denser bicycle network be implemented to serve transit stations and a greater population. This reference has also been identified in the regional land-use plan for the area. SEWRPC has identified this area as having a greater potential for utilitarian bicycle mode choice. The SEWRPC regional plan has designated Braun Road along the southern border of the Village to become a on-street bicycle facility, a bicycle way along the east-west Waxdale Spur railroad corridor in the center of the Village, and an on-street bicycle facility along 90th Street.

<http://www.sewrpc.org/transportation/amendmentbikeped.asp>

3.4 Local Policies and Plans

3.4.1 Village of Sturtevant

The Village currently does not have a Comprehensive Plan. Therefore, if a Comprehensive Plan should become codified by the Village, this PLAN should be incorporated into the language which dictates any future land-use predictions in order to facilitate a complete regional bicycle network and accomplish the goals set out in this document

3.4.2 Racine County

Although Racine County has no bicycle plan of their own, Racine County is using SEWRPC's *Amendment to the Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin: 2020* as a guide for planned and proposed bike projects. Those projects that affect or are adjacent to The Village of Sturtevant are included in 6.1 Recommended Bicycle Facilities. In addition, Racine County has recently applied for Congestion Mitigation and Air Quality (CMAQ) funding to extend a bicycle trail extension from Willow Road west over the railroad tracks. The application is pending but regardless, affects the regional bicycle network and the Village of Sturtevant's mode choice options.

3.4.3 Surrounding Communities

The Village of Sturtevant is located in the center of an ever-growing region. Therefore, the communities that surround it have a great impact on the success of non-motorized transportation within the Village boundary. Specifically, bicycling in the Village is dependent on connections to area-wide bicycle facilities. There currently exist proposed and existing bicycle trails, bicycle lanes, and bicycle routes in Racine County and the Village of Mount Pleasant, which should connect the Village of Sturtevant. Even though the recommendations on bicycle facility type are flexible depending on site specific conditions, the main objective is to develop a practical circulation within and outside the Village. With the implementation of the proposed bicycle facilities in the Village, the bicycle network can provide a vital bicycle link to these communities and make possible a regional bicycle trail system.

It will be important for the Village of Sturtevant to work with the county, Village of Mt. Pleasant, other villages and towns to ensure that connections between the various jurisdictions are created in a manner to facilitate a complete bicycle network as any road construction project, development or redevelopment project ensues. One way to foster this cooperation is via a Memoranda of Understanding between surrounding municipalities. With the advent of holistic views on development patterns and transportation systems, it is prudent that a cooperative and comprehensive bicycle network strategy follow suit. This goal can only become a reality through cross-jurisdictional cooperation. Additionally, the Village of Sturtevant should encourage other municipalities in the region to begin creating bicycle plans of their own to incorporate into their long-range transportation and comprehensive plans.

Chapter 4 – Enforcement, Education, & Encouragement

There is a common perception that bicycling on streets is dangerous. This concern keeps people from bicycling more, or at all. In addition to engineering (facilities), discussed in Chapter 6, enforcement, education, and encouragement can all be used to effectively counter the perception that bicycling for transportation is unsafe. The “four Es” are all key components to achieving the PLAN’s goals of increasing the number of trips by bicycle and improving the safety and convenience of the bicycling environment.

4.1 Enforcement

For enforcement to be effective, law enforcement officers need to know which illegal behaviors are the most common factors in crashes. Wisconsin’s Pedestrian and Bicycle Law Enforcement training course, available through Larry Corsi through the Wisconsin Department of Transportation (WisDOT) Bureau of Transportation Safety, teaches just that. The course also qualifies towards the training hours required of most law enforcement agencies. Contact Larry.Corsi@dot.state.wi.us, or 608-267-3154.

The rules for riding bicycles on the road (and rules for motorists sharing the road safely with bicycles) are online at www.dot.state.wi.us/safety/vehicle/bicycle/rules.htm.

WisDOT also distributes, free, printed safety materials such as a Summary of Wisconsin Bicycle Laws (HS226), and a Bicycle Law Card (HS221) that fits in a wallet. Request these materials using form DT1265 at www.dot.wisconsin.gov/forms/docs/dt1265.doc.

WisDOT’s Division of Motor Vehicles Motorist Handbook includes nearly ten pages of information on bicycling safely and on motorists sharing the road safely with bicyclists.

In addition to training police in law enforcement for bicycle safety, training drivers of commercial vehicles to model behavior can bolster enforcement by police officers. The Village of Madison, for example, educates all drivers of Village vehicles about the state statutes that require drivers to yield to pedestrians in crosswalks and to give all vehicles (including cyclists) 3 feet of clearance when passing.

4.2 Education

Educating motorists and bicyclists to share the road will establish safer, more inviting streets for bicycling. Bike Rodeos, Bike Ed and Safe Routes to School initiatives are three examples of established bicycle education programs. These programs are historically conducted and encouraged at by schools. There currently exists one public elementary school in the Village of Sturtevant, Schulte School. Schulte School should take the lead in incorporating lockable storage areas for bicycles and encourage bicycle usage internally and externally. One idea for the school is to endorse a “Bike to School Week”, which could start on Earth Day. Additionally Schulte School is advised to investigate the feasibility of obtaining Safe Routes to School Funding from the Wisconsin Department of Transportation.

The purpose of the Federal Safe Routes to School (SRTS) Program is to address the decline in children walking and bicycling to school. In 1969, about half of all students walked or bicycled to school. Today, however, fewer than 15 percent of all school trips are made by walking or bicycling, one-quarter are made on a school bus, and over half of all children arrive at school in private automobiles. This decline in walking and bicycling has had an adverse effect on traffic congestion and air quality around schools, as well as pedestrian and bicycle safety. In addition, a growing body of evidence has shown that children who lead sedentary lifestyles are at risk for a variety of health problems such as obesity, diabetes, and cardiovascular disease. Safety issues are a big concern for parents, who consistently cite traffic danger as a reason why their children are unable to bicycle or walk to school. The SRTS Program empowers communities to make walking and bicycling to school a safe and routine activity once again. The Program makes funding available for a wide variety of programs and projects, from building safer street crossings to establishing programs that encourage children and their parents to walk and bicycle safely to school.

SRTS Background

With the passage of SAFETEA-LU, the newest federal transportation act, a national SRTS program was established for the first time. Each state has received money in proportion to the number of grade school students (k-8) to increase the number and safety of students walking and biking within a 2-mile radius of elementary and middle schools. The Wisconsin Department of Transportation is administering the funds and awarding no-match grants to local schools, school districts, cities, and non-profits. The Wisconsin Program has three components.

Planning Grants assist communities in the development of SRTS programs

Infrastructure Grants allow communities to make physical changes that influence the safety of active transportation to school like building trails or painting crosswalks

Non-Infrastructure Grants include education, encouragement, and enforcement efforts

Renee Callaway is coordinating the WI program that will disperse a total of 7-8 million by 2009. She is available to assist communities with the process and has developed a Safe Routes to School Toolkit for Wisconsin. Applications for 2007 were due March 16th and applications for 2008 will be due next March.

The first round of Wisconsin Department of Transportation SRTS grants is currently being reviewed. Community interest in the program has been great and over 15 million dollars of requests were made. Unfortunately, competition will be stiff, as only 4 million dollars will be dispersed in this cycle.

Bike Rodeos can be effective tools for teaching kids safe bicycling basics, but only when those running the rodeos know what the most common kinds of child bicyclist crashes are, and what skills kids need to avoid them. Teaching Safe Bicycling is a course that does just that. Like Wisconsin's Pedestrian and Bicycle Law Enforcement Training, Teaching Safe Bicycling is a course coordinated by Larry Corsi, the Bicycle & Pedestrian Safety Program Manager for WisDOT's Bureau of Transportation Safety. Contact Larry.Corsi@dot.state.wi.us, or 608-267-3154.

Bike Ed is a group of courses developed by the League of American Bicyclists (LAB) to suit the needs of any cyclist. LAB certifies, insures and equips League Cycling Instructors (LCI)s to teach anything from basic skills to college level courses. LCIs are the experts in bicycle education and safety. Courses offered include: Road I, Road II, Commuting, Motorist Ed, Kids I and Kids II. LCI's can also offer modified versions of these courses and design bike rodeos and provide general safety consulting.

Road I

Gives cyclists the confidence they need to ride safely and legally in traffic or on the trail. The course covers bicycle safety checks, fixing a flat, on-bike skills and crash avoidance techniques and includes a student manual. Recommended for adults and children above age fourteen, this fast-paced, nine-hour course prepares cyclists for a full understanding of vehicular cycling.

