

**Office of the Clerk/Treasurer**

W240N3065 Pewaukee Road  
Pewaukee, WI 53072  
(262) 691-0770 Fax 691-1798

**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE  
MEETING NOTICE AND AGENDA**

**Wednesday, January 17, 2018**

**6:00 PM**

Common Council Chambers ~ Pewaukee City Hall  
W240N3065 Pewaukee Road, Pewaukee, WI 53072

- 
1. Call to Order and Pledge of Allegiance
  2. Public Comment - Please limit your comments to 2 minutes, if further time for discussion is needed please contact your local Alderperson prior to the meeting.
  3. Discussion and Possible Action to Approve Minutes
    - 3.1 Meeting Minutes Dated October 25, 2017
    - 3.2 Meeting Minutes Dated December 13, 2017
  4. Discussion and Possible Action regarding Recommendations to the Common Council to Modify the City of Pewaukee's Bicycle and Pedestrian Plan and Hike / Bike Impact Fee Study.
  5. Discussion Regarding the Pewaukee School District's Proposed Bike Rodeo [Vitale]
  6. Discussion Regarding the Status of a Paved Path on Pewaukee School District Property [Vitale]
  7. Discussion Regarding the Creation of a Bicycle and Pedestrian Safety Flyer [Ford]
  8. Discussion Regarding the Online Bike & Pedestrian Survey [Blackwood]
  9. Set the Date for the Next Bike & Pedestrian Planning Committee Meeting and Suggest Future Items for Discussion
  10. Public Comment - Please limit your comments to 2 minutes, if further time for discussion is needed please contact your local Alderperson prior to the meeting.
  11. Adjournment

Kelly Tarczewski  
Clerk/Treasurer

1/11/2018

**NOTICE**

It is possible that members of other governmental bodies of the municipality may be in attendance to gather information that may form a quorum. At the above stated meeting, no action will be taken by any governmental body other than the governmental body specifically referred to above in this notice.

Any person who has a qualifying disability under the Americans with Disabilities Act that requires the meeting or materials at the meeting to be in an accessible format must contact the Clerk/Treasurer, Kelly Tarczewski, at (262) 691-0770 three business days prior to the meeting so that arrangements may be made to accommodate your request.

**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 3.1**

**DATE:** January 17, 2018

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Meeting Minutes Dated October 25, 2017

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

Approve the 10/25/2017 minutes as written.

**ATTACHMENTS:**

Description

Minutes 10.25.2017

**In Attendance:**

J. Blackwood, R. Grosch and R. Ford. J. Vitale and J. Leonhardt were absent and excused.

**Also Present:**

Administrator S. Klein, DPW Director J. Weigel, IT Director B. Kewan and Clerk/Treasurer K. Tarczewski.

1. Call to Order and Pledge of Allegiance – Mr. Blackwood called the meeting to order at 4:38 p.m.
2. Public Comment - None.
3. Discussion and Possible Action to Approve the Meeting Minutes Dated September 20, 2017

**A motion was made and seconded, (R. Grosch, R. Ford) to approve the meeting minutes dated September 20, 2017.** Motion Passed: 3-For, 0-Agaisnt.

4. Discussion with Public Works Staff Regarding the Use of Hike/Bike Impact Fee Funds for the Proposed Pewaukee Lake Loop and Recreational Routes

Mr. Klein and Mr. Weigel were present for this item.

Mr. Weigel passed out a list of approved projects that the impact fees can be used for. He said if the desire was to add the Pewaukee Lake Loop and recreational routes, the bicycle and pedestrian plan would need to be revised and then the Council would need to amend the 2012 impact fee study and then update the ordinance so that the projects would be covered. Mr. Weigel was unsure if the money could be used on the parts that are outside of the City's boundaries. Mr. Blackwood stated it was not the intent of the Committee to have the City pay for the signs outside of the City. It was his belief that the other municipalities should pay for their own.

Mr. Weigel stated back in 2015 he went before the Public Works Committee, Joint Park and Recreation Board and the Common Council asking them what additional projects they would like him to look into. In 2016 they started on the work and then the Bike & Pedestrian Planning Committee was created and he was asked to hold off until recommendations were made so that he could meld them together.

Mr. Blackwood asked if the Lake Loop and recreational routes were added if they would be able to use the funds already collected. Mr. Klein stated it has to meet the language of the original ordinance, but if we made the point to cancel the other projects, possibly we could transfer the funds to new projects. He stated the City Attorney will need to give an official opinion on this matter.

5. Discussion with Public Works Staff Regarding the Creation of a New Ordinance Requiring Bicycle and Pedestrian Facilities to be Considered on all City Roadway Reconstruction and Rehabilitation Projects

Mr. Weigel handed out a portion of the land development ordinance. He called the Committee's attention to Item F relating to sidewalks, bike paths and other shared use pathways. It says, 'the Common Council "MAY" require the developer to construct sidewalks and such'. He said there are some challenges. The routes are typically along established collector streets which are old town roads, with variable right-of-ways and lots of trees. Property owners along those areas are reluctant to



embrace the removal of trees, which were the issues when recently discussing the reconstruction of both Swan Road and Green Road.

Mr. Weigel stated there may be issues with the home owners associations of new developments. They may not want to give access to the public when they are paying for the upkeep.

Mr. Blackwood asked if the Plan Commission requires the developers to dedicate land or construct pathways or sidewalks adjacent to roadways that currently show that it is on the bike plan. Mr. Weigel stated they can but they don't.

Mr. Blackwood asked about the reconstruction of Duplainville Road. Mr. Weigel stated that was scheduled around 2022. It would be feasible at that time to pave the shoulder.

6. Discussion Regarding a Potential Green Road Multi-Use Path Project

Mr. Weigel shared an earlier version of a 3-phase shared use plan for Green Road. He said there were several trees that would need to be removed. Mr. Klein added the project was contentious for this reason. He said the Common Council compromised by constructing only a 3-foot paved shoulder. Mr. Klein stated people are using it to walk or bike but he doesn't feel it is a safe option. He thought perhaps a path could be added on the north side of Green Road. Mr. Weigel stated the south side is a better option if it was to be reconsidered but there are things that haven't been accounted for this future development such as storm water and utility issues. He added nothing was placed in the 2018 budget for this project.

Mr. Klein stated money could potentially come from impact fees for the planning and design for the project. Mr. Weigel stated he didn't think that was part of the impact fees.

7. Discussion and Demonstration of the Proposed City's Online Bicycle and Pedestrian Survey

Mr. Kewan was present for this item. He showed the committee what the survey would look like online. He said the data would be compiled into a data base and could be exported into Excel and can be sorted as needed. He said he can track IP addresses to make sure there aren't duplicate responses.

Mr. Klein suggested a few changes to some of the questions such as adding funding suggestions. Ms. Tarczewski noted a few suggestions from the Assistant Engineer Maggie Wagner.

8. Update on the Status of the Pewaukee Lake Loop

Mr. Blackwood stated he contacted the Engineer from the Village of Hartland. There would be a small stretch along Hwy KE. He wants to get a quote from Lang Signs. Mr. Blackwood stated the County was willing to hang the signs on the County right of ways.

Mr. Klein asked if approval was given by all the communities. Mr. Blackwood responded that they were, but they weren't willing to commit funds until everyone is on board. Mr. Klein stated he was uncertain that the Common Council agreed. Mr. Blackwood stated they gave conditional approval. Mr. Klein was concerned about liability by designating a route. He said there are dangerous roads that the committee is proposing to use for the Lake Loop.

9. Discussion Related to the Pewaukee School District's Proposed Bike Rodeo

Mr. Vitale was not available, so this item was tabled until December.

10. Update Related to the September 27, 2017 Public Information Meeting for the Waukesha County Park and Open Space Plan

Mr. Blackwood stated he attended the meeting and noted that Mr. Clinkenbeard attended as well. He stated boards of each township were posted. He said some of the City's routes were not on the map. Mr. Blackwood notified the County and they will review it.

11. Set the Date for the Next Bike and Pedestrian Planning Committee Meeting and Suggest Future Items for Discussion

It was determined to set the next meeting date on December 13th at 4:30 p.m.

12. Public Comment - None.

13. Adjournment

**A motion was made and seconded, (R. Ford, R. Grosch) to adjourn the meeting at 5:45 p.m.**

Motion Passed: 3-For, 0-Against.

Respectfully Submitted,

Kelly Tarczewski  
Clerk/Treasurer

**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 3.2**

**DATE:** January 17, 2018

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Meeting Minutes Dated December 13, 2017

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

Approve the 12/13/2017 minutes as written.

**ATTACHMENTS:**

Description

12.13.2017 Minutes

**In attendance:**

J. Blackwood, R. Grosch and R. Ford. J. Vitale and J. Leonhardt were absent and excused.

**Also Present:**

Clerk/Treasurer K. Tarczewski and DPW Director J. Weigel.

1. Call to Order and Pledge of Allegiance - Mr. Blackwood called the meeting to order at 4:30 p.m.
2. Public Comment - None.
3. Discussion and Possible Action to Approve the Meeting Minutes Dated October 25, 2017.

Ms. Tarczewski stated the meeting minutes were not available at this time.

4. Discussion with Public Works Staff Regarding the Use of Hike/Bike Impact Fee Funds for Projects Not Currently Included in the Impact Fee Study

Mr. Weigel was present for this item. He stated in order for a project to be added, the City would have to update the bicycle and pedestrian facility plan and then update the impact fee ordinance. He said he didn't get a clear answer whether or not he could use existing funds for new projects. It was his opinion that if old projects were cancelled and new ones are identified, he thought money could be used.

Mr. Grosch asked Mr. Weigel what needs to be done to get the plan updated. Mr. Weigel stated it depends on the timing. He said he has the comments from the Public Works Board, Plan Commission and Joint Parks Board and took it back to the Common Council in either November or December of 2016 and received a recommendation on how to change that plan, but since then the Bike and Pedestrian Planning Committee was formed. He said if the Committee has any recommendations on what should be added, they need to formally bring it before the Common Council for approval and get some sort of priority rating.

Mr. Weigel stated the deadline to utilize the funds already collected is 2019, but believes a 3-year extension can be requested from the Common Council.

5. Discussion Regarding the City's Proposed Online Bike & Pedestrian Survey

Mr. Grosch reported that the Common Council approved the request. Ms. Tarczewski stated the survey would be available starting on Friday the 15<sup>th</sup>. The members asked that they be sent the link when it was available to the public.

6. Update on the Proposed Pewaukee Lake Loop Plan

Mr. Blackwood stated he met with the Engineer from the Village of Hartland and they were accepting of the plan, but did not want to pay for the signs. Mr. Blackwood stated he received a vague quote from Lang Signs but the actual cost would depend on the number of signs ordered. Mr. Blackwood stated he'd like to get all the communities together at one time to determine the exact needs. He thought January or February would be an appropriate time to set up a meeting of all communities to figure out the final number of signs to order.

7. Discussion Regarding the Pewaukee School District's Proposed Bike Rodeo

Mr. Vitale was not available, so this item was tabled until January.

8. Discussion Regarding the Status of a Paved Path on Pewaukee School District Property

Mr. Vitale was not available, so this item was tabled until January.

9. Discussion Regarding the Creation of a Bicycle and Pedestrian Safety Flyer

Mr. Blackwood stated one of the focuses of the committee is safety. He thought creating a flyer of general rules and safety reminders could be placed on the City's website and passed out at schools or placed in water bills.

Mr. Grosch agreed and suggested eventually adding the map of the lake loop. It was determined that Mr. Ford would spearhead this project since he has graphic experience.

10. Set the Date for the Next Bike & Pedestrian Planning Committee Meeting and Suggest Future Items for Discussion

The Committee directed the Clerk to send an email out to committee members who were absent to determine their availability on either the 17<sup>th</sup> or 24<sup>th</sup> of January, 2018.

11. Public Comment - None.

12. Adjournment

**A motion was made and seconded, (R. Grosch, R. Ford) to adjourn the meeting at 4:48 p.m.**

Motion Passed: 3-For, 0-Against.

Respectfully Submitted,

Kelly Tarczewski  
Clerk/Treasurer

**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 4.**

**DATE:** January 17, 2018

**DEPARTMENT:** Administration

**PROVIDED BY:**

***SUBJECT:***

Discussion and Possible Action regarding Recommendations to the Common Council to Modify the City of Pewaukee's Bicycle and Pedestrian Plan and Hike / Bike Impact Fee Study.

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

DPW Memo 7.23.2015

DPW Memo 10.26.2015

DPW Memo 1214.2015

CC Minutes



## Department of Public Works

W240 N3065 Pewaukee Road  
Pewaukee, WI 53072

DPW Main Office: (262)-691-0804 Fax: 691-5729  
Water & Sewer Division 691-0804 Fax: 691-5729  
Highway Division 691-0771 Fax: 691-6079  
Engineering Division 691-0804 Fax: 691-5729

TO: Common Council

FR: Jeffrey Weigel, Public Works Director

DT: July 23, 2015

RE: Consideration of the City Bicycle and Pedestrian Facility Plan

### REQUESTED ACTION:

We are transmitting the current Bicycle and Pedestrian Plan to the Common Council reviews and comments. We are planning to consolidate the comments and bring recommendations to amend both the Plan and the Impact Fee Study for formal Council approval this fall.

### ISSUE:

As a part of the City Strategic Plan, plan elements are periodically reviewed and considered for implementation. The Bicycle and Pedestrian Facility Plan was first adopted in 2003, and the 10' wide shared use trail along Pewaukee Road (STH 164) from Riverwood Drive's north to Swan Road is the only Bike/Hike facility constructed to date. Since nearly twelve years have passed since the adoption of the plan, it is useful to revisit the plan to determine if bicycle and pedestrian facilities are still a relevant element to the City Strategic Plan.