Road II

For more advanced students with an understanding of vehicular cycling principles, this twelve-hour course includes fitness and physiology, training for longer rides, advanced mechanics, paceline skills, advanced traffic negotiation, foul weather riding and night riding. Student manuals are included with each class.

Commuting

For adult cyclists who wish to explore the possibility of commuting to work or school by bike. This three-hour follow-up to Road I covers route selection, bicycle choice, dealing with cargo and clothing, bike parking, lighting, reflection, and foul weather riding. Included with the class are handouts and student materials.

Motorist Education

A 3-hour classroom session, this course can be easily added to a driver's education curriculum, such as diversion training for reckless drivers or a course designed local bus drivers. Directed towards motorists in general, topics covered include roadway positioning of cyclists, traffic and hand signals, principles of right-of-way and left and right turn problems. Materials include Share the Road literature for bicyclists and motorists as well as other fact sheets.

Kids I

Designed for parents, instructors explain how to teach a child to ride a bike. Topics covered include how to perform a bicycle safety check, helmet fitting and bike sizing. The course includes the 10-minute 'Kids Eye View' video and a brochure for parents.

Kids II

This 7-hour class for 5th and 6th graders covers the same topics as Road I, including on-bike skills as well as choosing safe routes for riding.

The Bicycle Federation of Wisconsin has trained dozens of people in Wisconsin to teach the League of American Bicyclist courses, and BFW can connect those interested in taking Bike Ed with the closest LCI. Contact the League of American Bicyclists, www.bikeleague.org/programs/education/courses.php, or the Bicycle Federation of Wisconsin, www.bfw.org or 608-251-4456, for more information about Bike Ed in Wisconsin.

4.3 Public Village: Education and Encouragement

Publicizing bicycling is both education and encouragement. By producing and distributing bicycle education material, the Village can provide bicyclists, and potential bicyclists, with the information

they need to bicycle safely and comfortably. WisDOT provides a range of safety materials for free to anyone requesting them by their publication number.

Of the safety materials WisDOT provides related to bicycling, the best materials include: Wisconsin Bicycle Laws card (HS 221), Bicycle Safety-What Every Parent Should Know (HS 239), From A to Z by Bike (HS 214, for ages 11-adult), Bicycle Safety: A 'Wheely' Good Idea (HS 213, handbook for ages 8-11), Bicycles & Traffic-Get Over Your Fear (brochure HS 238), Two-Wheeled Survival (brochure HS 227), Sharing The Road: Survival of the Smallest (brochure HS 228), Street Smarts (updated brochure HS 207), and Share the Road with Bicycles (bumper sticker HS 237).

Request materials from WisDOT by publication number using the form found at www.dot.wisconsin.gov/forms/docs/dt1265.doc.

Collaborating with other agencies and organizations will help deliver bicycle information more effectively. For example, bicycle education should be integrated into school curricula and park programs so that many more children learn to bicycle more safely and frequently. Collaborating with media outlets and the private sector will further increase the reach of education campaigns. The Village could also make use of the website www.Streetshare.org to promote bicycling and walking, and to educate citizens about bicycling and walking in the community. Contact Dave Schlabowske, the Village of Milwaukee's Bicycle & Pedestrian coordinator, to set up a link from www.StreetShare.org.

Often adults are unwilling to bicycle simply because they are unaware of the safest routes to get to their destinations by bicycle. A map for bicyclists can address that, and tips for safe bicycling can be provided on the back of the map.

4.3.1 Bike to Work Week

Bike to Work Week (BTWW) is a promotional campaign that has succeeded in increasing the numbers and safety of individuals who bike to work, shop, school, or wherever they need to go in the communities where it has taken place. The Bicycle Federation of Wisconsin produces a toolkit for concerned citizens to start encouraging bicycling in their community through Bike to Work promotions, online at www.bfw.org/btww/howtoBTWW_single_pdf.pdf.

4.3.2 Bicycle Map

Producing and distributing a Village map for bicyclists can go a long way towards encouraging and educating citizens. The Bicycle Federation of Wisconsin has produced a bicycle map for Milwaukee,

and has the capability of producing a bicycle map for The Village of Sturtevant. Such a map could not only educate citizens about the best routes for bicycling, but could also help teach them to safely share the road with motor vehicle traffic by using safety tips and illustrations on the reverse of the map itself. An overwhelming 86% of respondents to the survey indicated that a bicycle map of the area would positively (41% “greatly,” 45% “moderately”) affect their decision to bicycle more.

In creating a bicycle map, it will be extremely important to gather more information from the public regarding the map content. From previous bicycle mapping projects completed by the Bicycle Federation of Wisconsin, map users have expressed that it is very important to include the following characteristics:

- All bicycle facilities, including signed routes, bike lanes, and bike trails, depicted
- Public amenities, such as restrooms, parks, emergency services, and private amenities, such as bike shops, should all be displayed.
- Map scale should be appropriate for users to easily determine travel distance, and the map should have as many roads as feasible labeled.
- A digital version of the map should be available on-line

Geographical Information Systems (GIS) technology would be the best method to create the bicycle map. One of the purposes of the PLAN is to provide a facilities network map, and using GIS is the most expedient means for updating the map (and the plan) in the future.

The cost of creating a bicycle route map can be divided into two parts: the cartography work and the printing and distribution. An itemized list of specific tasks and related costs can be found in the appendix, but a summary cost for cartography work is estimated at about 150 hours. Consulting rates range from \$40 to \$120 and higher per hour. An itemized list of estimated costs for producing and map can be found in the appendix.

Printing can be difficult to estimate since choice of color, paper stock, and number of copies printed all have a significant effect on price. In 2005, Milwaukee County updated their bicycle map, and printed 100,000 copies, or enough maps for about 10% of their population, which is projected to be enough to last for about 3 years before a reprint is needed. The cost for a standard paper stock and a four color double sided 26”x36” map was about \$25,000. Enough maps for 10% of residents of

Sturtevant and the surrounding community of Mount Pleasant would be about 3,000 copies, and could around \$1000, although printing smaller quantities sometimes costs more per unit than printing larger quantities

Often at least some of the funds for a bicycle map can be procured from advertising fees from local businesses wanting representation on the map. It might also be possible to partner with the County of Racine and neighboring communities on a more regional map. The Village could also charge for each copy of the map, but the administrative costs of charging for each copy may exceed the revenue gained. A bicycle map is also more likely to be an effective educational strategy if it is available for free.

4.3.3 Other Avenues for Bicycle Publicity in the Village

In addition to a bicycle map, and education programs described above, there are other ways to get the word out that bicycling is a viable means of transportation and recreation. The Village could work with the area chamber of commerce, and with Wisconsin's Department of Tourism to publicize bicycling. Television and/or radio Public Service Announcements about safe bicycling and motorists safely sharing the road with bicycles could be produced and aired. Advertising in newspapers, on billboards, and on buses can gain bicycling exposure.

Chapter 5 – Existing Conditions, Goals, and Performance Measures

5.1 Existing Conditions

The Village currently includes approximately 1.0 miles of on-street bicycle facilities (bike route), consisting of one route along Braun Road starting from County Highway H and ending approximately 700 feet east of Willow Road. The existing bike route is also along the southern boundary for the Village and is shared with Racine County. This bike route is integral to the connectivity of a regional bicycle transportation system.

5.2 Goal

The goal of the Village of Sturtevant Bicycle Master Plan is improving the levels, safety, and convenience of bicycling in the Village by accommodating bicycling in every Village, County, and State road construction, resurfacing, streetscape, and traffic calming project in and connecting to the Village. Additionally, create safe routes to and from all schools in the Village by 2025 by applying for “Safe Routes to School” funding at this time. More specific goals regarding bicycle facilities and policies, and measures of performance follow:

5.2.1 Existing and Proposed Bikeway Network:

| | 2007 Existing (Miles): | Proposed (Miles): |
|-------------------|------------------------|-------------------|
| Bike Lane | 0 | 2.96 |
| Trail | 0 | 6.84 |
| Signed Bike route | 1.00 | 1.00 |

5.3 Recommended Actions

Many things the Village can do to encourage bicycling, and make bicycling safer and more convenient are not specific to any particular street or trail. The following actions are all recommended:

- Enact an ordinance requiring an adequate amount of bike parking in an appropriate location for all new commercial and industrial development and redevelopment.
- Enact an ordinance requiring all new subdivisions to reserve greenspace where off-street paved (asphalt or concrete) bicycle trails could be developed with connections to the existing or future bicycle facility network. Further, it is recommended that developers construct, or pay all cost of initial construction of such bicycle facilities, and then turn over ownership and maintenance of facilities to the Village.
- Create a Village policy for “complete streets,” i.e., that plans for construction of new roads, or reconstruction of existing roads, shall include appropriate accommodations for bicyclists and

pedestrians. Examples of language include: "The safety and convenience of all users of the transportation system, including pedestrians, bicyclists, transit users, freight and motor vehicle drivers shall be accommodated and balanced in all types of transportation and development projects and through all phases of a project ..." "Provide bicycle and pedestrian accommodations along and across all streets and roadways in conjunction with construction and reconstruction where feasible and appropriate in accordance with the U.S. Department of Transportation Design Guidance on Integrating Bicycling and Walking into Transportation Infrastructure." Federal Highways Administration language can be found online at www.fhwa.dot.gov/environment/bikeped/design.htm.

- The Village of Sturtevant should have an appointed bicycle advisory task force committee. The committee ought to be comprised of Village Staff and Sturtevant residents and appointed by the Village President. Duties of the task force will be: encourage intergovernmental cooperation, through memoranda of understanding, to create connections for bicycles from the Village to adjacent municipalities.

5.4 Measures of Performance

Measures of performance determine measure progress made towards the goal of the Village of Sturtevant Bicycle Master Plan to increase the levels, safety, and convenience of bicycling in the Village.

- Bicyclists' needs are accommodated in every local, county, or state roadway project undertaken in or adjacent to the Village by 2011.
- 10% of bike lane, bike route, and path mile goals for 2016 achieved annually, beginning in 2008.

Chapter 6 – Recommended Facility Plan

6.1 Recommended Bicycle Facilities

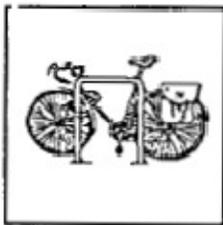
6.1.1 Bicycle Parking

Just as ordinances and development codes require off-street parking for motor vehicles, bicycle parking should be required of all new or expanded development. The amount of bicycle parking provided can be determined as a percentage (e.g. 10%) of the amount of motor vehicle parking

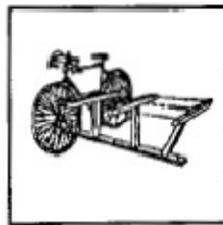
required, or other methods can be used. It is important that in all cases where any bicycle parking is required, no fewer than two bicycle parking spaces should be required. Bicycle parking requirements can be fulfilled by lockers, racks, or equivalent structures in or upon which a bicycle may be locked by the user. The design and location of bicycle parking racks can make them safe, secure, and convenient, or dangerous and useless for parking bicycles.

The City of Madison has an excellent set of parking requirements, along with great information about the design and location of facilities to meet their requirements, all available online at www.ci.madison.wi.us/transp/z2811bik.pdf. Another good reference is the Association of Pedestrian and Bicycle Professionals *Bicycle Parking Guidelines*, available online at www.bfbc.org/issues/parking/apbp-bikeparking.pdf.

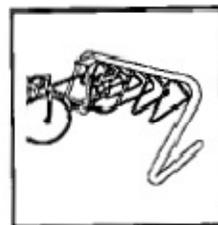
BICYCLE LOCKER



Bike Rail



3-pt. Locking



Freestanding

6.1.2 On-Street Facilities

A table of recommended on-street facilities follows. Although the priority of construction is not precisely ranked, facilities that should have a higher priority of construction are grouped nearer the top, and facilities with lower priority are grouped nearer the bottom.

| Location | Length | Type | Purpose/Connection | Notes |
|---|-----------|-----------|----------------------------|--|
| 90 TH Street – N. Frontage Road (approx. Hwy 20) south ending at Braun Road. | 2.5 miles | Bike Lane | Non-motorized Connectivity | Road width adequate bicycle comfort level, only needs striping. Integral connection to Village of Mount Pleasant bicycle network. |
| Broadway Drive- From 90 th Street west to 97 th Street | .45 miles | Bike Lane | Non-motorized Connectivity | Road width adequate bicycle comfort level, only needs striping. Access for medium density residential to 90 th St bike lane |

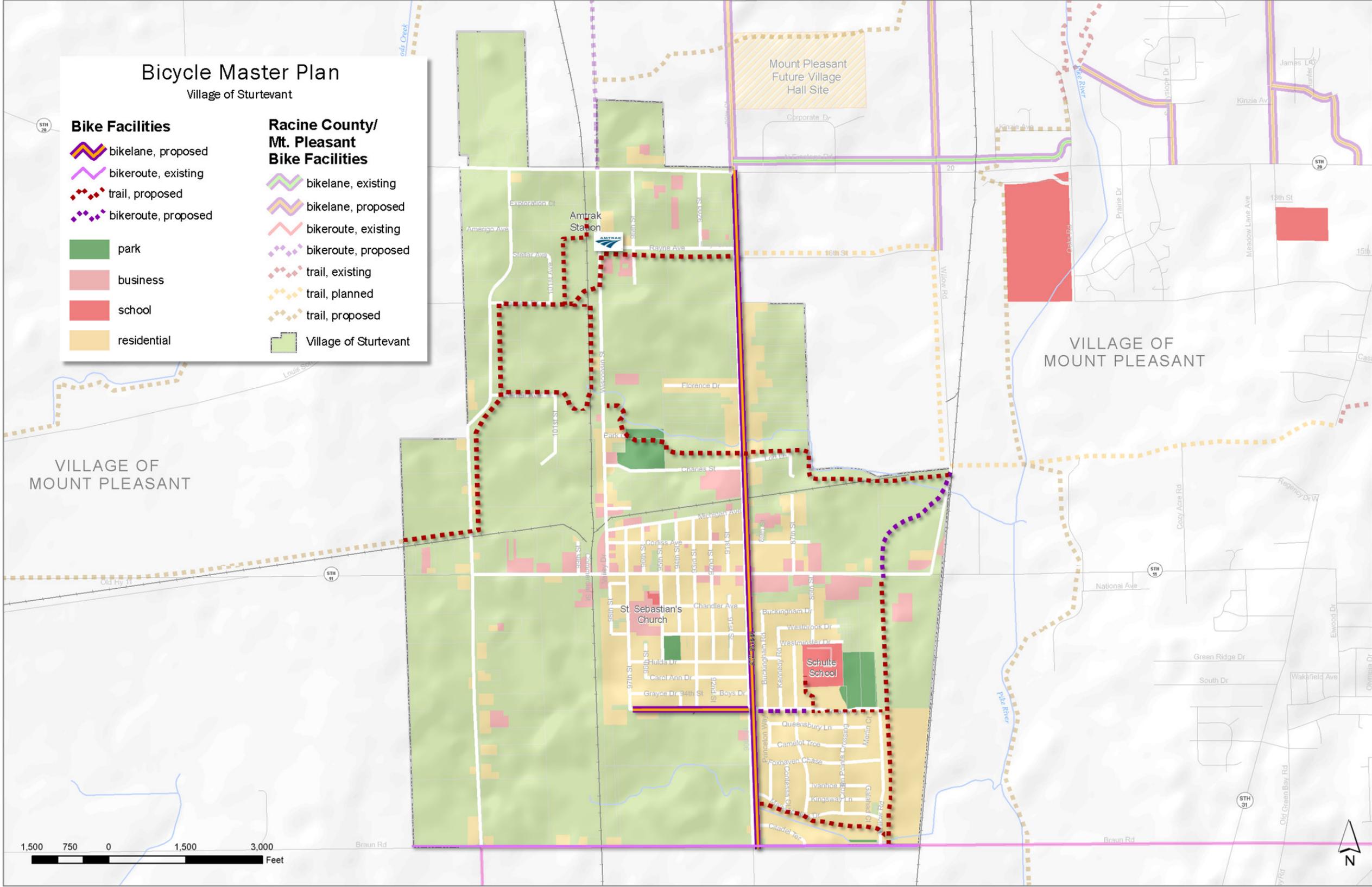
6.1.3. Off-Street Facilities

A table of recommended off-street facilities follows. Although the priority of construction is not precisely ranked, facilities that should have a higher priority of construction are grouped nearer the top, and facilities with lower priority are grouped nearer the bottom.