During the 2003 planning process, the Joint Park-Recreation Board, the Public Works Committee, and the Plan Commission were offered an opportunity to comment on the plan. We requested comments from those bodies again at this time as a part of our Strategic Planning process, inquiring as to whether the plan goals are still important and seeking input on any specific elements of the plan.

We have included a copy of the current plan for your information. We request Alderpersons to consider the current plan and suggestions from the Committee/Board/Commission listed below and forward any comments to me via e-mail by mid-September.

The comments received so far that have been consistent between the Committee/Board/Commission are: 1) The City should retain the goal of promoting pedestrian and bicycle paths; and 2) Periodically updating and maintaining the plan is necessary for seeking any grants or cost-sharing when arterial projects are undertaken by Waukesha County or State on their roads.

From the Public Works Committee (March 2015)

Recommendation to add pedestrian crossing/signals to the Ridgeview/Avondale intersection with Pewaukee Road (STH 164) in front of the Central Fire Station. This would provide safer



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access from the residential properties in Hawks Meadow to the existing trail that is on the opposite side of Pewaukee Road.

Public Works is considering a recommendation on a sidewalk between Hawks Meadow and Pewaukee Road on the City Fire Station property.

From the Joint Parks and Recreation Board (July 2015)

The Joint Board recommended that the City focus on projects in a slightly different priority:

- 1) Connection to area recreation trails, such as the Lake Country Trail and Bug Line
- 2) Continued efforts to connect residential neighborhoods to our local parks
- 3) Improving popular fitness training areas, such as the loop around Pewaukee Lake

From the Plan Commission (July 2015)

Concurred with the Joint Park Board on the connection to local recreation trails

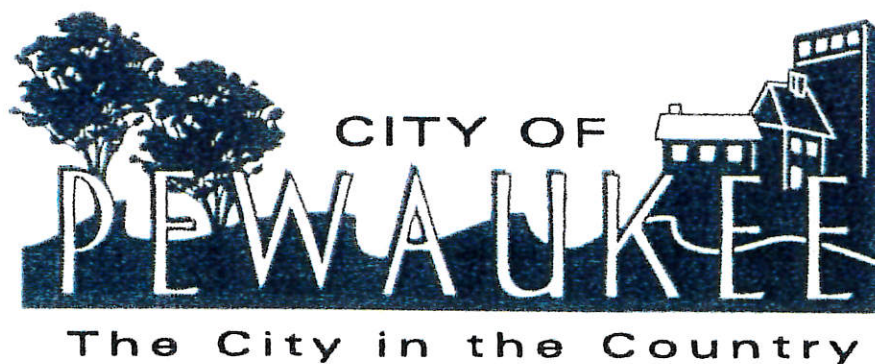
Suggested that we focus on smaller, easier to achieve projects such as:

- 1) Connection to the Lake Country Trail from E. Fieldhack Drive
- 2) Connection of South Park to the existing bicycle trail and sidewalk already installed in Northview Road.









## 2003 Bicycle and Pedestrian Facility Plan

**R.A.SMITH**  
—  
& ASSOCIATES, INC.

June 2, 2003

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## INTRODUCTION

In its 160 years of history, the City of Pewaukee has grown from a small town based on a sawmill on then Snail Lake to the rapidly growing community on eastern Lake Pewaukee that it is today. With the continued migration of people from the core metropolitan Milwaukee area, Pewaukee will continue to attract new residents with its rural community setting boasting urban conveniences. Contributing to Pewaukee's welcoming atmosphere are the tree lined streets, rural scenes, welcoming parks, open subdivisions, and, of course, Lake Pewaukee.

The City's growth has been characterized by subdivisions scattered in the northern, eastern, and Lake adjacent areas of the city. Most of the subdivisions are bordered and connected on at least one side by scenic roads that were once quiet town roads. As more and more people move to the City, those quiet town roads are becoming collector and arterial roads. Increasing traffic volumes will indefinitely stimulate the need for defined bicycle and pedestrian facilities. As a result, a bicycle and pedestrian plan has been developed in order to address the alternative transportation needs for the City of Pewaukee.

When followed, a good plan will promote public confidence, convenience, and safety for pedestrians, bicyclists, and motorists alike. An overlooked quality of a bicycle plan is that it is more than a map. Rather, it is a reference tool that guides the community in planning and improvement engineering. It defines goals, design considerations, and facility planning concepts. The overall purpose of this document is to provide a plan by which the City can improve the quality of life for its residents through improved bicycle and pedestrian facilities.

## PLAN GOALS

The following goals were established as a guideline in evaluating existing and proposed routes, as well as a measure to determine if the stated purpose is met.

- Develop safe bicycle routes that can be enjoyed by riders of all age, skill, and confidence levels.
- Link existing and planned pedestrian/bicycle facilities of the surrounding communities to the City of Pewaukee plan.
- Develop a Bike Plan map for use in short term and long-term transportation and land use planning as well as route information for bicycle users.
- Provide recommendations for street improvements.
- Develop design criteria for bicycle facilities for use by the City Engineering Department.
- Keep Swan, Lindsay, and Green Roads as rustic as possible.
- Develop a recommended route around Lake Pewaukee with the Town of Delafield.
- Connect subdivisions, parks, open spaces, other trails and routes and places of interest where possible.

## DEFINITIONS

AASHTO: American Association of State Highway and Transportation Officials.

BICYCLE: Every vehicle propelled by the feet acting upon pedals and having wheels, any two of which are not less than 14 inches in diameter. (WI State Statute 340)

BICYCLE USER: Type A-Adult, advanced, experienced rider: capable of operating under most traffic conditions. Type B-Casual, novice adult, teenage or preteen bicyclists who ride on local residential streets with low vehicle speeds and volumes and require access to schools, recreational facilities and neighborhood shopping areas.

BICYCLE FACILITIES: A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking and storage facilities, mapping all bikeways, and shared roadways not specifically designated for bicycle use. (Source: AASHTO)

BICYCLE LANE: Bicycle ways provided on streets and designated by striping, signing and other pavement markings. (Source: SEWRPC Planning Report #43)

BICYCLE PATH: Bicycle ways physically separated from motorized vehicles by open space or barriers. May be located within right-of-way of a street, or an easement, utility corridor, or abandoned railroad right-of-way. (Source: SEWRPC Planning Report #43)

BICYCLE ROUTE: A bicycle way designated with directional and information markers and may consist of any combination of paths, lanes, and bikeways. (Source: SEWRPC Planning Report #43)

BICYCLE WAYS: Any roadway, pathway, or other ways that is specifically designated for bicycle travel including facilities that are shared with other travel modes. (Source: SEWRPC Planning Report #43)

MUTCD: Manual on Uniform Traffic Control Devices.

ROADWAY: That portion of a street or highway, including shoulders, for vehicle use. (Source: AASHTO)

SHARED ROADWAYS: A roadway which is not officially designated and marked as a bicycle route, but which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or a road with paved shoulders. (Source: Wisconsin Bicycle Transportation Plan 2020).

SIDEPATH: A bicycle/pedestrian path separated from the roadway and constructed with asphaltic cement pavement.

STREET/HIGHWAY: A general term denoting a public way for purposes of vehicular travel, including the entire area within the roadway.

## DESIGN

### TRIP GENERATION

Biking and walking are two of the simplest forms of transportation. Besides being available to almost everyone, they also propose personal, social, and economic advantages to their users. People who get some sort of regular exercise have better aerobic capacity, muscle definition, coordination, and flexibility. These people are also generally happier and are more socially aware of what is going on in their communities. The last advantage benefits everyone, even the people who choose not to use bicycle and pedestrian facilities. Decreased motor vehicle trips reduce traffic congestion, air and noise pollution, wear and tear on roads, and the need for oversized roads and parking facilities. While biking and walking may not be an option for long trips and cargo conveying trips, they are practical for:

- Trips to Schools
- Trips to Parks
- Trips to Work
- Trips to Church
- Small Errands
- Recreation/Fitness
- Visiting with friends and relatives
- Appointments
- Connector to public transit

*Specific Trip Generators in the City of Pewaukee include:*

- Balmer Park
- South Park
- Springdale Park
- Nettesheim Park
- Wagner Park
- Ryan Park (Under Development)
- Lake Pewaukee
- City Hall/Police Department
- WCTC
- Lake Country Trail
- Fox River Trail (Under Development)
- Lake Pewaukee Parkway (Under Development)
- Subdivisions

## **SAFETY CONSIDERATIONS**

Bicycle facilities are designed to convey bicycle travel in the safest manner possible. The ultimate goal is to increase the volume of bicycle and pedestrian traffic and reduce the number of crashes.

In 2001, there were 1,216 bicycle crashes in the State of Wisconsin. Of those, 43% involved children between the ages of 5 and 14, 25% were between 15 and 24, and another 19% came from bicyclists between ages 25 to 44. Crashes involving children bicyclists are usually the fault of the child bicyclist, whereas crashes involving adult bicyclists are usually the fault of the motorist. The most common types of crashes are:

- Motorist fails to yield
- Motorist turn/merge into path of bicyclist
- Bicyclist mid-block ride-out  
(Ride-out refers to a bicyclist riding perpendicularly into the path of a motor vehicle)
- Bicyclist intersection ride-out
- Bicyclist turn/merge into path of vehicle.

Other characteristics of crashes include:

- More crashes occur on a weekday than weekend
- Bicycle crashes peak between 3 pm and 7 pm
- Most crashes occurred in daylight
- Close to half of all fatal crashes occur at night
- In Wisconsin, around 3% of all crashes occur on county trunk highways, but 24% of fatal crashes occur on county highways.

For reported Wisconsin 2001 bicycle crash data, refer to the appendix.

## **STATE REGULATIONS**

- When a vehicle passes a bicycle, there shall be a clear, safe distance of 3 feet between the vehicle and bicycle.
- No bicycles are allowed on expressways or freeways if official signs stating such have been erected.
- When bicyclists or pedestrians cross at a marked or unmarked crosswalk, vehicles shall yield the right-of-way to them if the bicyclist/pedestrians are using the crosswalk on a manner consistent with the safe use of the crosswalk.
- Bicyclists shall use hand signals for turning movements from the proper position on the road.
- Bicyclists shall obey all traffic control signs.
- Bicyclists shall make turning movements from the proper position on the road
- If local authorities permit bicycles on sidewalks or hiking trails, every bicyclist shall yield to the right-of-way to pedestrians.

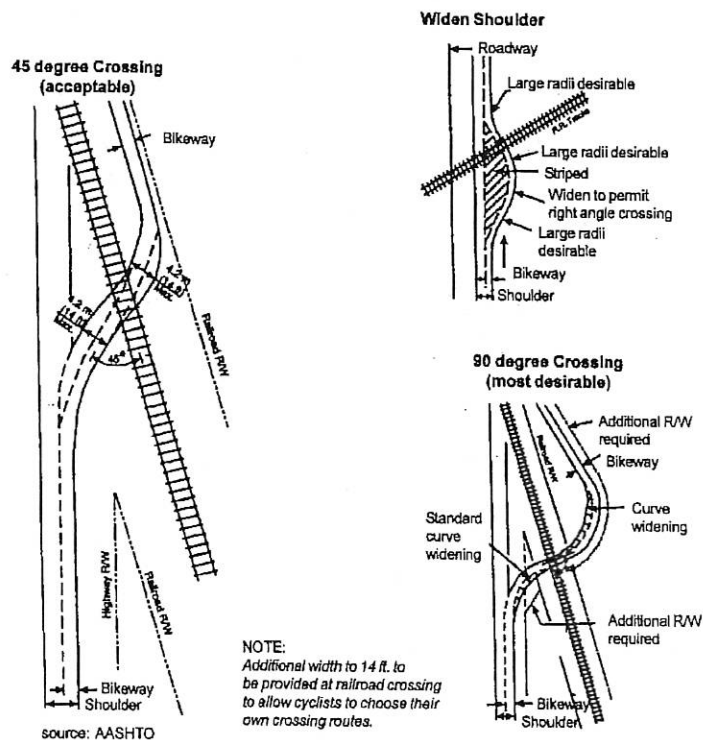


- Bicyclists shall not ride at night unless the bike is equipped with the correct, functioning lamps and reflectors.
- The government body can designate bike lanes, bikeways, and sidewalks for bicycle use, or prohibit the use of bicycles on a roadway.

## OVERCOMING BARRIERS

### *Freeways, Rivers, and Railroads*

Build bridges to accommodate all modes of transportation: existing and planned bridges must include the appropriate bicycle and pedestrian facilities. For security reasons, these are preferable to separate bicycle-pedestrian bridges. If bicycle-pedestrian bridges are needed, they should be located so they are visible, accessible from the existing roadway network and close to areas with high potential use, such as residential and commercial areas, schools or parks. The following are some examples of at-grade railroad crossings suggested by AASHTO:



### *Environmental Corridors*

Wetland and conservancies can be some of the most challenging features to overcome. Often times, interests in protecting these lands go beyond the local and county level and can involve organizations like the Environmental Protection Agency and the Army Corps of Engineers. Permitting is often difficult, but not impossible. Support from local, county, and state planning agencies can sometimes facilitate the permitting process. Many projects are forced to incorporate wetland mitigation and wetland banking into their projects as conditions of their accepted permits.

### *Wide Streets*

Use pedestrian crossing treatments, such as raised median islands and curb extensions.

### *Intersections*

Use special treatments such as islands, smaller radius corners and through painted bike lanes.

### *At-Grade Railroad Crossings*

Maintain existing crossings in safe condition for bicyclists and pedestrians, and keep pedestrian and access across railroad tracks of street crossings are closed.

### *Heavy Motor Vehicle Traffic Volumes*

Provide well-designed bicycle and pedestrian facilities that will attract hardy users. More timid users, who perceive that they are no longer alone, will also be attracted. Transportation Demand Management practices and traffic calming can help reduce traffic volumes and speeds at peak hours.