| Location | Length | Type | Purpose/Connection | Notes |
|---|-----------|------------|---|---|
| Along Rayne Ave – 90 th Street west to Wisconsin Street | .50 miles | Bike Trail | Non-motorized trail | Connection from 90 th street to Amtrak station proposed bike trails |
| Starting from Rayne Ave southwest to Science Drive | .30 miles | Bike Trail | Non-motorized trail Connectivity and multi-modal integration | Vital Amtrak connection. Connection to proposed bike lane, Amtrak station and village boundary. Route viability depended on bridge over railroad tracks and funding |
| Amtrak Station south along 101 st Avenue ending at Science Drive | .44 miles | Bike Trail | Non-motorized trail Connectivity and multi-modal integration | Vital Amtrak connection. Connection to proposed bike lane, Amtrak station. |
| Science Drive – from 101 st Avenue west ending at CTH H | .21 miles | Bike Trail | Non-motorized trail | Connection to adjacent proposed bike trail system surround Amtrack station and Industrial complex |
| CTH H – Starting at Science Drive ending at Venice Ave | .34 miles | Bike Trail | Non-motorized trail | Connection within and to Industrial Park |
| Starting at east terminus of Science Drive and extending southward to Venice Avenue | .39 miles | Bike Trail | Non-motorized trail | Trail along west side of railroad tracks connecting to proposed trails west of industrial park |
| Venice Avenue – CTH H west to proposed bike trail along railroad | .41 miles | Bike Trail | Non-motorized trail | Trail to connect proposed trail along CTH H and bike trail along railroad |
| CTH H – Venice Avenue south to railroad | .53 miles | Bike Trail | Non-motorized trail | Trail along CTH H to connect to Mount Pleasant proposed trail system |

| | | | | |
|---|-----------|------------|---------------------|---|
| Wisconsin Street to 90 th street | .64 miles | Bike Trail | Non-motorized trail | Connection to proposed bike lane and to existing park and residential land uses |
| 90 th street to Willow Road | .86 miles | Bike Trail | Non-motorized trail | Connection to proposed bike route and planned Mount Pleasant bike trail |
| Willow Road – Hwy 11 south to Braun Road | .98 miles | Bike Trail | Non-motorized trail | Connection to existing Mount Pleasant bike facility and proposed bike route. Also connection to park and school |
| Broadway Drive – starting from Willow Rd and Broadway Dr. intersection extending west to Kensington Square Road | .24 miles | Bike Trail | Non-motorized trail | Connection to Willow Road and to proposed bike route. Access to park and school |
| Adjacent west of Schulte School – starting from Broadway Dr. terminating at school | .17 miles | Bike Trail | Non-motorized trail | Access to park and school. Connection to proposed bike route |
| Adjacent to un-named tributary - Willow Road to 90 th Street | .48 miles | Bike Trail | Non-motorized trail | Route through greenway corridor |
| Broadway Drive – 90 th street to easterly park and school | .24 miles | Bike Route | Non-motorized trail | Connection to park and school, and to proposed bike lane and bike trail |
| STH 11 northeasterly to Willow Road | .52 miles | Bike Route | Non-motorized trail | Connection to major thoroughfare and to proposed Mount Pleasant bike trail, and proposed bike trail |

6.2 Recommended Bicycle Facility Map



6.3 Construction and Maintenance Costs

Wisconsin uses the "marginal cost" approach. In the marginal cost approach, the per-unit costs of bicycle improvements are those costs over and above the costs of the project without bicycle accommodation. Typically, right-of-way costs and the costs of relocating utilities are not included in these cost estimates for bicycle facilities. Following are some examples of costs to construct various bicycle facilities from various sources.

From WisDOT's Bicycle Transportation Plan:

Paved shoulder, 3 feet both sides; over gravel shoulder: \$20,000/mile

Paved shoulder, 5 feet both sides; over gravel shoulder: \$33,000/mile

Wide curb lane (one or two feet added, both sides): \$15-50,000/mile

Bike lane, five/six feet, both sides: \$25-90,000/mile

Bike path (final limestone surface): \$10,000/mile

Bike path (asphalt, 12 feet, landscaped etc): \$200,000/mile (minimum)

Where bicycle accommodations can be made simply by changing the pavement markings, the costs are obviously much lower. The following is a cost estimate, including labor costs for the area, for a bike lane striping project completed in Milwaukee, WI, in the summer of 2005. The entire project was completed with water borne paint that has a life expectancy of 1 year. From observation, however, much of the paint will last more than 1 year. In areas where Milwaukee's Village buses constantly crossed the stripes, the paint did actually wear away in 1 year:

Pavement marking removal: \$0.95/linear foot, or \$5016.00/mile

4" wide stripe: \$0.11/linear foot, or \$580.08/mile

6" wide stripe: \$0.17/linear foot, or \$897.60/mile

Bike symbol pavement marking: \$33.00/symbol

Arrow pavement marking: \$25.00/symbol

From another recent WisDOT project in Milwaukee:

| | |
|------------------------------|--------------------|
| 4" stripe paint: | \$0.20/linear foot |
| 4" stripe Epoxy: | \$0.37/linear foot |
| 4" stripe preformed plastic: | \$1.82/linear foot |
| 6" stripe epoxy: | \$1.30/linear foot |
| Bike lane arrows epoxy: | \$54.99/symbol |
| Bike lane symbols epoxy: | \$63.99/symbol |
| Bike lane words epoxy: | \$54.53/symbol |

Thermoplastic striping installed in the Village of Chicago had the following costs:

| | |
|---------------------------|--|
| 4" stripe thermoplastic: | \$.52/linear foot, or \$2745.60/mile |
| 6" stripe thermoplastic: | \$.78/linear foot, or \$4118.40/mile |
| 8" stripe thermoplastic: | \$1.04/linear foot, or \$5491.20/mile |
| 12" stripe thermoplastic: | \$3.40/linear foot, or \$17952.00/mile |
| Bike symbol: | \$207/symbol |
| Arrow: | \$109/symbol |

For Signed Bike Routes, the AASHTO Guide recommends signing a shared roadway as a bike route every 1/4 mile (500m) and before and after every turn (both to mark the turn and to confirm that the rider has made the correct turn). Costs per sign found online vary from \$100-200/sign, installed.

From the Virginia Department of Transportation, the (year 2000) costs for constructing the following bicycle facilities:

| | |
|---|------------------------------------|
| Bike path, 10 foot wide: | \$92,000/mile |
| Bike lanes, 4 foot each side w/curb and gutter: | \$270,300/mile |
| Bike lanes, 5 foot each side w/mountable curb: | \$281,100/mile |
| 4" stripe: | \$0.60/linear foot, or \$3168/mile |

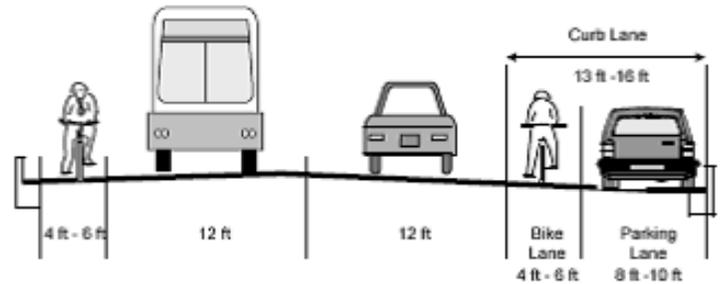
The Village should budget for engineering costs, including a contingency for cost overruns. Often the federal and state funding is awarded for a fixed amount, and will not cover cost overruns, so budgets should be made carefully. For example, an MPO elsewhere in the Midwest has, in the past, budgeted 20% of every project for engineering plus contingencies.

6.4 Design Guidelines and Signage

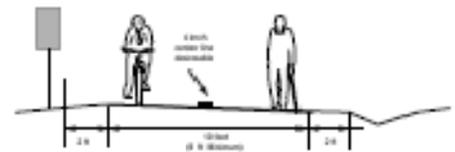
Although the Guide for the Development of Bicycle Facilities by the American Association of State Highway and Transportation Officials (AASHTO) is commonly accepted as the "best practices" for building bicycle facilities, the Wisconsin Bicycle Facility Design Handbook, by WisDOT, meets or exceeds all AASHTO guidelines, and, being specific to Wisconsin, tends not include alternative treatments that are less appropriate for cold climates. WisDOT's Wisconsin Bicycle Facility Design Handbook should therefore be the standard used by the Village for the design and construction of bicycle facilities or bicycle accommodations on roadways. The Wisconsin Bicycle Facility Design Handbook can be found on the WisDOT website at:
www.dot.wisconsin.gov/projects/state/docs/bike-facility.pdf

Several examples of appropriate designs for various bicycle facilities are shown here, but there are many more examples in the Wisconsin Bicycle Facility Design Handbook, and it should be the basis for any design. (Because off-street facilities are often used by pedestrians, skaters, and other users in addition to bicyclists, they are typically called "shared-use paths" in the Wisconsin Bicycle Facility Design Handbook, and sometimes called "multi-use paths elsewhere).