## **GRADES AND SIGHT DISTANCES**

The AASHTO guide for development of bicycle facilities outlines the maximum grades for shared use paths. When facilities are being added to a roadway, the roadway grades usually control over the bicycle facilities. In instances where the facility is a separated path, the recommended grades and grade lengths can be accommodated.

Just like roads and streets, bicycle facilities should be designed with proper sight distances in order to provide bicyclists with enough time to react to danger. Sight distances are factors of several variables like reaction time, bicycle speed, coefficient of friction, and bicycle braking capacity.

Refer to the appendix for general grade, curve, and sight distance design guidelines.

## **BICYCLE FACILITY TYPES AND COSTS**

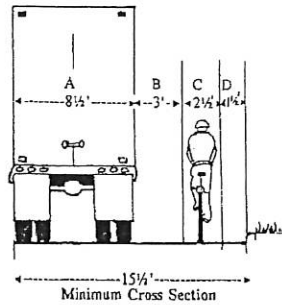
### *Shared Roadway*

On a shared roadway, bicyclists and motorists are sometimes accommodated in the same travel lane or because of narrow widths or parked vehicles; motorists may find it necessary to overtake bicyclists by switching into the oncoming travel lane. Shared roadway facilities are common on city street systems, narrow town roads, and county trunk highways. This facility type will continue to provide a very common form of bicycle accommodation. Because of the low volume of traffic, most of these roadways are currently suitable for bicycling with no additional improvements necessary.

There is no cost to accommodate bicycles in a shared roadway.

### *Wide Curb Lanes*

Wide curb lanes are normally used on multi-lane arterials and collectors, which have high traffic volumes. The right (curb) lane is used to accommodate bicycles and vehicles, therefore, a lane wider than the typical 12 feet is provided. The extra width allows for safe bicycle traffic and allows vehicles to pass bicycles without changing lanes. The lanes also act to minimize the real and perceived conflicts between bicycles and motor vehicles.



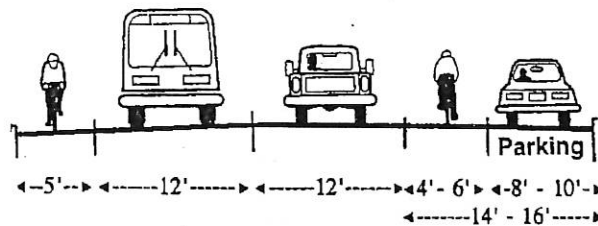
AASHTO guidelines consider a lane with 14 feet of usable width as being minimum. Usable width is considered that distance which is between the left-hand lane line and the curb flange line. AASHTO does not consider the gutter section of a road usable due to the many joints and the location of storm water inlets. A typical cross section is shown above. Note that a 3-foot separation between vehicles and bicyclists is required by State law.

When wide curb lanes are used, the road design should include bicycle safe storm inlet grates and elimination of the longitudinal joint, which runs between the gutter and the roadway.

Costs of providing additional width on arterial streets can be between \$20,000 and \$65,000 per mile based on the needed width and the pavement type.

#### *Bike Lanes*

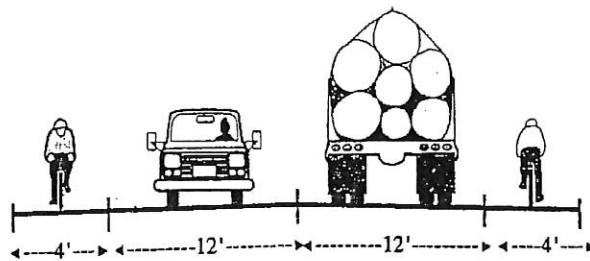
Bike lanes are normally found on urban arterials and collectors. Bike lanes are characterized by painted lines and roadway markings and are one-way facilities that handle bicycle traffic that is moving in the same direction as adjacent motor vehicle traffic. Bicycle lanes allow for more predictable movements by bicyclists, thereby giving the bicyclist more confidence in using them and it allows a comfort level for all longitudinal joints.



Costs of providing bike lanes range from \$35,000 to \$120,000 (for both sides of roadway) depending on the surface type and the provision of a 5 or 6-foot width. In some cases, pavement marking can be used to re-define lane widths, possibly reducing them to 11 feet wide to provide additional space and reduce the cost.

### *Paved Shoulders*

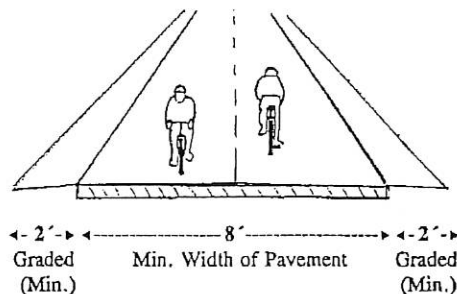
Wide curb lanes and bike lanes are typically used in urban cross circumstances. In many communities, including Pewaukee, roads have rural cross sections (no curbs), therefore, bicyclists must use road shoulders to get to their destinations. In cases where a bicyclist must ride on a shoulder, smooth, paved shoulders should be provided and maintained. The shoulder width should be a minimum of 4 feet, with 5 or 6 feet being desirable. If the facility will be used primarily by experienced adult bicyclists, an 18 to 24 inch paved shoulder may be sufficient. On many County and State highways, the highways contain "rumble" strips to alert motorists when they are off the travel lane. Though it is an effective safety tool for motorists, it does not provide a safe environment for bicyclists. One option to accommodate a smooth ride for bicyclists, yet maintain rumble strips is to provide a one foot smooth section on the center of the rumble strip to allow for safe passage.



Costs of paving a 5 ft. wide shoulder is \$45,000 per mile when a suitable gravel base is provided. Where there is minimal or no shoulder, the cost may go up substantially due to re-ditching, tree removal and additional material needed to provide a solid base.

### *Bike Path*

A bike path is characterized as an off road paved path that can accommodate two-way bicycle traffic. A bike path could be separated from a roadway by a narrow section of open space or it could be through open lands. Bike paths can provide mobility along rivers, greenways, rail lines, and between subdivisions. Bike paths are best used where there are minimal street and driveway crossings because they limit the number of conflict points with motor vehicles.



According to AASHTO Bicycle Guidelines and the WDOT, the recommended width for a two-way bike path is 10 feet, though 8 feet is the minimum width. For one-way traffic, the minimum width is 5 feet. The width to be used may depend on the expected volume of bicycle usage as well as pedestrians, skate boarders, skaters and people walking their pets. Please note that one-way paths are not always practical because traffic is two way most of the time.

The cross section for a two-way path should include a 2 feet wide clear zone on both sides of the path. The clear zone should be void of trees, poles, walls, fences, signs, and guardrails. The vertical clearance should be 8 feet unless maintenance vehicles need to traverse the path.

Bike paths have the highest variance in cost. Typical paths found on abandoned railroad rights-of-way cost approximately \$13,000 per mile for a crushed limestone surface. Urban multi-modal paths with appropriate intersection treatment, 12 feet width, asphalt surface, lighting and landscaping can be as much as \$265,000 per mile, not including right-of-way acquisition.

## **Summary**

The main obstacles to plan around in the City of Pewaukee are the narrow local roadways and the number of County and State Highways with higher speed limits. The narrow roads possibly could make improvement projects costly due to the amount of grading and ditching that would be necessary to widen the pavement or construct a sidepath. The County and State highways are also generally narrow, but in addition have higher speed limits.

*In general, separated pathways are preferred to on-road facilities and should be pursued wherever possible to move pedestrians and bicyclists away from danger.* If a separated path is not possible along a roadway, consider widening the roadway to include either paved shoulders or wide curb lanes and reducing the speed limit. Make sure crossings across roads and railroads are signed according to MUTCD regulation and incorporate signalized crossings whenever available.

## **INVENTORY**

### **EXISTING CONDITIONS**

The City of Pewaukee encircles the east end of Lake Pewaukee and the Village of Pewaukee. Before incorporating in 1999, the City was the Town of Pewaukee. Pewaukee's neighbors include the Town of Lisbon to the north, the Town of Delafield to the west, City of Brookfield to the east and the City of Waukesha to the south. There are approximately 81 miles of local roads, 31 miles of state and county highways, and 15 miles of freeway in the City.

The City has many busy State and County Roads that pass through it. Running north and south through the City are County Highways G, T, JJ, J, M and State Highways 16, 164, and 74. State Highway 190 and Interstate Highway 94 both run east and west through the city. The Wisconsin Central Railroad runs north-south along the east side of the City and the Canadian Pacific Railroad bisects the north and south halves of the City.

The Pewaukee River begins at the east end of Lake Pewaukee and meanders to the southeast where it empties into the Fox River. The Fox River cuts off the southeast corner of the City and continues on into the City of Waukesha.

The streets in the city tend to be narrow two lane roads in wide right-of-ways with little or no shoulder and generally medium to deep ditches. As the city has grown, so has the volume of traffic. Roads that were once generally rural two-way roads are now becoming collectors and arterials moving residents to and from the newer unconnected subdivisions to the parks and other trip generators that, too, were once on low volume roads.

## **EXISTING AREA BICYCLE PLANS**

An important and sometime challenging goal of facility planning is maintaining continuity where different communities border each other. Good neighbor relations and similar design standards facilitate these connections.

The Southeast Wisconsin Regional Planning Commission 2010 Bicycle and Pedestrian Facilities System Plan selects many of the county roads within the city as proposed bicycle routes. Also depicted are the Pewaukee River Parkway, the Fox River Trail, and a general connection to each from the city.

The proposed Waukesha Greenway Plan moderately affects the City. Included in the plan are the proposed corridors for the Fox River Trail in the City's southeast corner and the Pewaukee River Parkway, which runs north to south through the city. The plan will outline the design criteria used for selecting the corridor in the Parkway. A standard cross section may also be included for sidepaths adjacent to County Trunk Highways.

The only connection between the City of Brookfield Greenway Plan and Pewaukee is the Fox River Trail coming into the eastern edge of the City on an abandoned railroad corridor.

The Town of Delafield Comprehensive Outdoor Recreation Plan does not connect with Pewaukee other than the Lake Country Trail, which is maintained by Waukesha County.

The adjacent plan with the most connections is the Village of Pewaukee Bicycle Plan. Many of the connections have been extended into the City of Pewaukee.

Refer to the exhibits section for the Bike Plan Map showing existing and proposed bicycle/pedestrian ways.

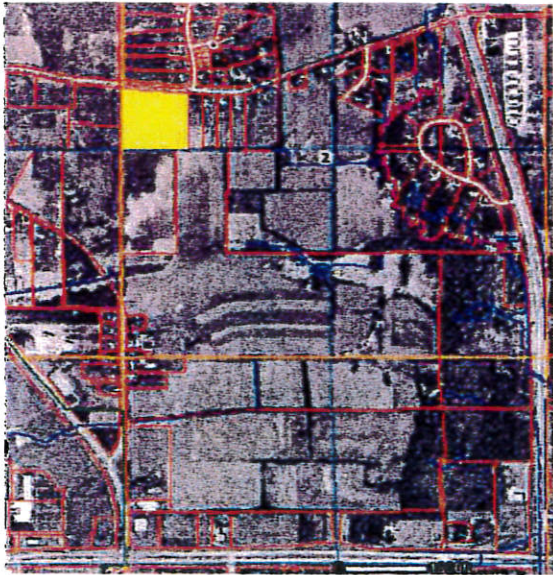
## **BICYCLE/PEDESTRIAN CORRIDORS**

The following sheets include specific information regarding each segment proposed for facility improvement by the City of Pewaukee Bike Plan. Included for each segment are the existing conditions, notes regarding attributes that might affect facility implementation and design, and the recommended facility type and/or improvement.



# BALMER PARK TO CAPITOL DRIVE (STH 190)

**Location:** Through land south of Balmer Park to Capitol Drive



Looking south from Balmer Park

**Existing Conditions:**

Segment Type:	URBAN MINOR/COLLECTOR STREET (FUTURE)
Speed Limit:	NA
Pavement Width:	NA
Ditch Depth & Location/ Curb B to B:	NA
Existing Bike Facility:	NA
On Street Parking:	NA

**Notes:**

**Recommendations:**

Since the land is undeveloped, there are several options to connect Capitol Drive to Balmer Park. For bicyclists, incorporating a wide curb lane would suffice. For pedestrian traffic a designated sidewalk or side path would provide the safest method for pedestrian traffic.

## CAPITOL DRIVE (CTH JJ)

**Location:** West Village limits to west City limits



### Existing Conditions:

Segment Type:	RURAL ARTERIAL
Speed Limit:	35 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	2.0+ <sup>'</sup> DEEP ON SOUTH SIDE, 1.0' DEEP ON NORTH SIDE / 12' FROM EDGE OF ROAD
Existing Bike Facility:	NONE
On Street Parking:	NONE

### Notes:

Gravel shoulders vary in width  
Route is designated in the SEWRPC Plan  
Probable wetland issues if grading new shoulder and ditches

### Recommendations:

The addition of paved shoulders and appropriate signage would facilitate bicycle travel; ditches will need to be moved out away from the road



## CAPITOL DRIVE (STH 190)

Location: Pewaukee Road to Springdale Road



Looking west from STH 164



Looking east from STH 164

### Existing Conditions:

Segment Type:	URBAN ARTERIAL
Speed Limit:	VARIES
Pavement Width:	50'
Ditch Depth & Location/ Curb B to B:	
Existing Bike Facility:	NONE
On Street Parking:	NONE

### Notes:

High traffic speeds and volumes  
Roadway overpasses STH 74 and Duplainville Road  
South side of right-of-way more open and constructible than north side

### Recommendations:

Construct side path on the south side of the road.

## COLLEGE AVENUE (CTH SS)

**Location:** CTH T to Prospect Avenue



### **Existing Conditions:**

Segment Type:	RURAL ARTERIAL
Speed Limit:	55 MPH
Pavement Width:	30.5' WIDE WITH 6' GRAVEL SHOULDER
Ditch Depth & Location/ Curb B to B:	1.5'-2' DEEP / 37' FROM CENTERLINE TO DITCH
Existing Bike Facility:	3' PAVED SHOULDER
On Street Parking:	NONE

### **Notes:**

Wetland on south side of road  
Residential areas on north and south side of road near Prospect Avenue  
Based on the speed of the road a separated path would be safest.

### **Recommendations:**

Construct side path on south side of road.



# DUPLAINVILLE ROAD

**Location:** Weyer Road to Green Road



Weyer Road to Lindsay Road



Looking north from Green Road



Looking south from Overhill Lane



Looking north from Overhill Lane

## Existing Conditions:

Segment Type:	RURAL ARTERIAL
Speed Limit:	35-45 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	3-5' DEEP/ 18' FROM EDGE OF ROAD
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

## Notes:

Deep ditches in some areas  
Narrow areas near the subdivisions north of the Capitol Drive overpass

## Recommendations:

Construct side path on the west side of the road.



# EAST FIELDHACK DRIVE TO THE LAKE COUNTRY TRAIL

**Location:** From southernmost part of Fieldhack Drive to the Lake Country Trail



View from East Fieldhack Drive

## Existing Conditions:

Segment Type:	NA
Speed Limit:	NA
Pavement Width:	NA
Ditch Depth & Location/ Curb B to B:	NA
Existing Bike Facility:	NA
On Street Parking:	NA

## Notes:

Short segment, less than 150 LF

Must cross over stream to get to trail, use culvert or boardwalk, DNR permits required

## Recommendations:

Construct two-way path to connect subdivision to the Lake Country Trail

Add privacy signage

# GLACIER ROAD

**Location:** West Village limits to west City limits



Looking west from Ryan Street



Looking east from City limits

## Existing Conditions:

Segment Type:	RURAL ARTERIAL
Speed Limit:	25 MPH
Pavement Width:	28'
Ditch Depth & Location/ Curb B to B:	1-2.5' DEEP / 5.5' FROM PAVEMENT EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

## Notes:

Route should not be recommended for inexperienced riders.  
Challenging hilly terrain

## Recommendations:

Construct paved shoulders along both side of the road



# GREEN ROAD

**Location:** Pewaukee Road to Wagner Park



Looking east from Pewaukee Road



Looking west from Duplainville Road

## Existing Conditions:

Segment Type:	RURAL/URBAN ARTERIAL
Speed Limit:	35 MPH
Pavement Width:	24' / 3' GRAVEL SHOULDER
Ditch Depth & Location/ Curb B to B:	1' DEEP / AT 7' FROM SOUTH PAVEMENT EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

## Notes:

### City wants to keep the roadway rustic

North side of road open between edge of pavement and existing right-of-way for the entire stretch  
Some tree trimming on north side may be necessary to allow bike/pedestrian access and accommodate sight lines

## Recommendations:

Construct side path on north side of road

# JACQUELYN DRIVE TO SOUTH PARK

**Location:** Through easement from Jacquelyn Drive to South Park



View from Jacquelyn Drive to park

## Existing Conditions:

Segment Type:	PEDESTRIAN RIGHT-OF-WAY
Speed Limit:	NA
Pavement Width:	NA
Ditch Depth & Location/ Curb B to B:	NA
Existing Bike Facility:	NA
On Street Parking:	NA

## Notes:

Easement for path already exists  
Project already in construction phase through City Engineering Department

## Recommendations:

No further action needed



# LINDSAY ROAD

**Location:** Swan Road to Duplainville Road



West of Balmer Park



East of Balmer Park



East of STH 164

## Existing Conditions:

Segment Type:	RURAL ARTERIAL
Speed Limit:	45 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	1.5' DEEP / 5.0' FROM PAVEMENT EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

## Notes:

### City wants to keep the roadway rustic

West of Balmer Park Lindsay Rd is narrow with pronounced ditches and trees close to road  
Right-of-way along Lindsay Rd east of Balmer Park have open areas and minimal ditches

## Recommendations:

Construct two way path on south side of road from Swan Road to Duplainville Rd, may require pedestrian signalization of intersection at STH 74 in order to safely cross the highway.



## MEADOWBROOK ROAD (CTH G)

**Location:** College Avenue to the Lake Country Trail



### Existing Conditions:

Segment Type:	RURAL
Speed Limit:	45 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	WEST SIDE 1.5' DEEP / EAST SIDE 0.75' DEEP
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

### Notes:

Ditch on west side more pronounced than east side  
Power poles on east side  
Mostly residential on east side of road

### Recommendations:

Move poles away from roadway on east side and construct side path along segment

## MEADOWBROOK ROAD (CTH TT)

**Location:** Lake Country Trail to Northview Road



### Existing Conditions:

Segment Type:	RURAL ARTERIAL
Speed Limit:	45 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	0.75' DEEP
Existing Bike Facility:	SIDEWALK ON WEST SIDE FROM NORTHVIEW TO SILVERNAIL ROAD, EAST SIDE FROM SILVERNAIL ROAD TO LAKE COUNTRY TRAIL
On Street Parking:	NONE

### Notes:

Wide right-of-way set up for four lane roadway  
Sidewalk offset 40+ feet from roadway  
Moderate to heavy density residential area  
Sidewalk not shoveled/plowed when inventory taken

### Recommendations:

Implement year round maintenance plan for sidewalk



## NORTHVIEW ROAD

**Location:** Meadowbrook Road to South Park



Looking west from Meadowbrook Road



Looking east from South Park

### Existing Conditions:

Segment Type:	RURAL ARTERIAL
Speed Limit:	35 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	1.25' DEEP / 5' FROM PAVEMENT EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

### Notes:

Some utility relocation may be necessary  
Some clearing and grubbing

### Recommendations:

Construct side path on north side of road

# PEWAUKEE RIVER GREENWAY TO RIVERWOOD DRIVE

**Location:** WEST END OF RIVERWOOD DRIVE TO PEWAUKEE RIVER GREENWAY



Looking west from Riverwood Drive

## Existing Conditions:

Segment Type:	NA
Speed Limit:	NA
Pavement Width:	NA
Ditch Depth & Location/ Curb B to B:	NA
Existing Bike Facility:	NA
On Street Parking:	NA

## Notes:

County Parks and Land Use Department supports a connection at this point  
Permitting may be extensive in the greenway  
Boardwalk may be needed

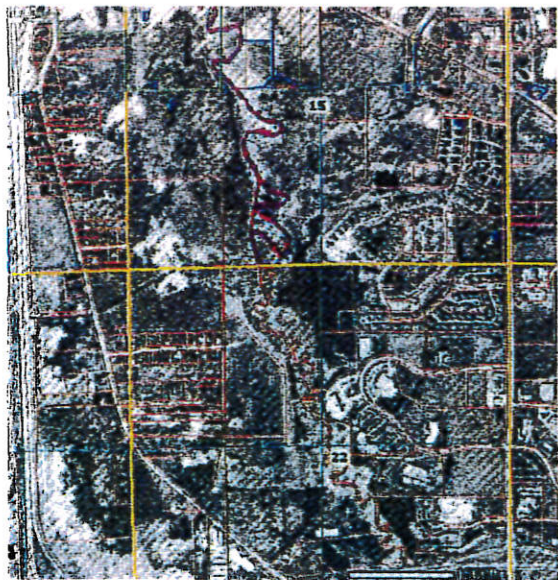
## Recommendations:

Construct two way path to the proposed Pewaukee River Greenway



# PEWAUKEE RIVER GREENWAY

**Location:** South end of Morris Street to proposed Fox River Trail



Looking east from CTH JJ

**Existing Conditions:**

Segment Type:	NA
Speed Limit:	NA
Pavement Width:	NA
Ditch Depth & Location/ Curb B to B:	NA
Existing Bike Facility:	NA
On Street Parking:	NA

**Notes:**

Waukesha County Parks and Land Use Department has proposed corridor beginning at Riverside Drive as part of their Greenway Plan

**Recommendations:**

The trail route proposed by Waukesha County could be intersected at the south end of Morris Street. Extend sidewalk on east side of Morris Street down to the trail and follow the route proposed by Waukesha County

## PEWAUKEE ROAD (CTH J)

**Location:** North Riverwood Drive to Swan Road



### Existing Conditions:

Segment Type:	URBAN ARTERIAL
Speed Limit:	45 MPH
Pavement Width:	24' PAVEMENT / 12' GRAVEL SHOULDER
Ditch Depth & Location/ Curb B to B:	1.5' DEEP / 27' FROM CENTERLINE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

### Notes:

Waukesha County and the City will construct two-way bike path as part of 2004 CTH J Reconstruction Project

### Recommendations:

Coinciding with Waukesha County's Proposed Reconstruction Plans, construct off road bike path from the northerly intersection of CTH J and Riverwood Drive to Green Road on west side of Pewaukee Road. Cross Pewaukee Road on north side of intersection at Green Road and continue bike path to Capitol Drive on east side of Pewaukee Road. Continue bike path on east side of Pewaukee Road (STH 164) to intersection with Swan Road.

One alternative under consideration is to place the path on the west side of STH 164 north of Capitol Drive. While this serves the commercial development in the Village of Pewaukee, bicyclists and pedestrians would have to cross CTH J at Capitol Dr. and then cross again at Swan Rd in order to get from CTH J to Swan Rd. For safety purposes, bike paths on both sides of STH 164 north of Capitol Drive may be warranted.



## PROSPECT AVENUE (CTH G)

**Location:** Maple Street to College Avenue



### Existing Conditions:

Segment Type:	RURAL/URBAN ARTERIAL
Speed Limit:	35 MPH
Pavement Width:	24' WITH 1.0' PAVED SHOULDER ON THE NW SIDE OF STREET
Ditch Depth & Location/ Curb B to B:	1.5' DEEP / 3' FROM ROAD EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

### Notes:

Very narrow road and rural section  
Developed trees predominately on east side of road, near pavement

### Recommendations:

Construct paved shoulders and signage. May require re-grading of ditches and tree removal  
Reduce speed limit to 30 MPH in this segment for safety

## PROSPECT AVENUE (CTH SS)

**Location:** Meadowbrook Road to the Lake Country Trail



### Existing Conditions:

Segment Type:	RURAL/URBAN ARTERIAL
Speed Limit:	35 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	1.5+' DEEP / 4' FROM PAVEMENT EDGE
Existing Bike Facility:	NONE
On Street Parking:	NONE

### Notes:

Poles on north side of street  
Many trees adjacent to roadway  
Paved shoulder varies from 0-4 feet along the segment

### Recommendations:

Construct paved shoulders and signage along segment  
Reduce speed limit to 30 MPH along segment

\*\*\*Not recommended for inexperienced or timid bicyclists due to safety concerns, until improvements are made.



## RYAN ROAD (CTH KF)

**Location:** STH 16 to proposed Ryan Park



### **Existing Conditions:**

Segment Type:	RURAL ARTERIAL
Speed Limit:	45 MPH
Pavement Width:	24' WIDE / 12' GRAVEL SHOULDER
Ditch Depth & Location/ Curb B to B:	1' DEEP / 12' FROM EDGE OF SHOULDER
Existing Bike Facility:	NONE
On Street Parking:	NONE

### **Notes:**

Existing sidewalk on east side of bridge over STH 16  
Proposed Ryan Park on east side of road to be developed by County

### **Recommendations:**

Construct two-way side path from STH 16 to Ryan Park on east side of road

# SPRINGDALE ROAD

**Location:** Capitol Drive to north leg of Glenwood Lane



Looking north from Glenwood Lane



Looking south at Green Road



Looking south from Capitol Drive

## Existing Conditions:

Segment Type:	RURAL/URBAN ARTERIAL
Speed Limit:	35 MPH
Pavement Width:	30'
Ditch Depth & Location/ Curb B to B:	1' DEEP / 7.5 FROM PAVEMENT EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

## Notes:

Nice paved shoulder on the west side of the road  
East side shoulder is narrower

## Recommendations:

Construct side path on west side of road



## SWAN ROAD

**Location:** Pewaukee Road to Lindsay Road



### Existing Conditions:

Segment Type:	RURAL COLLECTOR
Speed Limit:	35 MPH
Pavement Width:	24'
Ditch Depth & Location/ Curb B to B:	1.5'-2.0' DEEP / 4.0' FEET FROM PAVEMENT EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

### Notes:

**City wants to keep the roadway rustic**  
Narrow section with pronounced ditches

### Recommendations:

Construct two-way side path on east side of road from Pewaukee Road to Lindsay Road

Consideration should be given to purchasing additional right-of-way and move the path to the outside of the trees in order to maintain the rustic character of the road. The path may have to swing out to the road as a paved shoulder where constraints do not allow it to be separated from the road

## WATERTOWN ROAD (CTH M)

**Location:** Pewaukee Road to the Fox River Trail



### **Existing Conditions:**

Segment Type:	RURAL/URBAN ARTERIAL
Speed Limit:	45 MPH
Pavement Width:	25'
Ditch Depth & Location/ Curb B to B:	2.0 FEET DEEP / 25' FROM ROAD CENTERLINE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

### **Notes:**

Waukesha County will construct short segments on north side of road at STH 164 as part of 2004 Reconstruction Project

Relocation of utility poles may be necessary to construct path on north side of road

### **Recommendations:**

Construct two-way path from Pewaukee Road southeasterly to proposed Fox River Trail on north side of Watertown Road with crossings to the proposed residential development and/or Pewaukee River Parkway which are south of Watertown Road.