A Bicycle lane next to the curb on an asphalt roadway should be at least 5 feet wide. However, this should not include the gutter pan.¹⁷

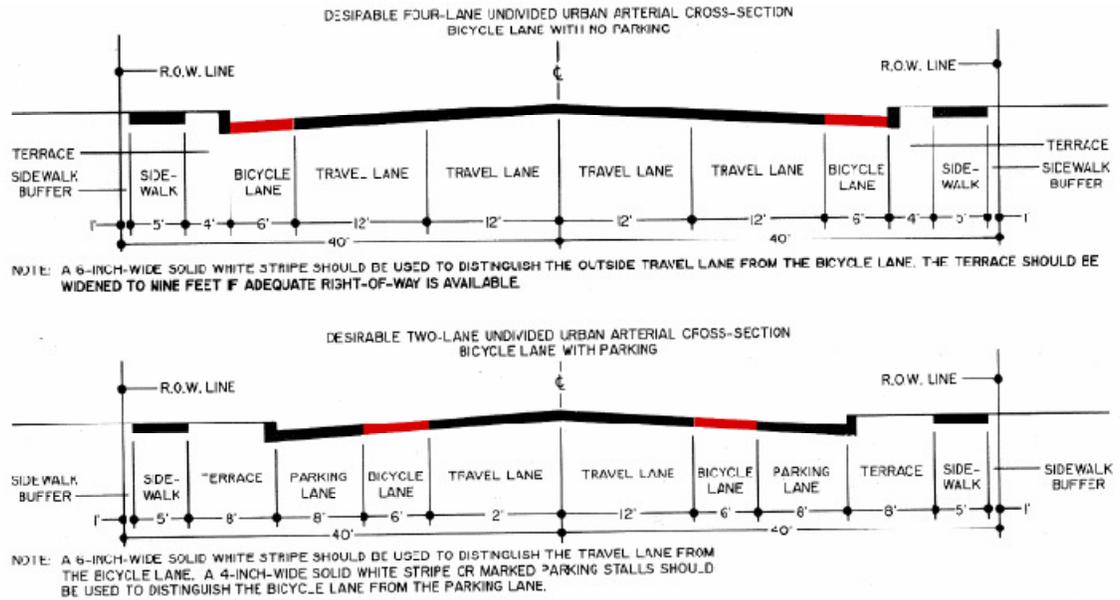


The standard width of a shared-use path. In areas with greater potential uses, adding extra width may be appropriate.¹⁸

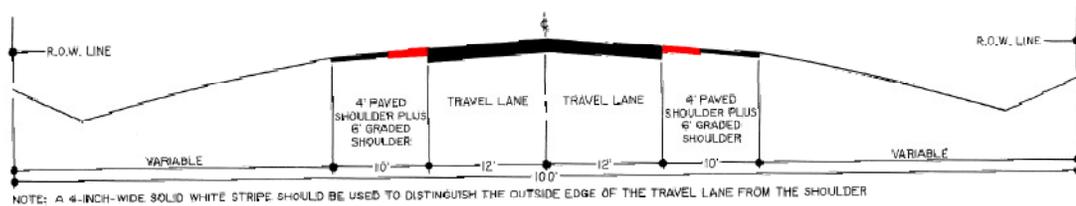


¹⁷ Figure 5 from Page 66 of WisDOT's *Wisconsin Bicycle Transportation Plan 2020*

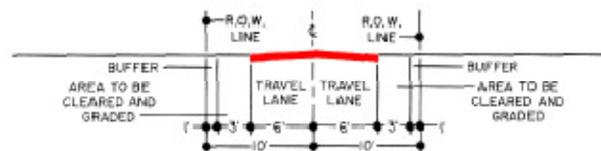
¹⁸ Figure 6 from Page 67 of WisDOT's *Wisconsin Bicycle Transportation Plan 2020*



Typical dimensions for a bicycle lane next to a parking lane and without parking.¹⁹



Typical dimensions for an off-street bicycle pathway.²⁰

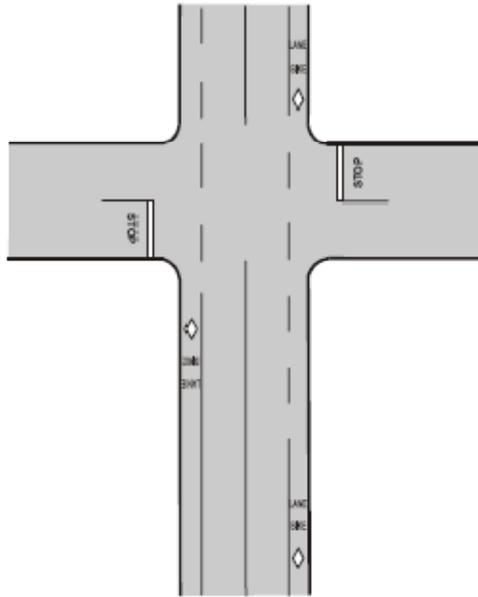


Desirable cross-section for bicycle paths in rights-of-way independent from street and highway rights-of-way.²¹

¹⁹ Figure A-2 from Page 45 of SEWRPC's *Amendment to the Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin 2020*

²⁰ Figure A-3 from Page 47 of SEWRPC's *Amendment to the Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin 2020*

²¹ Figure A-4 from Page 48 of SEWRPC's *Amendment to the Regional Bicycle and Pedestrian Facilities System Plan for Southeastern Wisconsin 2020*



Typical pavement markings for streets having bicycle lanes and no turning lanes.²²

6.5 Potential Funding Sources

Many different funding sources are available for accommodating bicycles through on-street or off-street facilities. In order to be eligible for funding under most federal aid programs, bicycle projects must be primarily for transportation purposes (the Recreational Trails Program is a notable exception). In general, federal guidelines consider any bicycle path or trail other than a closed loop trail as being principally for transportation and eligible for federal funding. State funding for the construction of on-street and off-street bicycle facilities is available through programs administered by the Wisconsin Department of Transportation (WisDOT), and includes funds provided directly by the state and “pass-through” funds provided by the Federal government as part of the Federal-aid Highway, Transit, and Highway Safety Programs.

6.5.1 Transportation-Based Funding Sources

The following is a summary of potential transportation-based funding sources for accommodating bicycles, from WisDOT:

²² Figure A-7 from Page 51 of SEWRPC’s *Amendment to the Regional Bicycle and Pedestrian Facilities System PLAN for Southeastern Wisconsin 2020*

Transportation Enhancement (TE) Program

Transportation enhancements (TE) are transportation-related activities that are designed to strengthen the cultural, aesthetic and environmental aspects of transportation systems. The transportation enhancements program provides for the implementation of a variety of non-traditional projects, with examples ranging from the restoration of historic transportation facilities, to bike and pedestrian facilities, to landscaping and scenic beautification, and to the mitigation of water pollution from highway runoff. Transportation enhancements are part of the Statewide Multimodal Improvement Program (SMIP). Approved projects are reimbursable at 80% of the cost, and a local match of 20% is required. A majority of the requests and projects awarded in Wisconsin have been for bicycle facilities. Examples of bicycle projects include multiuse trails (in greenways, former rail trails, road rights-of-way, etc.), paved shoulders, bike lanes, bicycle route signage, bicycle parking, overpasses/underpasses/bridges, and sidewalks. Transportation enhancement activities must relate to surface transportation. Federal regulations restrict the use of funds on trails that allow motorized users, except snowmobiles. The federal Transportation Equity Act for the 21st Century (TEA 21) expanded the definition of transportation enhancements eligibility to specifically include the provision of safety and educational activities for pedestrians and bicyclists, which had not been clearly eligible under the Intermodal Surface Transportation Efficiency Act (ISTEA), the original federal legislation.

Contact: WisDOT SE Region Bicycle & Pedestrian Coordinator Jill Mrotek, 262-548-8794, jill.mrotek@dot.state.wi.us, or TE Program Manager John Duffe, 608-264-8723, john.duffe@dot.state.wi.us.