## WEYER ROAD

**Location:** Duplainville Road to east City Limits



Looking east towards City Limits



Looking west towards Duplainville Road

### Existing Conditions:

Segment Type:	RURAL/URBAN ARTERIAL
Speed Limit:	45 MPH
Pavement Width:	22
Ditch Depth & Location/ Curb B to B:	1-2' DEEP / 7' FROM PAVEMENT EDGE
Existing Bike Facility:	SHARED ROADWAY
On Street Parking:	NONE

### Notes:

Some clearing and grubbing necessary for side path  
Road is primarily open and constructible except for immediate area off of Duplainville Road  
Road has rustic qualities near Duplainville Road  
Railroad will oppose a pedestrian/bicycle crossing over the tracks parallel to Duplainville Road on east side

### Recommendations:

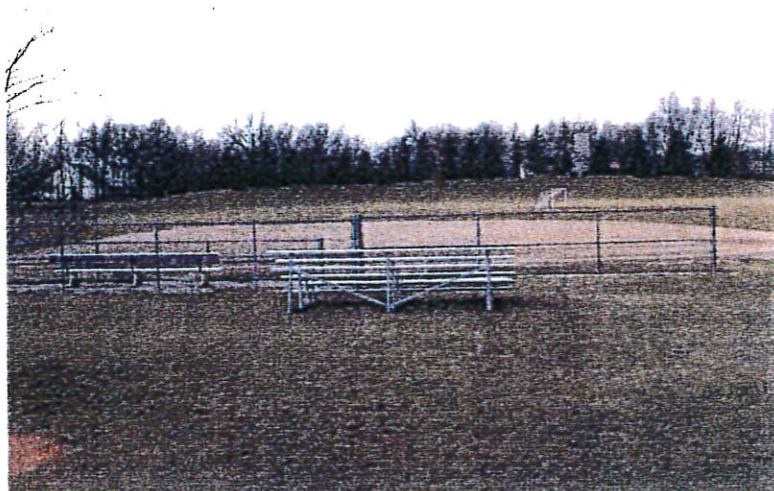
Construct a two-way path on the south side of the road

## Woodstream Ct cul-de-sac to Wagner Park

**Location:** EAST END OF CUL-DE-SAC THROUGH BERM TO PARK



Looking east from Woodstream Court



Looking west from Wagner Park

### Existing Conditions:

Segment Type:	NA
Speed Limit:	NA
Pavement Width:	NA
Ditch Depth & Location/ Curb B to B:	NA
Existing Bike Facility:	NA
On Street Parking:	NA

### Notes:

Evidence of walking trail worn into existing berm between park and subdivision

### Recommendations:

Construct short two way path from east end of Woodstream Court cul-de-sac into the park

The Park and Recreation Committee should consider adding paths within the park to the pavilion and to Northview Rd



## **RECOMMENDATIONS**

**ROUTE EVALUATION SUMMARY (SEE CHART NEXT PAGE)**

### Evaluation and Selection of Routes and Facility Types

Street Name	Location	Existing Features	Recommended Facility Type	Improvements Required	Remarks
Swan Road	Pewaukee Road to Lindsey Road	Narrow rural cross section, defined ditches close to road edge	Side path on east side of road	Right of way acquisition, extensive clearing and grubbing, ditch grading or enclosure, and signage	City wants to keep Swan Road as rustic as possible
Lindsey Road	Swan Road to Duaneville Road	Swan Rd to Balmer Park - narrow rural cross section; Barner Park to Duaneville Rd slightly more open, more potential for improvements	Side path on south side of road	Right of way acquisition, extensive clearing and grubbing, ditch grading or enclosure, and signage	City wants to keep Swan Road as rustic as possible
Pewaukee Road (CTH J)	N. Riverwood Drive to Swan Road	Two lane rural cross section	Side path according to agreement with Waukesha County	Extensive grading and shaping, possible bridge modifications, push button signalization at crossings and signage	Project already in design phase with Waukesha County
Green Rd	Pewaukee Road to Springdale Road	Moderately open rural cross section	Side path on north side of road	Tree trimming and signage	City wants to keep Green Road as rustic as possible
Waukegan Road (CTH M)	Pewaukee Road to Fox River Trail	Open rural cross section with deep ditches	Side path on north side of road	Ditch grading or enclosure, push button signalization at intersection crossings, and signage, possible power pole relocation	Waukesha County to reconstruct intersection at STH 164 in 2004 with bike paths proposed for north side of road
Prospect Avenue (CTH G)	Maple Street to College Avenue	Narrow rural cross section, defined ditches close to road edge	Paved shoulders	Move or enclose ditches, possible tree clearing, signage and styling	
Manitouk Road (CTH G)	College Avenue to the Lake County Trail	Partly open rural cross section with deep ditches	Side path on east side of road	Move poles on east side, re-grade ditch, signage	
Manitouk Road (CTH TT)	194 to Northview Road	Sidewalk on west side of right-of-way	Develop regular maintenance plan for sidewalk		At Sherman Road the path moves to the east side of Manitouk
Northview Road	Manitouk Road to South Park	Open rural cross section with moderately deep ditches	Side path on north side of road	Utility pole relocation and moderate grading	
Prospect Avenue (CTH SS)	Manitouk Road to the Lake County Trail	Narrow rural cross section with deep ditches	Construct paved shoulders	Extensive grading and shaping, possible bridge modifications, ditch re-grading or enclosure, signage and styling	Some segments not built, segments closer to Lake will be difficult with residences close to roadway.
College Avenue (CTH SS)	Prospect Avenue to Main Street	Wide paved shoulders already exists	Side path on south side of road	Grading and shaping of ditches, signage	Side path due to high speed limit along route
Capital Drive (CTH JJ)	West Village limits to west City limits	Narrow rural cross section with deep ditches	Paved shoulders	Extensive grading or enclosure of ditches, signage and styling	Low wetland area on both sides of road. DNR easers, SEWRPC engaged
Glacier Road	West Village limits to west City limits	Narrow rural cross section with deep ditches	Construct paved shoulders	Extensive grading or enclosure of ditches, signage, and styling	Not recommended for inexperienced bicyclists
Capital Drive	Pewaukee Road to Springdale Road	Four lane divided highway	Side path on south side of road	Moderate grading and clearing required	Intersections may require push button signals
Springdale Road	Capital Drive to north leg of Greenwood Lane	Rural cross section with paved shoulders	Construct bike path on west side of road	Extensive grading, clearing and grubbing	
Ryan Road (CTH KF)	STH 16 to Ryan Park	Open rural cross section road, poor sight distances due to grades and horizontal curves	Side path on east side of road	Ditch grading and signage	Proposed Ryan Park on east side of road
Duaneville Road	Weyer Road to Green Road	Open rural cross section with moderately deep ditches	Side path on west side of road	Move or enclose ditches, possible tree clearing, signage and styling	Two areas become very narrow with deep ditches. Construction under overpass could be difficult
Weyer Road	Duaneville Road to west City limits	Rural cross section with moderately deep ditches	Construct side path on south side of road	Clearing and grubbing with extensive grading	Some rustic quality to road at past end.
Off Road Paths		Existing Features	Recommended Facility Type	Improvements Required	Remarks
	Balmer Park south to STH 160	Undeveloped property	Bicycle-wide curb lane, pedestrian side path	assessment acquisition, construction	Many options
	Woodstream Ct. cul-de-sac east to Wagner Park	City park land	Side path	assessment acquisition, construction	
	Morris St thru Pkwy to River Lane	DNR Conservancy	Side path	assessment acquisition, construction	In planning phase
	Pewaukee River Pkwy to Riverwood Dr.	DNR Conservancy	Side path	assessment acquisition, construction	Waukesha County supports connection
	Jerquilyn Dr to South Park	City park land	Side path	assessment acquisition, construction	In construction phase
	East Fleethuck Dr south to Lake County Trail	Waukesha County right-of-way	Side path	assessment acquisition, construction	May be difficult due to cross crossing involved

## OPERATION AND MAINTENANCE

Poorly maintained facilities discourage use and become an eyesore. When planning a new facility, responsibility for that facility should be designated, and maintenance budgets considered. The following maintenance measures should be considered.

### *Sweeping*

Surfaces used by bicyclists that are full of stones and debris presents a hazard to bicyclists. Small rocks can deflect a wheel; sand and glass can cause tire slippage. If facilities are not kept clean, bicyclists will not use the facility. A routine sweeping plan and emergency sweeping plan should both be considered. Routine sweeping should be done at least twice a year.

### *Surface Repairs*

Defects that seem like a nuisance in a vehicle can be dangerous to a bicycle rider. Wherever possible, a smooth surface, free of cracks, potholes, bumps, and other physical problems should be provided. As with regular utility repairs, longitudinal joints should be avoided and asphalt patched should match into existing pavement.

### *Pavement Overlays*

Pavement overlays offer the best opportunity to improve bicycling conditions. Wherever possible, milling the existing pavement to remove surface irregularities that would reflect through the new pavement should be considered. The overlay material should extend to the existing pavement edge so that gravel there is not a drop off.

### *Vegetation*

Vegetation encroaching onto bicycle facilities can cause problems for both the surface and the operation. Roots from trees and other vegetation planted too close to bicycle facilities can grow under the pavement and cause heaving and break ups. Vegetation can also obstruct sight distance. Vegetation should be planted to minimize maintenance and maximize sight lines.

### *Drainage*

In many cases, bicycle facilities are designed so that storm water drainage facilities do not affect bicycle travel. Drainage grates can pose a serious problem for bicycles. In cases where drainage grates need to be placed in or near bicycle facilities, it is important to consider the following:

- If possible, install narrower grates that do not protrude into bike lanes.
- Install grates with veins or with the openings perpendicular to the water flow path.
- Provide white markings around grates to warn bicyclists of the potential problem.
- Be sure to install grates flush with the adjacent pavement.

### *Adopt A Path*

Modeled after the Adopt A Highway program, Volunteer groups could be given the task of keeping pathways free of rubbish and litter in exchange for the chance to place a sign along the pathway.

## FUNDING

Communities that are bicycle and pedestrian friendly are so because of a local commitment to funding projects. Bicycle facilities desired by the City should be included in the overall Capital Improvement Budget and be evaluated along with other capital projects. Construction of bicycle facilities should also be tied to planned roadway improvements and recreation improvements. Local funds for the planning and construction of bicycle facilities may be supplemented with state and federal money, as outlined below. Demand for these funds is great and funds are limited, so the City should not depend on these programs exclusively for implementing the recommendations of the plan.

The Transportation Equity Act (TEA-21) provides many programs and offers significant funds for Wisconsin.

The attached chart outlines the pertinent funding opportunities available at the State and Federal levels, application deadlines, and funding limits available.

## Funding Options

### TEA-21 (1998)

Program	Purpose	Funding Details	Application Date	Notes	Administering Agency	Contact
Congestion Mitigation/Air Quality (CMAQ)	Improve air quality and reduce congestion in the state's air quality non-attainment zones	12,500,000 per year statewide; 20% local match required	April of odd numbered years	Construction projects must be over \$50,000; other projects must be over \$20,000	WDOT	John Duffe (608) 264-8723
Local Transportation Enhancements	Enhance highway projects that go "above and beyond" and promote multimodal use	6,250,000 per year statewide; 20% local match required	April of even numbered years	Construction projects must be over \$50,000; other projects must be over \$20,000	WDOT	John Duffe (608) 264-8723
Surface Transportation Program-Discretionary	Foster alternatives to single occupant vehicles	2,720,000 per year statewide; 20% local match required	April of even numbered years	Construction projects must be over \$50,000; other projects must be over \$20,000	WDOT	John Duffe (608) 264-8723

### Wisconsin DNR Stewardship

Aids for the Acquisition & Development of Local Parks (ADLP)	To acquire land, rights in land, and develop public outdoor recreation areas for nature based outdoor recreation purposes.	\$4,000,000 per year statewide; up to 50% matching grants.	May 1 annually	projects must be nature based and be part of an approved Comprehensive Outdoor Recreation Plan.	WDNR	Leslie Gauberti (608) 267-0497
Urban Green Space Program	Provide open natural space in proximity to urban development	\$1,600,000 per year statewide; up to 50% matching grants.	May 1 annually	Land acquisitions necessary for the project; project must be approved by a Comprehensive Outdoor Recreation Plan.	WDNR	Leslie Gauberti (608) 267-0497
Urban Rivers Program (URGP)	Projects improving the quality of urban waterways through preservation, restoration, or enhancement.	\$1,600,000 per year statewide; up to 50% matching grants.	May 1 annually	Projects must fulfill the purpose and be part of an approved Outdoor Recreation Plan.	WDNR	Leslie Gauberti (608) 267-0497

## REFERENCES

- AASHTO "Guide for the Development of Bicycle Facilities", 1999.
- Wisconsin Department of Transportation "Wisconsin Bicycle Planning Guidance 2020", September 1993.
- SEWRPC Planning Report No. 43 "A Regional Bicycle and Pedestrian System Plan for Southeastern Wisconsin: 2010".
- SEWRPC "A Development Plan For Waukesha County Wisconsin" Community Assistance Planning Report No. 209, August 1996.
- Wisconsin Department of Transportation "Wisconsin Bicycle Transportation Plan", September 1998.
- Waukesha County "Greenway Plan", (In Development).
- City of Brookfield "Greenway Corridor Recreational Trail Plan", July 2002.
- Town of Delafield "Comprehensive Outdoor Recreation Plan", Rev. March 1999.
- Village of Pewaukee "Bike Plan", January 26, 1999.



Bike Plan Map

## EXHIBITS

## APPENDIX

1 □

2001 Wisconsin Bicycle Crash Data

AASHTO Design Standards

# 2001 WISCONSIN BICYCLE CRASH DATA

## 2001 Bicycle Crashes by Month and Severity Total Killed, Total Injured by Urban/Rural Location

Month	Fatal Crashes			Injury Crashes			Property Damage Crashes			Total Crashes			Total Persons Killed			Total Persons Injured		
	Rur	Urb	Total	Rur	Urb	Total	Rur	Urb	Total	Rur	Urb	Total	Rur	Urb	Total	Rur	Urb	Total
Jan	0	0	0	4	8	12	0	0	0	4	8	12	0	0	0	4	9	13
Feb	0	0	0	2	8	10	0	0	0	2	8	10	0	0	0	2	8	10
Mar	0	0	0	4	24	28	0	0	0	4	24	28	0	0	0	4	26	30
Apr	1	0	1	5	49	54	0	1	1	6	50	56	1	0	1	6	52	58
May	0	0	0	23	116	139	1	4	5	24	120	144	0	0	0	25	118	143
Jun	2	1	3	38	158	196	2	7	9	42	166	208	2	1	3	42	167	209
Jul	0	0	0	33	165	198	4	5	9	37	170	207	0	0	0	34	168	202
Aug	0	0	0	41	150	191	1	8	9	42	158	200	0	0	0	48	155	203
Sep	0	2	2	14	131	145	2	7	9	16	140	156	0	2	2	15	133	148
Oct	1	2	3	20	84	104	0	3	3	21	89	110	1	2	3	22	87	109
Nov	0	0	0	7	51	58	1	1	2	8	52	60	0	0	0	7	53	60
Dec	0	0	0	2	22	24	0	1	1	2	23	25	0	0	0	2	24	26
TOTAL	4	5	9	193	966	1,159	11	37	48	208	1,008	1,216	4	5	9	211	1,000	1,211

Total Persons Killed and Total Persons Injured include everyone killed or injured in crashes involving bicycles, not just bicyclists.

Rural = an unincorporated area or an incorporated area with a population under 5,000.

Urban = an incorporated area with a population of 5,000 or more.

## 2001 Bicycle Crashes by Time of Day and Day of Week

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	TOTAL
12-1 AM	3	0	0	1	3	1	2	10
1-2 AM	0	0	1	0	0	0	2	3
2-3 AM	0	1	1	1	0	2	3	8
3-4 AM	2	1	0	0	0	0	1	4
4-5 AM	0	0	0	1	1	0	0	2
5-6 AM	0	2	0	0	0	0	0	2
6-7 AM	1	4	4	3	4	1	1	18
7-8 AM	0	6	12	9	9	7	2	45
8-9 AM	1	4	6	10	4	8	3	36
9-10 AM	2	0	7	6	5	2	5	27
10-11 AM	8	6	7	3	3	5	12	44
11-12 PM	6	9	11	9	4	9	12	60
12-1 PM	10	9	10	12	10	10	12	73
1-2 PM	8	8	9	7	14	10	13	69
2-3 PM	9	17	12	6	15	17	9	85
3-4 PM	7	19	33	14	34	20	12	139
4-5 PM	9	16	24	25	28	26	12	140
5-6 PM	15	24	26	28	25	23	8	149
6-7 PM	12	9	21	16	12	16	11	97
7-8 PM	7	14	13	13	15	13	10	85
8-9 PM	6	7	4	11	7	6	4	45
9-10 PM	0	5	7	4	7	6	6	35
10-11 PM	2	3	1	2	0	3	3	14
11-12 AM	1	3	1	4	1	3	0	13
Unknown	0	3	0	3	2	2	3	13
TOTAL	109	170	210	188	203	190	146	1,216

## 2001 Bicycle Crashes by Manner of Collision and Highway Class by Urban/Rural Location

Manner of Collision	Local Street/Road			County Highway		State Highway			Interstate			TOTAL		
	Rural	Urban	Total	Rural	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
No collision w/vehicle in transit	38	388	426	17	17	30	101	131	1	2	3	86	491	577
Angle	54	377	431	4	4	25	53	78	1	1	2	84	431	515
Side swipe same	4	28	32	4	4	7	4	11	0	0	0	15	32	47
Rear end	5	21	26	4	4	3	0	3	0	0	0	12	21	33
Head on	2	6	8	1	1	1	0	1	0	0	0	4	6	10
Side swipe opposite	4	3	7	0	0	0	2	2	0	0	0	4	5	9
Unknown	1	20	21	0	0	2	2	4	0	0	0	3	22	25
<b>TOTAL</b>	<b>108</b>	<b>843</b>	<b>951</b>	<b>30</b>	<b>39</b>	<b>68</b>	<b>162</b>	<b>230</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>208</b>	<b>1,008</b>	<b>1,216</b>

Rural = an unincorporated area or an incorporated area with a population under 5,000.  
Urban = an incorporated area with a population of 5,000 or more.

## 2001 Bicyclists Injured or Killed by Age and Injury Severity by Gender

Age	Severity of Injury by Gender												Total Injured or Killed		
	Killed			Incapacitating			Nonincapacitating			Possible					
	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total
Under 4	0	0	0	1	1	2	0	0	0	0	0	0	1	1	2
4	0	0	0	0	0	0	0	2	2	0	4	4	0	6	6
5-9	0	1	1	8	17	25	22	40	62	5	43	48	35	101	136
10-14	0	3	3	10	31	41	49	149	198	38	93	131	97	276	373
15	0	0	0	2	7	9	10	24	34	5	20	25	17	51	68
16	0	0	0	0	2	2	3	13	16	5	19	24	8	34	42
17	0	0	0	0	2	2	4	6	10	2	11	13	6	19	25
18	0	0	0	2	3	5	3	9	12	2	12	14	7	24	31
19	0	0	0	1	3	4	9	10	19	2	1	3	12	14	26
20	0	0	0	0	2	2	6	9	15	1	7	8	7	18	25
21	0	0	0	0	1	1	4	11	15	3	6	9	7	18	25
22	0	0	0	2	0	2	6	9	15	1	3	4	9	12	21
23	0	0	0	1	0	1	1	9	10	3	7	10	5	16	21
24	0	0	0	1	1	2	1	5	6	2	8	10	4	14	18
25-34	0	0	0	9	13	22	16	38	54	13	25	38	38	76	114
35-44	0	1	1	1	14	15	12	48	60	14	27	41	27	90	117
45-54	0	1	1	3	11	14	8	35	43	5	21	26	16	68	84
55-64	0	2	2	0	4	4	4	11	15	2	3	5	6	20	26
65-74	0	1	1	0	1	1	1	8	9	1	4	5	2	14	16
75 & over	0	0	0	0	1	1	0	5	5	0	1	1	0	7	7
Unknown	0	0	0	0	1	1	1	1	2	2	0	2	3	2	5
TOTAL	0	9	9	41	115	156	160	442	602	106	315	421	307	881	1,188

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# AASHTO DESIGN STANDARDS

## HORIZONTAL ALIGNMENT

$$R = \frac{0.067V^2}{\tan \theta}$$

Where:

$R$ =Minimum Radius of Curvature (ft)

$V$ =Design Speed (mph)

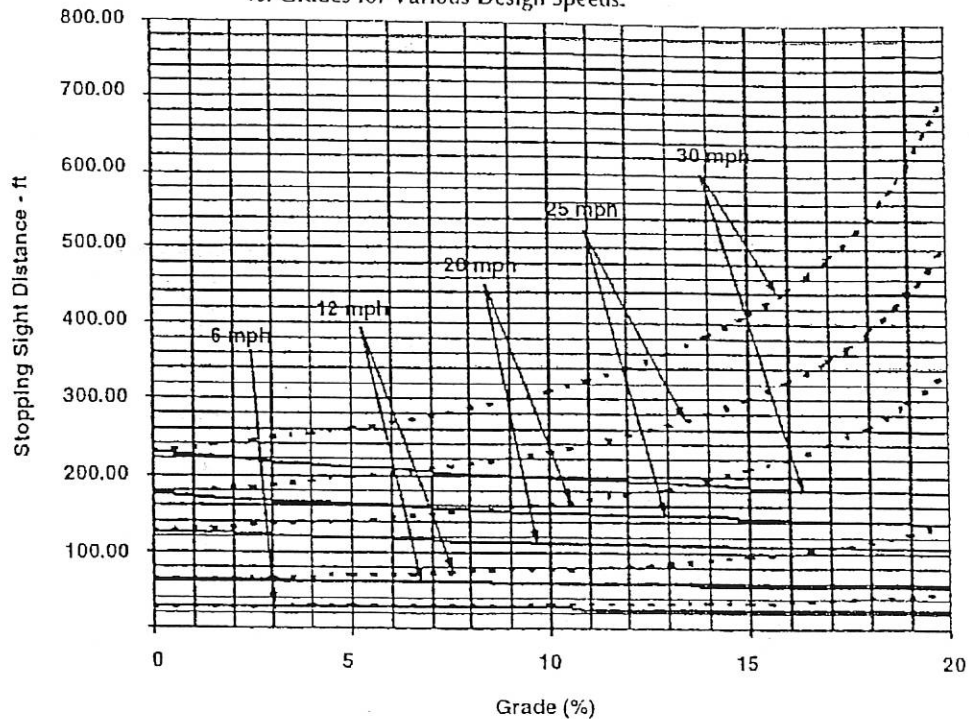
$\theta$ =Lean Angle from the vertical (degrees)

## GRADE

5-6%	for up to 800 ft
7%	for up to 400 ft
8%	for up to 300 ft
9%	for up to 200 ft
10%	for up to 100 ft
11+%	for up to 50 ft

## STOPPING SIGHT DISTANCE

Minimum Stopping Sight Distance  
vs. Grades for Various Design Speeds.



Descend  
Ascend

-----  
—————

$$S = \frac{V^2}{30(f \pm G)} + 3.67V$$

Where:  $S$  = stopping sight distance (ft)  
 $V$  = velocity (mph)  
 $f$  = coefficient of friction (use 0.25)  
 $G$  = grade (ft/ft) (rise/run)



# AASHTO DESIGN STANDARDS

Minimum Length of Crest Vertical Curve (L) Based on Stopping Sight Distance

A	S=Stopping Sight Distance														
(%)	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300
2												30	70	110	150
3								20	60	100	140	180	220	260	300
4						15	55	95	135	175	215	256	300	248	400
5					20	60	100	140	180	222	269	320	376	436	500
6				10	50	90	130	171	216	267	323	384	451	523	600
7				31	71	111	152	199	252	311	376	448	526	610	700
8			8	48	88	128	174	228	288	356	430	512	601	697	800
9			20	60	100	144	196	256	324	400	484	576	676	784	900
10			30	70	111	160	218	284	360	444	538	640	751	871	1000
11			38	78	122	176	240	313	396	489	592	704	826	958	1100
12		5	45	85	133	192	261	341	432	533	645	768	901	1045	1200
13		11	51	92	144	208	283	370	468	578	699	832	976	1132	1300
14		16	56	100	156	224	305	398	504	622	753	896	1052	1220	1400
15		20	60	107	167	240	327	427	540	667	807	960	1127	1307	1500
16		24	64	114	178	256	348	455	576	711	860	1024	1202	1394	1600
17		27	68	121	189	272	370	484	612	756	914	1088	1277	1481	1700
18		30	72	128	200	288	392	512	648	800	968	1152	1352	1568	1800
19		33	76	135	211	304	414	540	684	844	1022	1216	1427	1655	1900
20		35	80	142	222	320	436	569	720	889	1076	1280	1502	1742	2000
21		37	84	149	233	336	457	597	756	933	1129	1344	1577	1829	2100
22		39	88	156	244	352	479	626	792	978	1183	1408	1652	1916	2200
23		41	92	164	256	368	501	654	828	1022	1237	1472	1728	2004	2300
24	3	43	96	171	267	384	523	683	864	1067	1291	1536	1803	2091	2400
25	4	44	100	177	278	400	544	711	900	1111	1344	1600	1878	2178	2500

When  $S > L$ ,  $L = 2S - \frac{900}{A}$

Shaded area represents  $S = L$ .

When  $S < L$ ,  $L = \frac{AS^2}{900}$

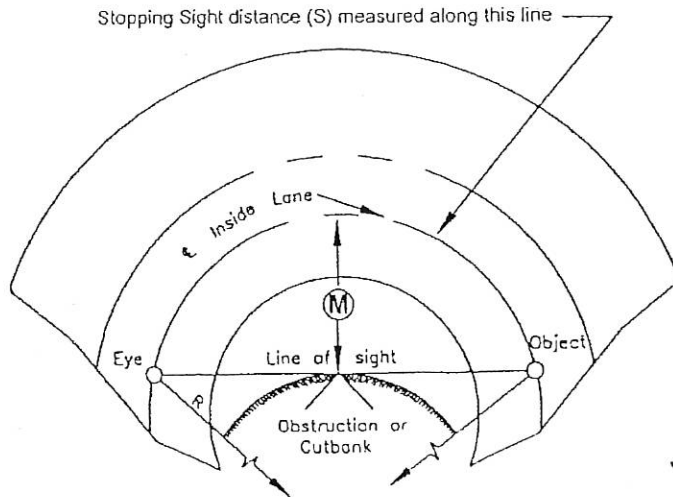
L = Minimum Length of Vertical Curve (ft)

A = Algebraic Grade Difference (%)

S = Stopping Sight Distance (ft)

Height of cyclist's eye = 4.5 ft

Height of object = 0 ft



S = Stopping Sight Distance (m)  
R = Radius of centerline of lane (m)  
M = Distance from centerline of lane to obstruction (m)

Angle is expressed in degrees

$$M = R \left[ 1 - \cos \left( \frac{28.65S}{R} \right) \right]$$

$$S = \frac{R}{28.65} \left[ \cos^{-1} \left( \frac{R - M}{R} \right) \right]$$

Formula applies only when S is equal to or less than length of curve.

Line of sight is 700 mm above centerline of inside lane at point of obstruction.