Surface Transportation Program – Discretionary

The Surface Transportation Program – Discretionary provides grants primarily to local governments, transit or transportation commissions, etc. in areas with a population of greater than 5,000 for projects that promote non-highway use or supplement existing transportation activities. Approved projects are reimbursable at 80% of the cost, and a local match of 20% is required. Priority is given to projects that promote alternatives to single-occupancy vehicle trips. Like TE, these funds are also part of the SMIP. Funding has gone evenly to transit and bicycle/pedestrian projects in past years. However, in the last two state budgets, no money has been appropriated for this program. Nearly every bicycle project eligible under the Transportation Enhancement program is also eligible for this program, unless the project will clearly not reduce single-occupant vehicle trips. Unlike the Transportation Enhancement program, bicycle and pedestrian planning is eligible.

Contact: WisDOT SE Region Bike & Ped Coordinator Jill Mrotek, 262-548-8794, jill.mrotek@dot.state.wi.us, or John Duffe, 608-264-8723 john.duffe@dot.state.wi.us.

Congestion Mitigation and Air Quality Program (CMAQ)

The primary purpose of the Congestion Mitigation and Air Quality (CMAQ) Improvement Program is to fund projects and programs that reduce travel and/or emissions in areas that have failed to meet air quality standards for ozone, carbon monoxide (CO), and small particulate matter. Bicycle and pedestrian projects are eligible for CMAQ if they reduce the number of vehicle trips and miles traveled. Approved projects are reimbursable at 80% of the cost, and a local match of 20% is required. Almost all bicycle projects eligible for Transportation Enhancements and STP-D are likely to be eligible (see examples above), but a higher burden of proof that the project will reduce air pollution will be required for CMAQ funding. CMAQ is not a statewide program; only bicycle projects in Milwaukee, Kenosha, Racine, Ozaukee, Waukesha, Washington, Sheboygan, Kewaunee, Manitowoc, and Door Counties are eligible.

Contact: WisDOT District 2: Anita Pusch (262-548-8789), or WisDOT Program Mgr John Duffe, 608-264-8723, john.duffe@dot.state.wi.us.

Hazard Elimination Program

Bicycle and pedestrian projects are now eligible for this program. This program focuses on projects intended for locations that should have a documented history of previous crashes.

Contact WisDOT SE Region Bike & Ped Coordinator Jill Mrotek, 262-548-8794, jill.mrotek@dot.state.wi.us, for more details before contacting the statewide coordinator, Chuck Thiede, 608-266-3341.

Surface Transportation Program - Urban

Metropolitan areas receive an allocation of funds annually. These funds can be used on a variety of improvement projects including bicycle and pedestrian projects. Most of the Metropolitan Planning Organizations (MPOs) that administer this program have been using these funds to integrate bicycle and pedestrian projects as larger street reconstruction projects are taken on. SEWRPC is the MPO for Southeast Wisconsin.

Contact Chris Hiebert of SEWRPC, 262-547-6722 x281, chiebert@sewrpc.org.

Safe Routes to School Program

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the revised federal transportation act signed into law on August 10, 2005, provides funding to state departments of transportation to create and administer Safe Routes to School (SRTS) Programs. SRTS programs encourage children ages K-8 to walk and bike to school by creating safer walking and biking routes. SRTS Programs improve walking and biking travel options, promote healthier lifestyles in children at an early age and decrease auto-related emissions near schools.

Contact WisDOT's SRTS Coordinator, Renee Callaway, 608-266-3973, or renee.callaway@dot.state.wi.us

Incidental Improvements

Bicycle and pedestrian projects are broadly eligible for funding from most of the major federal-aid programs. One of the most cost-effective ways of accommodating bicycle and pedestrian accommodations is to incorporate them as part of larger reconstruction, new construction and some repaving projects. Generally, the same source of funding can be used for the bicycle and pedestrian accommodation as is used for the larger highway improvement, if the bike or pedestrian accommodation is "incidental" in scope and cost to the overall project. Overall, most bicycle and pedestrian accommodations within the state are made as incidental improvements.

6.5.2 Recreation-Based Funding Sources

The following information for potential recreation-based funding sources was culled from the Wisconsin Department of Transportation website.

Funding for the Recreational Trails Program (RTP) is provided through federal gas excise taxes paid on fuel used by off-highway vehicles. Towns, villages, cities, counties, tribal governing bodies, school districts, state agencies, federal agencies and incorporated organizations are eligible to receive reimbursement for development and maintenance of recreational trails and trail-related facilities for both motorized and non-motorized recreational trail uses. Eligible sponsors may be reimbursed for up to 50 percent of the total project costs.

Eligible projects include:

- Maintenance and restoration of existing trails
- Development and rehabilitation of trailside and trailhead facilities and trail linkages
- Construction of new trails (with certain restrictions on Federal lands)
- Acquisition of easement or property for trails
- Projects are ranked in order of funding priority
- Rehabilitation of existing trails
- Trail maintenance
- Trail development
- Trail acquisition

Wisconsin Department of Natural Resources (DNR) regional staff review and rank eligible projects. Projects are then ranked in a statewide priority listing. The highest ranking projects will be funded to the extent that funds are available.

Following you will find general program information for programs that provide up to 50% funding assistance to acquire land or conservation easements and develop facilities for outdoor recreation purposes – the Stewardship Local Assistance Grant Programs, the Federal Land & Water Conservation Fund Program, and the Federal Recreation Trails Program. Any project application submitted will be considered for each of the following programs that it is eligible for.

Under the Knowles-Nelson Stewardship Local Assistance Grant Program, the following programs provide 50% funding assistance to acquire land and easements and develop trails, facilities, etc. for nature-based outdoor recreation purposes.

Aids for the Acquisition and Development of Local Parks (ADLP)

ADLP helps to buy land or easements and develop or renovate local park and recreation area facilities (e.g., trails, fishing access, and park support facilities). Applicants compete for funds on a regional basis.

Urban Green Space Grants (UGS)

UGS helps to buy land or easements in urban or urbanizing areas to preserve the scenic and ecological values of natural open spaces for outdoor recreation, including non-commercial gardening. Applicants compete for funds on a statewide basis.

Urban Rivers Grants (UR)

UR helps to buy land or easements on or adjacent to rivers flowing through urban or urbanizing areas to preserve or restore the scenic and environmental values of river ways for outdoor recreation. This includes shoreline enhancements such as development of public recreation facilities or habitat restoration that serve public recreation or resource conservation purposes. The Urban Rivers Program has a cap per applicant based on 20% of the total funds allocated to the program each fiscal year. Applicants compete for funds on a statewide basis.

Acquisition of Development Rights Grants (ADR)

ADR helps to buy development rights (easements) for the protection of natural, agricultural, or forestry values, that would enhance outdoor recreation. Applicants compete for funds on a statewide basis.

Land and Water Conservation Fund (LWCF)

LWCF provides 50% funding assistance for the acquisition and development of public outdoor recreation areas and facilities. Similar to the Stewardship ADLP program above except that active outdoor recreation facilities are eligible for grant assistance and school districts may be eligible project sponsors. Applicants compete for funds on a statewide basis.

Recreational Trails Act (RTA)

RTA provides 50% funding assistance for the development and maintenance of recreational trails and trail related facilities for both motorized and non-motorized recreational trail uses. Applicants compete for funds on a statewide basis.

These programs are administered by the Wisconsin Department of Natural Resources. The Stewardship Advisory Council, with representatives from local units of government and nonprofit conservation organizations (NCOs), advises the department on matters relating to the Stewardship program. Similarly, the State Trails Council advises the department on matters relating to the Recreational Trails Program. The National Park Service plays the major role in working with the Department on the Land & Water Conservation Fund Program and the Department of Transportation plays a role with the Recreational Trails Program. Key components of the programs are cooperation and partnership between the Wisconsin Department of Natural Resources, the federal government, local units of government, and NCOs. The programs recognize the important role each partner plays in meeting the conservation and recreation needs of Wisconsin residents and is designed to assist groups working to meet those needs. The application deadline for all of the programs is May 1 each year. Complete applications should be submitted to the regional Community Services Specialist (CSS) on, or be postmarked by, May 1.

6.5.3 Other potential funding sources

In addition to the funds administered by the state, funding for public bicycle and pedestrian projects can come from federal highway traffic safety programs, federal traffic safety (section 402) funds, the County (Racine County Department of Public Works), impact fees required of new development or redevelopment, public/private partnerships, or wholly from the private sector.

Chapter 7 – Conclusion

7.1 Priority of Construction

Priority of construction is implicit in the ranking of on-street and off-street facilities, but it should be noted that bicycle facilities are always less costly to build in conjunction (and concurrently) with road or other construction projects. Therefore, it is always advisable to include segments of planned or even proposed bicycle facilities whenever plans for bicycle facilities coincide with construction or reconstruction projects for roads.

7.2 Concluding Vision

The Village of Sturtevant Master Plan sets forward a strategy to achieve goals that encourages safe bicycling. The recommendations herein need to be recognized by the community and government officials in light of growing support for multi-modal transportation systems not only among residents of the Village, but the region as well. Therefore, a sustainable circulation system can help alleviate the environmental externalities produced from the automobile, energy costs, and smart growth legislation, bicycling serves as a legitimate mode choice.

Supporting an expanded bicycling network can have myriad positive effects, including social, environmental, health, and economic benefits in addition to the obvious transportation benefits. By creating a transportation system that fully supports and encourages bicycling, the Village of Sturtevant will become a more attractive place to live and work.

Bicycling produces no air or noise pollution, decreases traffic congestion, reduces taxpayer burden, helps alleviate parking demand, saves energy, uses land and road space efficiently, provides mobility, saves citizens money, improves health, and is fun! The success of this Bicycle Master Plan will only be assured by the continued support of local government officials and its residents.

Appendices

A: Resources

American Association of State Highway and Transportation Officials (AASHTO)
Guide for the Development of Bicycle Facilities, 1999.

Bicycle Federation of Wisconsin, including the BTWW toolbox:
www.bfw.org.

Bicycle Parking Guidelines, Association of Pedestrian and Bicycle Professionals,
www.bfbc.org/issues/parking/apbp-bikeparking.pdf

Bicycle Parking In Madison,
www.ci.madison.wi.us/transp/z2811bik.pdf

Bicycle Transportation, John Forester, 2nd edition, 1994.

Bicycle Transportation Plan for the Madison Urban Area and Dane County, WI, Madison Area
Metropolitan Planning Organization, September 2000.

Village of Chicago, Bike 2015 Plan, Mayor's Bicycle Advisory Council, January 2006.
www.bike2015plan.org

Economic Impact of Bicycling in Wisconsin, Prepared for the Governor's Bicycle Coordinating Council
by the Bicycle Federation of Wisconsin with the Wisconsin Department of Transportation, spring
2006.

Effective Cycling, John Forester, 6th edition, 1993.

Institute of Transportation Engineers (ITE) Traffic Calming Library www.ite.org/traffic.

Manual on Uniform Traffic Control Devices (FHWA) mutcd.fhwa.dot.gov/.

Milwaukee by Bike: Bicycle Public Plan, Bicycle Federation of Wisconsin, 2003.

Milwaukee Off-Street Bikeway Study: Milwaukee's Best Opportunities for Trail Expansion, Bicycle Federation of Wisconsin.

Mount Pleasant I-94 Area Study by Lakota, Metro Transportation, and SB Friedman.
www.thelakotagroup.com/mtpleasant.htm

Mount Pleasant Year 2030 Master Plan for Land Use and Transportation

National Complete Streets Coalition, www.completestreets.org.

National Trails Partnership, The Economic and Social Benefit of Trails, March 2007,
<http://www.americantrails.org/resources/economics/MNecon.html>

Pathways to Prosperity - The Economic Impact of Investment in Bicycle Facilities: A Case Study (NCDOT)
www.ncdot.org/transit/bicycle/safety/safety_economicimpact.html

Predicting Demand for Non-motorized Travel (Pedestrian and Bicycle Information Center)
www.bicyclinginfo.org/pp/predicting/index.htm

Safe Routes to School (National Center for Safe Routes to School clearinghouse)
www.saferoutesinfo.org/index.cfm

Safe Routes to School (USDOT FHWA) <http://safety.fhwa.dot.gov/saferoutes/>

Safe Routes to School (WisDOT), including the SRTW toolbox:
www.dot.wisconsin.gov/localgov/aid/saferoutes.htm

SEWRPC KRM: A Plan for the Kenosha-Racine-Milwaukee Commuter Link,
www.sewrpc.org/KRMonline/background.shtm.

SEWRPC Regional Bicycle and Pedestrian System 2020 Plan for SE WI
www.sewrpc.org/transportation/amendmentbikeped.asp

SEWRPC Regional [I-94] Freeway System Reconstruction Plan for SE WI
www.sewrpc.org/freewaystudy

SEWRPC Regional Transportation System Plan for Southeastern Wisconsin: 2035 (SEWRPC Planning Report No. 49) www.sewrpc.org/regionalplans/regionaltransysplan.shtm

StreetShare (Motorist, Bicyclist, and Pedestrian Education website for Wisconsin)
www.streetshare.org

“Transportation Characteristics of School Children,” Report No. 4, Nationwide Personal Transportation Study, Federal Highway Administration, Washington, DC, July 1972.

Wisconsin Bicycle Facility Design Handbook (WisDOT) January 2004
www.dot.state.wi.us/projects/bikes.htm

Wisconsin Bicycle Laws (in plain language, not the State Statutes verbatim)
www.dot.state.wi.us/safety/vehicle/bicycle/rules.htm

Wisconsin Department of Transportation - Bureau of Transportation Safety, Bicycle & Pedestrian Safety Program Manager, Larry.Corsi@dot.state.wi.us, 608-267-3154.

Wisconsin Department of Transportation Bicycle & Pedestrian Statewide Coordinator,
Thomas.Huber@dot.state.wi.us, 608-267-7757.

Wisconsin Department of Transportation Bicycle & Pedestrian Southeast Region Coordinator, Jill
Mrotek, 262-548-8794, jill.mrotek@dot.state.wi.us.

Wisconsin Department of Transportation, Transportation Enhancements Program Manager John
Duffe, 608-264-8723, john.duffe@dot.state.wi.us.

Wisconsin Bicycle Planning Guidance: Guidelines for MPOs & Communities in Planning Bicycle
Facilities www.dot.state.wi.us/projects/bikes.htm

Wisconsin Bicycle Transportation Plan 2020 www.dot.state.wi.us/projects/state/bike2020.htm

Wisconsin Bicycle Travel Information (including the 1999 bicycle transportation survey)
www.dot.state.wi.us/travel/bike-foot/bike-index.htm

Wisconsin DOT Major Sources of Funding for Bicycle & Pedestrian Projects
dot.wi.gov/localgov/docs/potential-funding.pdf

Wisconsin State Bicycle Maps (by County)
www.dot.state.wi.us/travel/bike-foot/countymaps.htm

Appendix B: Estimated Cost of Bicycle Map

| | hours | low rate estimate | high rate estimate | low cost |
|--|--------------|--------------------------|---------------------------|-----------------|
| Creation of different layouts and symbology to be presented to the Village for choice and approval | 20 | \$40/hr | \$120/hr | \$800 |
| Collect public input to define map needs and content | 20 | \$40/hr | \$120/hr | \$800 |
| Paper map design and cartography | 100 | \$40/hr | \$120/hr | \$4,000 |
| Digital Map Creation | 8 | \$40/hr | \$120/hr | \$320 |
| Coordinate Printing and Delivery | 8 | \$40/hr | \$120/hr | \$320 |
| | | | | |
| Total | 156 | | | \$6,240 |

Appendix C: Pavement Marking Cost Estimates

| Material | Est. Life | \$/line ar ft 6" line | Cost/ ft/yr | WisDOT Approved | Notes |
|----------------------------|-----------|-----------------------------|----------------|--------------------|--|
| Waterborne Paint | .5 | 0.17 | 0.34 | Yes | <ul style="list-style-type: none"> • Outside line wears quickly • Our estimate from Crowley was \$0.17/ft, but this included field marking. The cost of just paint could be less. |
| Epoxy | 3 | 0.27 | 0.9* | Yes | <ul style="list-style-type: none"> • Often flakes off concrete with poor prep • Can't be used on asphalt |
| Methyl Methacrylate | 3 | 1.35 | 0.45* | No | <ul style="list-style-type: none"> • Not widely used in US • Fumes cause complaints in area for the day and day after installation |
| Polyester | 5 | 0.13 | 0.03* | No | <ul style="list-style-type: none"> • Not widely used in US • Requires HAZMAT license to apply |
| Polyurea | 3 | 0.9 | 0.3 | No | <ul style="list-style-type: none"> • Material used in Chicago school safety program • Material deteriorated quickly according to Chicago report • Requires special equipment to apply • 3M only known manufacturer |
| Preformed Thermoplastic | 6 | 1.59 | 0.27 | Yes | <ul style="list-style-type: none"> • Currently used for bike symbols in Chicago • Does not work well for lines • Premark best product • Manufacturer recommends pre-sealer for |

| | | | | | |
|------------------------|------|------|------|-----|--|
| | | | | | <p>older asphalt</p> <ul style="list-style-type: none"> • Can be applied in all temperature ranges |
| Thermoplastic | 10 | 0.68 | 0.07 | Yes | <ul style="list-style-type: none"> • Not practical for detailed symbol marking • Ideal for lines • Chicago does not use pressure washing or pre-sealer, just sweeping. • Manufacturer estimated life is 5-6 years, but Chicago typically gets 10-11 years on high traffic streets. |
| Preformed Plastic Tape | 3.75 | 2.34 | 0.62 | Yes | <ul style="list-style-type: none"> • Formerly used for bike symbols in Chicago. • 3M is only known vendor. • Installation is time consuming and weather dependent. • If not installed properly, the product is very likely to fail. |

Estimate is national figure from studies some years old. Costs have likely doubled.