For Metric Units:

S = Stopping Sight Distance (m)

R = Radius of centerline of lane (m)

M = Distance from centerline of lane to obstruction (m)

For English Units:

S = Stopping Sight Distance (ft)

R = Radius of centerline of lane (ft)

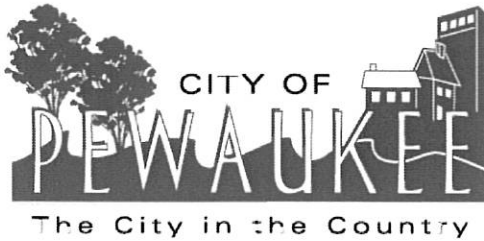
M = Distance from centerline of lane to obstruction (ft)

# AASHTO DESIGN STANDARDS

R (ft)	S = Stopping Sight Distance (ft)														
	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300
25	2.0	7.6	15.9												
50	1.0	3.9	8.7	15.2	23.0	31.9	41.5								
75	0.7	2.7	5.9	10.4	16.1	22.8	30.4	38.8	47.8	57.4	67.2				
95	0.5	2.1	4.7	8.3	12.9	18.3	24.7	31.8	39.5	48.0	56.9	66.3	75.9	85.8	
125	0.4	1.6	3.6	6.3	9.9	14.1	19.1	24.7	31.0	37.9	45.4	53.3	61.7	70.6	79.7
155	0.3	1.3	2.9	5.1	8.0	11.5	15.5	20.2	25.4	31.2	37.4	44.2	51.4	59.1	67.1
175	0.3	1.1	2.6	4.6	7.1	10.2	13.8	18.0	22.6	27.8	33.5	39.6	46.1	53.1	60.5
200	0.3	1.0	2.2	4.0	6.2	8.9	12.1	15.8	19.9	24.5	29.5	34.9	40.8	47.0	53.7
225	0.2	0.9	2.0	3.5	5.5	8.0	10.8	14.1	17.8	21.9	26.4	31.3	36.5	42.2	48.2
250	0.2	0.8	1.8	3.2	5.0	7.2	9.7	12.7	16.0	19.7	23.8	28.3	33.1	38.2	43.7
275	0.2	0.7	1.6	2.9	4.5	6.5	8.9	11.6	14.6	18.0	21.7	25.8	30.2	34.9	39.9
300	0.2	0.7	1.5	2.7	4.2	6.0	8.1	10.6	13.4	16.5	19.9	23.7	27.7	32.1	36.7
350	0.1	0.6	1.3	2.3	3.6	5.1	7.0	9.1	11.5	14.2	17.1	20.4	23.9	27.6	31.7
390	0.1	0.5	1.2	2.1	3.2	4.6	6.3	8.2	10.3	12.8	15.4	18.3	21.5	24.9	28.5
500	0.1	0.4	0.9	1.6	2.5	3.6	4.9	6.4	8.1	10.0	12.1	14.3	16.8	19.5	22.3
565		0.4	0.8	1.4	2.2	3.2	4.3	5.7	7.2	8.8	10.7	12.7	14.9	17.3	19.8
600		0.3	0.8	1.3	2.1	3.0	4.1	5.3	6.7	8.3	10.1	12.0	14.0	16.3	18.7
700		0.3	0.6	1.1	1.8	2.6	3.5	4.6	5.8	7.1	8.6	10.3	12.0	14.0	16.0
800		0.3	0.6	1.0	1.6	2.2	3.1	4.0	5.1	6.2	7.6	9.0	10.5	12.2	14.0
900		0.2	0.5	0.9	1.4	2.0	2.7	3.6	4.5	5.6	6.7	8.0	9.4	10.9	12.5
1000		0.2	0.5	0.8	1.3	1.8	2.4	3.2	4.0	5.0	6.0	7.2	8.4	9.8	11.2

Minimum Lateral Clearance (M) for Horizontal Curves





## Department of Public Works

W240 N3065 Pewaukee Road  
Pewaukee, WI 53072

DPW Main Office: (262)-691-0804 Fax: 691-5729  
Water & Sewer Division 691-0804 Fax: 691-5729  
Street Division 691-0771 Fax: 691-6079  
Engineering Division 691-0804 Fax: 691-5729

TO: Public Works Commission

FR: Jeffrey Weigel, Public Works Director

DT: October 26, 2015

RE: Consideration of the City Bicycle and Pedestrian Plan update and Impact Fee Study changes

### REQUESTED ACTION:

Committee recommends to the Common Council that the Bicycle and Pedestrian Plan be updated to include as priorities:

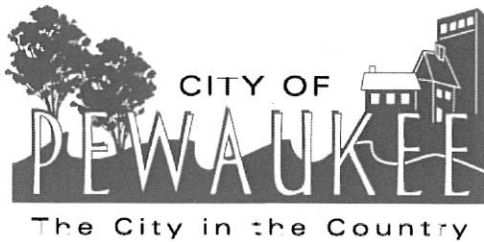
- 1) Connection to the Lake Country Trail from E. Fieldhack Drive;
- 2) STH 164 Traffic Signal Changes to account for Pedestrian/Bicycle Crossing of STH 164 (Pewaukee Road) from the Central Fire Station to the shared use path on the west side of STH 164 at the Ridgeview/Avondale intersection;
- 3) Complete connection on Northview Road from South Park easterly to Meadowbrook Road (Waukesha West Bypass)
- 4) Continued efforts to connect residential areas to the City's Local Parks.

And, the attendant updating of the City Impact Fee Study that would include these projects as Impact Fee eligible funding projects.

### ISSUE:

In 2003 the City first adopted the Bicycle and Pedestrian Plan. Recently, the City adopted an Impact Fee, based on a study that included fees collected to fund specific Hike/Bike projects. Part of the City Strategic Planning process is to review or revisit the specific goals and objectives. This is a prudent time to revisit the Hike/Bike project list that was based, in part on the 2003 Bicycle and Pedestrian Plan, especially since several of the Impact Fee eligible projects have been cancelled by the Common Council (such as on Green Road).

The enclosed July 23<sup>rd</sup> memo to the Common Council summarizes the comments received at the various boards, committees and commissions on this issue. The summary requested action would begin the process of updating both plans/studies.



## Department of Public Works

W240 N3065 Pewaukee Road  
Pewaukee, WI 53072

DPW Main Office: (262)-691-0804 Fax: 691-5729  
Water & Sewer Division 691-0804 Fax: 691-5729  
Street Division 691-0771 Fax: 691-6079  
Engineering Division 691-0804 Fax: 691-5729

TO: Common Council

FR: Jeffrey Weigel, Public Works Director

DT: December 14, 2015

RE: Authorize updates to the Bicycle and Pedestrian Plan and the Impact Fee Study

### REQUESTED ACTION:

Common Council concurs with the recommendation of the Public Works Committee (10/29/15) to authorize staff to prepare updates to the Bicycle and Pedestrian Plan; and to prepare an update to the Impact Fee Study as requested in the attached October 26, 2015 memorandum to the Committee.

### RATIONALE:

The Public Works Committee unanimously approved the recommendation as requested.



In attendance: Mayor S. Klein, Aldermen C. Brown, J. Kara, D. Noll, J. Wamser and B. Bergman (arrived at 7:03pm). S. Bierce was absent and excused. Also present were Clerk/Treasurer K. Tarczewski, City Administrator T. LaBorde, DPW Director J. Weigel, Lieutenant B. Ripplinger and Attorney S. Riffle.

- 1.0 Call to Order and Pledge of Allegiance - Mayor Klein called the meeting to order at 7:01 p.m.
- 2.0 Public Comment ó None.
- 3.0 Consent Agenda ó Action
  - 3.1 Approval of Common Council Meeting Minutes dated December 7, 2015
  - 3.2 Accounts Payable Summaries
  - 3.3 **Approve Resolution 15-12-28** Appointment of Poll Workers
  - 3.4 **Approve** Building Inspection Services Contract with the Village of Pewaukee for 2016

**A motion was made and seconded, (D. Noll, C. Brown) to approve the consent agenda.** Motion Passed: 5-For, 0-Against.

- 4.0 Consideration and Possible Action to return the Premier Fox Preserve LLC cash deposit tendered under the Fill Material and Grading Agreement for Fox River Preserve

Attorney Riffle stated that this issue is from 2-1/2 years ago. The developer needs to show that their wetland mitigation plan was fulfilled. He suggested that the Council authorize staff to release the deposit once verification was received as to the completion of the wetland mitigation plan.

**A motion was made and seconded (J. Wamser, D. Noll) to authorize staff to release the cash deposit of Premier Fox Preserve LLC once verification is received as to the completion of the wetland mitigation plan.** Motion Passed: 5-For, 0-Against.

- 5.0 Discussion and Action to Approve **Resolution 15-12-29** to Set the Fee Schedule for 2016

Ms. LaBorde reviewed proposed changes with the Council. The hotel license fee was removed, an ordinance will be brought in January regarding language on the cigarette license, Escort license was moved under licenses, Dog Kennel license was split into Commercial at \$45 per year and Hobby at \$35 per year, Non-Metallic Mining was removed as Waukesha County now handles it, Added fee for Special Event Permit for those who don't file timely or who don't file at all, Close Out Sale license was removed, Copy charges were clarified 11x17 ö \$1.00 per page and plat size copies at \$10 per page, Special Assessment letter has 3 to 5 day turnaround, Add charge for Special Common Council Meeting \$500, Building inspection new charge if need re-inspection, Increase in State Seal fee, Impact fees went down slightly due to reduction in consumer price index, Reflected 2016 garbage rate and up-the-drive rate, Fire Alarm and inspection charges clarified overlaps, Increase in launch fees to \$7 and seasonal pass to \$50, and the addition of court costs to several law enforcement fees.

Ms. Brown requested that the Zoning Board of Appeals fees be reviewed next year.

**A motion was made and seconded (J. Wamser, B. Bergman) to approve Resolution 15-12-29 to Set the Fee Schedule for 2016.** Motion Passed: 5-For, 0-Against.

6.0 Discussion and Possible Action on the First Amendment to the Prairie Grass Apartment Development Agreement

Mr. Weigel stated that with the onset of winter, the developer needs to build a public road at the end of E. Fieldhack Road. The amendment will allow them to construct a cul-de-sac of gravel.

**A motion was made and seconded (B. Bergman, J. Wamser) to approve the first amendment to the Prairie Grass Apartment Development Agreement to construct a gravel road as recommended by staff.** Motion Passed: 5-For, 0-Against.

7.0 City Hall Water Tower

7.1 Discussion and Possible Action to Award the construction contract for the City Hall Water Tower (bids open Dec. 16<sup>th</sup>)

**A motion was made and seconded (C. Brown, D. Noll) to award the construction contract for the City Hall Water Tower to Phoenix Fabricators and Erectors, Inc. in the amount of \$2,352,125.**

Motion Passed: 5-For, 0-Against.

8.0 Discussion and Possible Action to Approve the WE Energies Easement on the City Water & Sewer Utility Parcel on Northmound Road

**A motion was made and seconded (D. Noll, J. Wamser) to approve the WE Energies Easement on the City Water & Sewer Utility Parcel on Northmound Road.**

Motion Passed: 5-For, 0-Against.

9.0 Discussion and Possible Action to Authorize professional staff to prepare updates to the City Bicycle and Pedestrian Plan and Impact Fee Study as it relates to Bicycle and Pedestrian facilities (Public Works Committee, Plan Commission, Joint Park/Recreation Board)

Mr. Weigel stated this item had been presented to the Public Works Committee, Plan Commission, and Joint Park/Recreation Board. He is looking for approval to update the plan and move forward with an Impact Fee Study. The Public Works Committee has identified four projects.

**A motion was made and seconded (D. Noll, J. Wamser) to concur with the Public Works Committee and authorize professional staff to prepare updates to the City Bicycle and Pedestrian Plan and Impact Fee Study and include the four listed projects as priorities.**

Motion Passed: 5-For, 0-Against.

10.0 Discussion and Possible Action to Reschedule First Meeting in January  
No action was taken to reschedule this meeting.

11.0 Discussion and Possible Action Regarding Appointments to Various Boards, Commissions and Committees

Mayor Klein had no recommendations at this time.

12.0 Public Comment ó None.

13.0 Adjourn Into Closed Session ó You are hereby notified that the Common Council of the City of Pewaukee will convene into closed session after all regular scheduled business has been concluded and upon motion duly made and seconded and acted upon by roll-call vote as

required under §19.85(1)(a), Stats. Common Council members and staff will attend the closed session. The purpose of the closed session is for the following:

- Confer with legal counsel who is rendering oral or written advice concerning strategy to be adopted with respect to litigation in which it is likely to become involved as authorized under §19.85(1)(g), Stats., specifically to be discussed is potential litigation to enforce the provisions of §6.035 of the City Ordinances against specified individual(s).

You are further notified that at the conclusion of the Closed Session, the Common Council may convene into open session pursuant to §19.85(2), Stats., for possible additional discussion and action concerning any matters discussed in closed session and for adjournment.

**A motion was made and seconded (D. Noll, C. Brown) to go into closed session at 7:49 p.m.** Motion Passed via Roll Call Vote: 5-For, 0-Against.

14.0 Adjournment ó **A motion was made and seconded, (D. Noll, B. Bergman) from closed session to adjourn at 8:13 p.m.** Motion Passed: 5-For, 0-Against.