Appendix D: Summary of Wisconsin Bicycle Laws,

from <http://www.dot.state.wi.us/safety/vehicle/bicycle/rules.htm>.

Rules for riding bicycles on the road General rules

- Bicycles are vehicles. They belong on the road. [emphasis added]
- Ride at least three feet from the curb or parked vehicles or debris in curb area and in a straight line. Don't swerve in and out around parked vehicles.
- Always ride in the same direction as traffic.
- Sidewalk riding for bicyclists past the learning stage and being closely supervised by adults can be more dangerous than on the road, obeying traffic laws. It is also illegal unless the community has passed an ordinance specifically permitting sidewalk riding. This can be age-restricted, location-restricted or based on the type of property abutting the sidewalk.
- Obey all traffic laws.
- Be predictable! Let other users know where you intend to go and maintain an understood course.

Narrow lanes

- Ride in the center of the lane.
- Keep at least three feet between yourself and passing or parked traffic.

Wide lanes

- Ride just to the right of the actual traffic line, not alongside the curb.
- Keep at least three feet between yourself and the curb or from parked vehicles. Motorists should be passing you with at least 3 feet of clearance.

Don't get the door prize!

- Ride in a straight line three feet out from parked cars. You'll avoid car doors that open in front of you and you'll be more visible to other drivers.
- Don't pull into the space between parked cars. Ride just to the right of the actual traffic line, not alongside the curb.

- Ride straight, three feet from parked cars - don't get "doored" You will fare better with other road users if you function like a legal vehicle operator, which you are.
- Right turning motorists can be a problem, but taking the lane or more of the right portion of the wide curb lane can prevent this. Take an adult bicycling course to learn skills and develop confidence in traffic.
- Left turning motorists are the cause of most adult bicyclists' crashes. Motorists claim not to see the cyclist who is traveling in a straight path in the opposite direction.

Bicyclists, when making your own left turn look over your left shoulder for traffic, signal your left turn and change lanes smoothly, so you are to the left side or center of the through lane by the time you reach the intersection. If a left turn lane is present, make a lane change to center of that lane. Do not move to left of that lane as left-turning motorists may cut you off.

- Do not wait until you reach the crosswalk, then stop and try to ride from a stop across other traffic. If you need to cross as a pedestrian, leave the travel lanes, then get into the crosswalk, walking or riding your bicycle like a pedestrian travels, not fast, and with pedestrian signals.

Lane positioning can be especially important in approaching a downhill intersection. Moving to the center makes you more visible to intersecting and left turning motorists in opposing lanes.

- Going downhill, your speed is likely to be closer to traffic speeds or posted speed limits. Hugging the curb when there are visual barriers increases your chance to be struck by a bigger vehicle, or of hitting a pedestrian or sidewalk riding bicyclist.

- Take the lane, be seen and see other traffic better if you are close to traffic speeds

How to ride

Wear bright colors during the day and retro-reflective items at night along with headlight and taillight to increase your visibility to other road users.

- Wear a bicycle helmet on every ride to reduce your chance of head injury in event of a fall or crash. Most serious injuries from a fall or crash are to the head and most frequently, the forehead, so wear helmet level with the ground, just above the eyebrows.

Be aware of changing road surfaces, new construction or unusual barriers on the roadway, distracters for both you and other vehicle operators.

- Leaves can be slippery in the early morning and are a hazard even when slightly damp. Distractions such as dogs, wild animals and even humans can draw attention from the roadway and lead to a crash. Expect them.

Motorist reminders

- Bicycles are vehicles. They belong on the road. [emphasis added]
- Cyclists need room to get around potholes, sewer grates and other obstructions.
- Leave at least three feet when passing bicycles, more room at higher speeds.
- Change lanes to pass any bicycle traveling in a narrow lane.
- Train yourself to scan for fast moving (it's hard to tell speed) bicycles and motorcycles in the opposing lane to you when turning left, and scan sidewalks and crosswalks for pedestrians and bicyclists using the sidewalk and crosswalk as a pedestrian. Always scan to your right side sidewalk before you leave a stop light or stop sign. And to the left and right side sidewalks when on a one-way street.

From: http://www.bfw.org/projects/bicycle_laws.php

Wisconsin State Bicycle Laws

[numbers in brackets refer to State Statutes]

A. Vehicular Status

- The bicycle is defined as a vehicle. [340.01(5)]
- The operator of a vehicle is granted the same rights and subject to the same duties as the driver of any other vehicle. [346.02(4)(a)]

B. Lane Positioning

- Always ride on the right, in the same direction as other traffic. [346.80(2)(a)]
- Ride as far to the right as is practicable (not as far right as possible). [346.80(2)(a)]
- Practicable generally means safe and reasonable. 346.80(2)(a) lists a few situations when it is not practicable to ride far to the right:
 - When overtaking and passing another vehicle traveling in the same direction;
 - When preparing for a left turn at an inter-section or driveway;

- When reasonably necessary to avoid unsafe conditions, including fixed or moving objects, parked or moving vehicles, pedestrians, animals, surface hazards or substandard width lanes [defined as a lane that is too narrow for a bicycle and a motor vehicle to travel safely side by side within the lane].

C. One Way Streets

Bicycles on a one-way street with 2 or more lanes of traffic may ride as near the left or right-hand edge or curb of the roadway as practicable (in the same direction as other traffic). [346.80(2)(b)]

D. Use of Shoulders

Bicycles may be ridden on the shoulder of a highway unless prohibited by local authorities. [386.04(1m)]

E. Riding 2-Abreast

Riding 2 abreast is permitted on any street as long as other traffic is not impeded. When riding 2 abreast on a 2 or more lane roadway, you both have to ride within a single lane. [346.80(3)(a)]

F. Hand Signals

- Bicyclists are required to use the same hand signals as motorists [346.35].
- Hand signals are required within 50 feet of your turn. It is not required continuously if you need both hands to control the bicycle [346.34(1)(b)]

G. Passing

- A motorist passing a bicyclist in the same lane is required to give the bicyclist at least 3 feet of clearance, and to maintain that clearance until safely past. [346.075]
- A bicyclist passing a stopped or moving vehicle is also required to give at least 3 feet of clearance when passing. [346.80(2)(c)]

H. Use of Sidewalks

- State Statutes allow local units of government to permit vehicles on sidewalks through local ordinances. [346.94(1)]

- When bicycles are allowed to be operated on sidewalks, bicyclists must yield to pedestrians and give an audible warning when passing pedestrians traveling in the same direction. [346.804]
- At intersections and other sidewalk crossings (alleys, driveways), a bicyclist on the sidewalk has the same rights and duties as pedestrians. [346.23, 24, 25, 37, 38]

I. Bicycling at Night

- Bicycling at night requires at least a white front headlight and a red rear reflector. The white front light must be visible to others 500 feet away. The red rear reflector must be visible to others between 50 and 500 feet away. A red or amber steady or flashing rear light may be used in addition to the required reflector. These are required no matter where you ride--street, path or sidewalk. [347.489(1)]

J. Duty to report accident. [346.70]

- The operator of a vehicle involved in an accident resulting in injury to or death of any person, or total damage to property owned by any one person of \$1,000 or more shall immediately give notice of such accident to the police.
- "injury" means injury to a person of a physical nature resulting in death or the need of first aid or attention by a physician or surgeon, whether or not first aid or medical or surgical treatment was actually received;
- "total damage to property owned by one person" means the sum total cost of putting the property damaged in the condition it was before the accident, or the sum total cost of replacing such property.
- This section does not apply to accidents involving only vehicles propelled by human power.

For more information contact:

Bicycle Federation of Wisconsin, 608-251-4456, info@bfw.org, www.bfw.org