Respectfully Submitted,

Kelly Tarczewski  
Clerk/Treasurer

**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 5.**

**DATE:** January 17, 2018

**DEPARTMENT:** Administration

**PROVIDED BY:**

***SUBJECT:***

Discussion Regarding the Pewaukee School District's Proposed Bike Rodeo [Vitale]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***



**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 6.**

**DATE:** January 17, 2018

**DEPARTMENT:** Administration

**PROVIDED BY:**

***SUBJECT:***

Discussion Regarding the Status of a Paved Path on Pewaukee School District Property [Vitale]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 7.**

**DATE:** January 17, 2018

**DEPARTMENT:** Administration

**PROVIDED BY:**

***SUBJECT:***

Discussion Regarding the Creation of a Bicycle and Pedestrian Safety Flyer [Ford]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Bicyclist Ride Rights

Bike Family

Share the Road

SABA Pledge

# BICYCLISTS: RIDE RIGHT



Photographer: Dave Schlabowski



**WISCONSIN  
BIKE FED**

*the Share & Be Aware campaign*

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## 1

### **FOLLOWING THE RULES OF THE ROAD**

- Ride with traffic and obey the same laws as motorists.
- Use the rightmost lane that heads in the direction that you are traveling.
- Obey all traffic control devices, such as stop signs, lights, and lane markings.
- Always look back when changing lane position. Use hand and arm signals to indicate your intention to stop, merge or turn.

## 2

### **BE VISIBLE**

- Ride where drivers can see you, 3 feet from the edge of the roadway and parked cars.
- At night, use a white front light and red rear light or reflector. Wear reflective tape or clothing if practical.

## 3

### **BE PREDICTABLE**

- Ride in a straight line. Do not swerve between parked cars.
- Make eye contact with motorists to let them know you are there.
- Adults should not ride on the sidewalk.

## 4

### **WEAR HELMET PROPERLY**

- Make sure that the helmet fits on top of your head, not tipped back or forward.
- After a crash or any impact that affects your helmet, visible or not, replace it immediately.

## 5

### **SHARE & BE AWARE**

- Be aware of traffic around you and be prepared to take evasive action.
- Be extra alert at intersections.
- Learn braking and turning techniques to avoid crashes.
- Yield to pedestrians on trails and in crosswalks

Learn how **YOU** can make Wisconsin roads safer for everyone at [WisconsinBikeFed.org](http://WisconsinBikeFed.org)





# FAMILY BICYCLING

## General Tips

- Children and adults should always wear a snugly fitted helmet with the chin strap buckled. For more information, go to [www.helmets.org](http://www.helmets.org)
- Don't carry a baby on a bicycle until the child can sit upright while supporting the weight of its own head and helmet.
- Adults should teach by example: Wear a helmet everytime you ride and obey all traffic laws.
- Being visible can save a life. Use flags, flashing lights, and reflectors on all types of child carriers, as well as on children's bikes
- Check that small children and all equipment are secure and safely strapped in before each and every ride.



Photographer: Dave Schlabowske



Photographer: Pete DiAntoni



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BIKE FED**

Learn how YOU can make Wisconsin roads safer for everyone at [WisconsinBikeFed.org](http://WisconsinBikeFed.org)



Thanks to the Active Transportation Alliance for the source material.

Funded by the Wisconsin Bike Fed and the  
Wisconsin Department of Transportation  
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# Carrying kids on your bike

## TRAILERS:

- Trailers are very stable and are easily attached to bicycle. Some models can carry two children.
- Trailers are wider than your bicycle, so take some practice trips without the children to get used to the width.
- Always have a flag on your trailer. A trailer is lower to the ground and a motorist might not see it.

### TIP

- Never carry a child on your body while bicycling
- While carrying a child on your bike, remember to allow more stopping distance (because of the increased weight)



### TIP

#### TOP-TUBE MOUNTING CHILD SEATS:

- Advantage: Child is in front of the parent and can hold onto the handle bars. The parent can see and talk to the child.

## REAR CHILD SEATS:

- Should reach higher than the child's head.
- Should mount a secure rear-carrying rack.
- Should carry kids no younger than 12 months and no heavier than 40 pounds.
- To get on: Immobilize the bike by having another adult hold it, or lean it against a wall. Don't use the kick stand. Put the child in, then get on.
- To get off: Immobilize the bike by having another adult hold it or lean it against a wall. Don't use the kickstand. Then get off. Hold the bike still and take off the child.

# Using a trailercycle or tandem



Photographer: Trek Bicycle

- For kids too big for a child seat and too young to ride alone.
- Getting on: Stand over the bicycle to steady it, then have the child mount the trailercycle or tandem.
- Have the child always keep their hands on the handlebars, seat on the saddle, and feet on the pedals.
- When using a trailercycle, Instruct the child not to put feet down at stops.

# Riding with children on their own bikes

- Children should ride in a single-file line.
- With one adult, ride behind and slightly to the left of the children.
- With two adults, one rides in front and the more experienced biker rides in the back.
- Adults should keep talking to the kids, telling them where to go, and coaching them on their position.

### TIP

#### SIDEWALK vs. STREET RIDING?

Some Options:

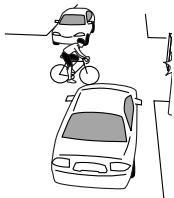
- Have children ride on the sidewalk and you run along next to them.
- Ride along with your children on the sidewalk at a very slow speed.
- Have your children ride on the sidewalk and you ride on the street beside them.
- Coach your children to watch for cars entering and leaving driveways and alleys.
- Children under 10 should ride on the sidewalk.



Share & Be Aware is a statewide campaign to increase pedestrian and bicyclist safety by educating all road users.

## A BICYCLIST MIGHT SUPRISE YOU

The law says that adult bicyclists must ride in the street and obey all of the same rules as car drivers. But **NOT ALL BICYCLISTS DO!** Use your driving skills to avoid crashes, even when it's not your fault.



## AVOID A SIDE HIT

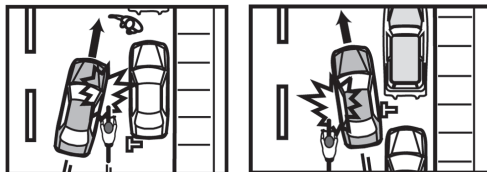
When you see a bicyclist on a cross street coming to a red light or stop sign, get ready to brake. The bicyclist might cross in front of you.

## AVOID A HEAD-ON CRASH

If you see a bicyclist riding the wrong way (against traffic) slow down and pass with lots of room.

## YIELD TO BICYCLISTS WHEN PULLING OVER

Before you pull over, put on your turn signal, then look over your shoulder to check for bicyclists. If you see any bicyclists, **YIELD**. Let them pass before you pull over.



When you stop temporarily, put on your hazard lights so bicyclists know it's safe to pass.

Before you pull out, use a turn signal. Look over your left shoulder for bicyclists in your blind spot.

## SAFELY EXIT YOUR VEHICLE: AVOID A "DOORING"



Before exiting your vehicle check over your shoulder for bicyclists and warn passengers to do the same. Keep your car door closed until the bicyclists pass. They have the right of way.

# MOTORISTS: SHARE THE ROAD



Photographer: Dave Schlabowske



**WISCONSIN  
BIKE FED**

*the Share & Be Aware campaign*


**WHY** should you learn to **DRIVE** next to **BICYCLES**? Bicyclists and motorists share all the same rights and responsibilities on the road.

Bicycles are legal vehicles and can be ridden on streets.

Crashes with motor vehicles cause more injuries than any other type of bicycle crash.

As a driver, it is your responsibility to look out for all other road users, including people biking and walking who are more vulnerable.

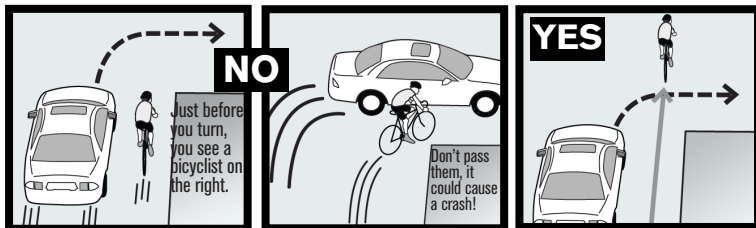
## SHARING THE ROAD WITH BICYCLISTS



1. Bicyclists often must merge with faster moving traffic to avoid hazards and double parked vehicles. When bicyclists merge in front of you, let them in and don't follow too closely. Don't honk unless it is a case of extreme danger.
2. If you can, you should change lanes before passing bicyclists. Always slow down and pass them with at least **THREE FEET** of space. Then wait until you can see them in your mirror before going back into the lane.
3. Avoid a driveout. Before exiting an alley or driveway, stop and look for bicyclists and pedestrians on the sidewalk and street.
4. This car is passing too closely for the bicyclists to avoid hazards (like opening car door). To avoid a crash, always leave at least **THREE FEET** of space between any bicyclist and your car.

## TURNING RIGHT

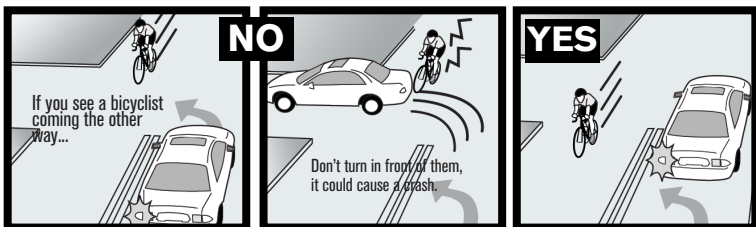
Always look for and yield to bicyclists



**WAIT** and let the biker go through the intersection first, then turn. **CHECK** the sidewalk for bicyclists and pedestrians crossing the street.

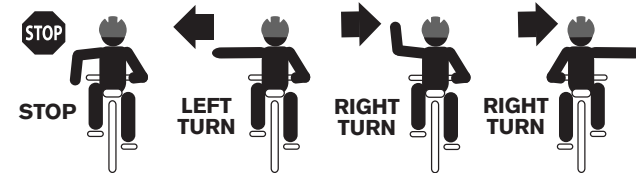
## TURNING LEFT

Bicyclists can move faster than you think



**WAIT** for the bicyclist to pass the intersection before you turn. **KEEP** your turn signal on. **LOOK** for pedestrians and then make your turn.

## BICYCLIST TURN SIGNALS



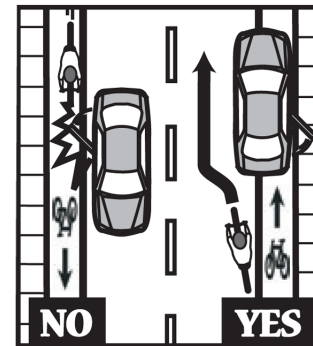
Bicyclists often use hand signals when they are going to turn.

## BIKE LANES

It is illegal to drive or park in bike lanes.

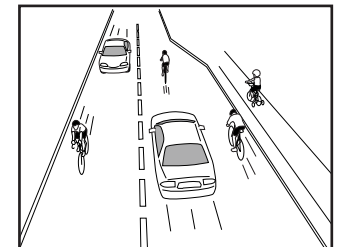
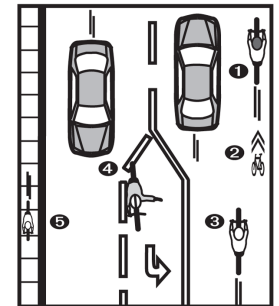
When entering the bike lane to turn or parallel park, always:

- Yield to bicyclist
- Use your turn signal
- Pull all the way into the bike lane so bicyclist will pass on the left



## BE AWARE OF BICYCLE TRAFFIC

1. Bicyclists usually ride just to the right of faster moving traffic.
2. If you see this symbol on the pavement, it means you will likely have to share a lane with a bicyclist.
3. Where a lane is too narrow, bicyclists may ride in the middle. Change lanes before you pass them and leave at least **THREE FEET**. Don't follow closely because bicyclists can stop suddenly.
4. The law says bicyclists may use the **LEFT LANE** to turn. Let them merge and don't follow too closely. Before moving into a left turn lane, check over your left shoulder for bicyclists.



## WHERE BIKERS SHOULD RIDE

1. In the road.
2. In a wide lane, bicyclists can share the lane with car drivers.
3. In a narrow lane, bicyclists should ride in the middle so cars don't squeeze them out of the traffic lane.
4. Local jurisdictions can pass ordinances allowing bicycling on sidewalks if they have unusual circumstances where the sidewalk is safer for certain bicyclists. Be aware of and yield to children bicycling.



# SHARE & BE AWARE

PLEDGE TO MAKE OUR ROADS SAFE FOR EVERYONE



Photographer: Dave Schlabowske



**WISCONSIN  
BIKE FED**

*the Share & Be Aware campaign*

Page 8 of 9

**1**

## **STOP to let people cross the street**

The law requires motorists and bicyclists yield the right of way to pedestrians at crosswalks. People who drive and people who bike must stop for a person waiting at the curb in a crosswalk to allow them to cross.

**2**

## **WATCH for people on bikes**

Bicycles are legal vehicles under the law and are allowed to operate on nearly all Wisconsin roadways. The law also requires that motorists give **AT LEAST THREE FEET** when passing someone on a bicycle.

**3**

## **MIND the speed limit**

Speeding is dangerous. Even 5 MPH over the limit is still OVER the limit. Increased speed can mean the difference between an injury or death in a crash with a person who is walking or biking.

**4**

## **OBEY all laws and treat all other road users with courtesy and respect**

People who walk need to cross at crosswalks, not mid-block from between parked cars. People who bike and people who drive need to stop at stop signs and obey all other traffic laws. We can all help make our streets and our communities safer and more pleasant for everyone if we follow the Share and Be Aware Pledge.

Learn how **YOU** can make Wisconsin roads safer for everyone at [WisconsinBikeFed.org](http://WisconsinBikeFed.org)



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**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 8.**

**DATE:** January 17, 2018

**DEPARTMENT:** Administration

**PROVIDED BY:**

***SUBJECT:***

Discussion Regarding the Online Bike & Pedestrian Survey [Blackwood]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**CITY OF PEWAUKEE**  
**BIKE AND PEDESTRIAN PATH PLANNING COMMITTEE AGENDA ITEM 9.**

**DATE:** January 17, 2018

**DEPARTMENT:** Administration

**PROVIDED BY:**

***SUBJECT:***

Set the Date for the Next Bike & Pedestrian Planning Committee Meeting and Suggest Future Items for Discussion

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***