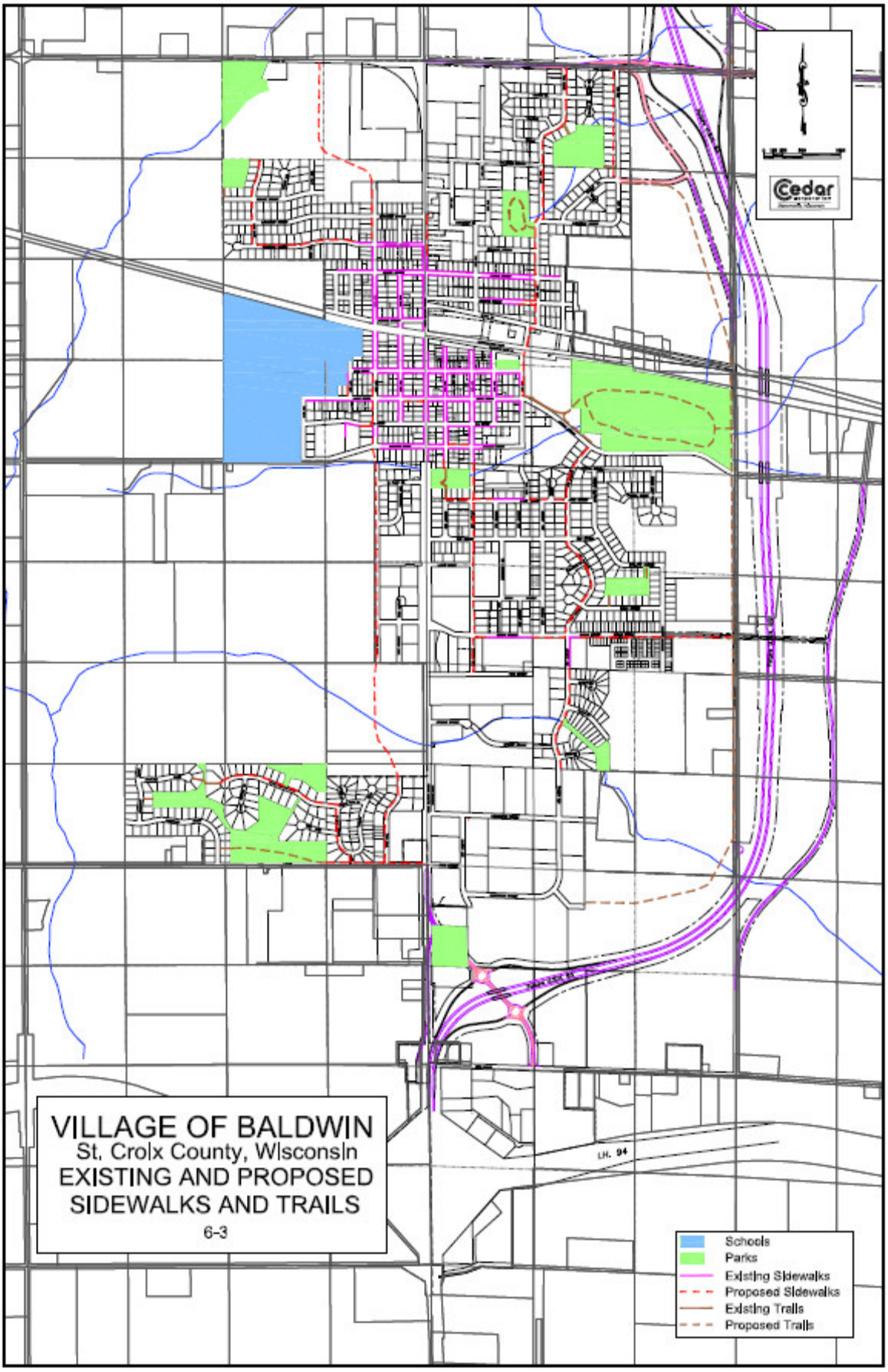
Appendix A
Bicycle and Pedestrian Facilities
Planning Advisory Committee Participants

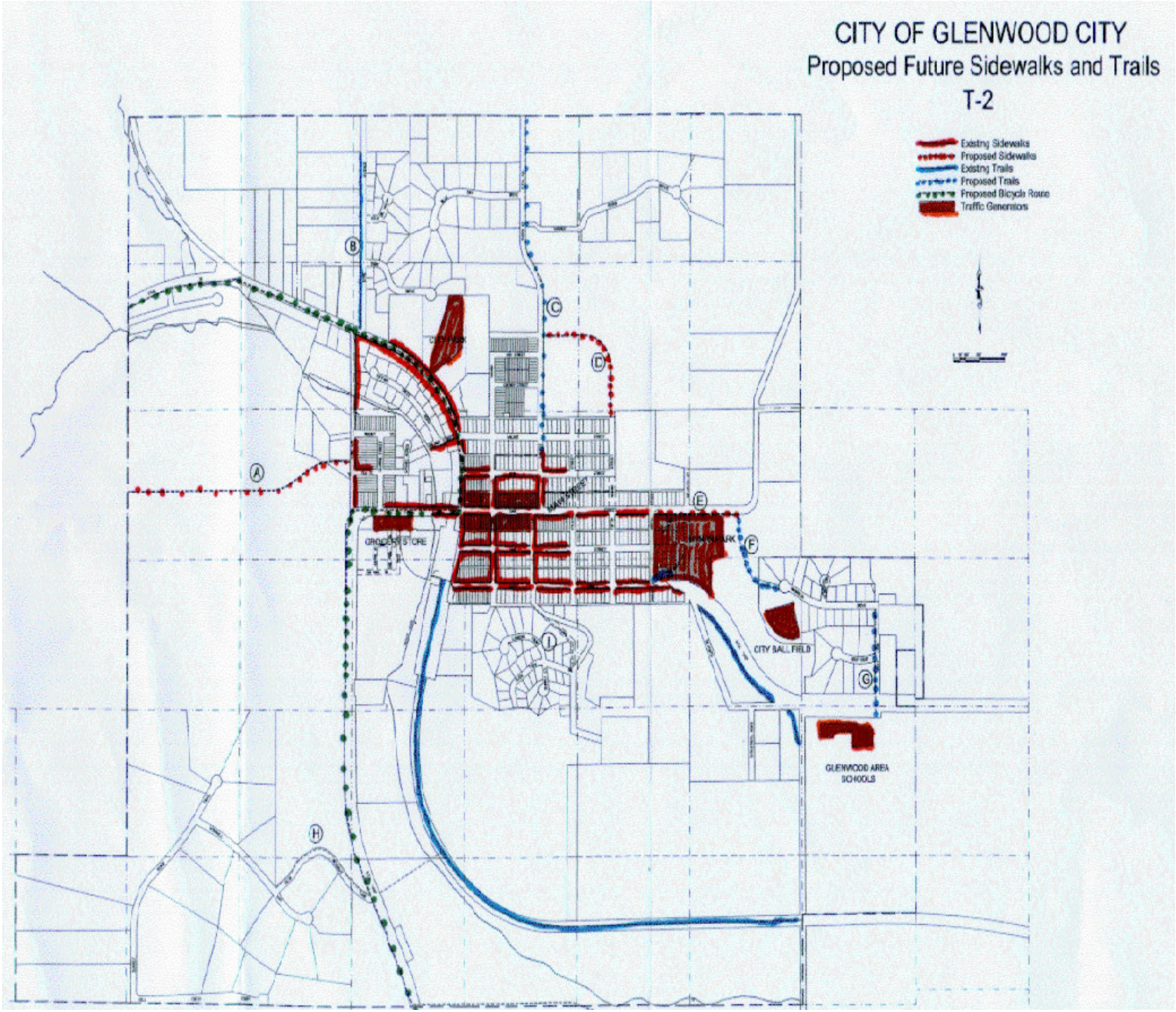
Appendix A

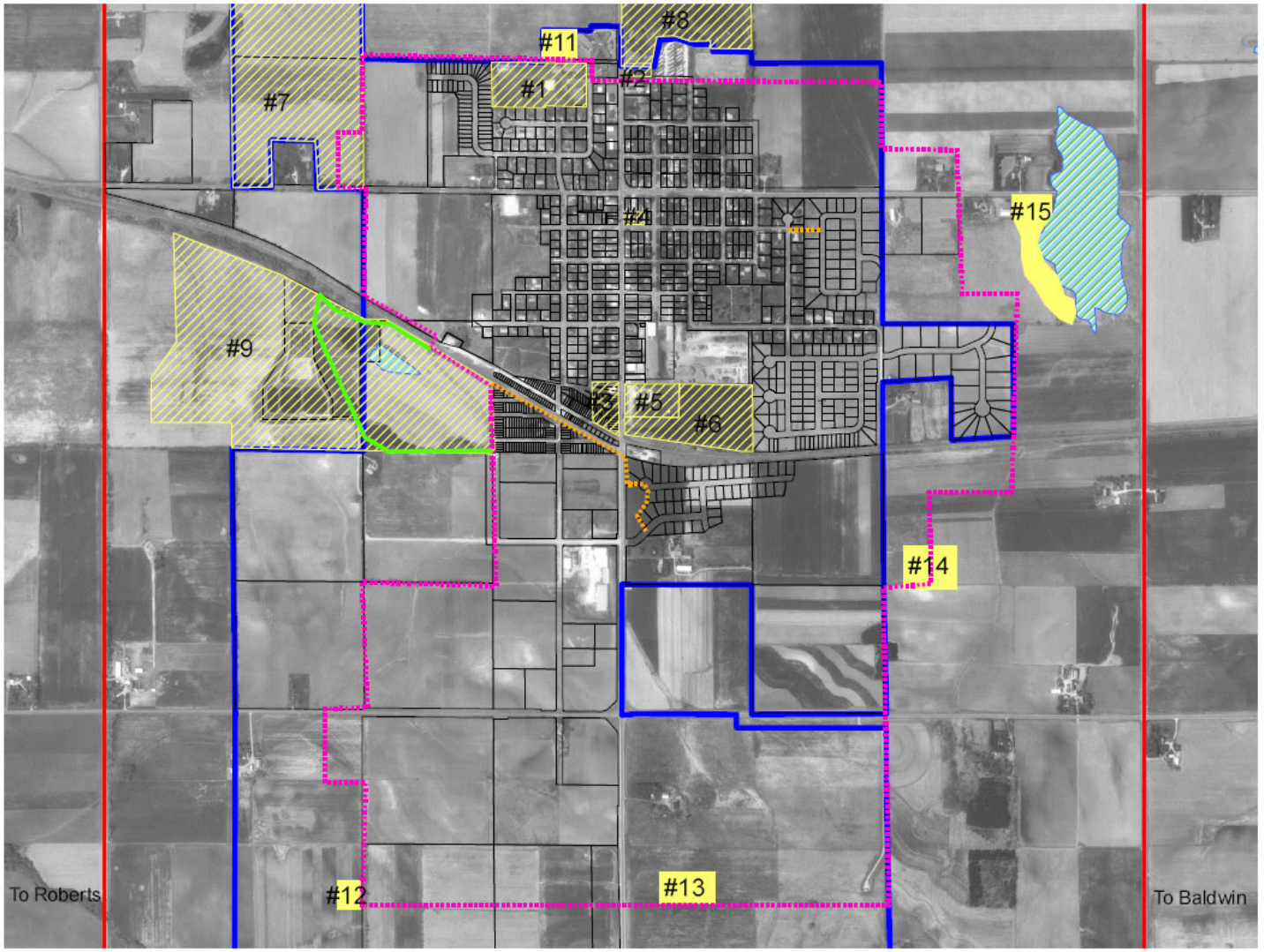
Bicycle and Pedestrian Facilities Planning Advisory Committee

Name	Representing
Deb Andrews	City of Hudson - Parks Department
Bob Baczynski	Wisconsin Department of Natural Resources
Warren Bader	Town of Richmond
Fred Ball	Town of Richmond
Patrick Beilfuss	Cedar Corportation
Jill Berke	Town of Troy
Stacy Claessens	Village of Roberts
Rick Colbeth	Town of St. Joseph
Dennis Darnold	City of Hudson - Planning Department
Mark Daun	Town of Troy
Ellen Denzer	St. Croix County Planning and Zoning Department
Art Doyle	Bicycle Shop Owner - Hudson
Jeff Durkee	St. Croix County Highway Department
Jim Eulberg	City of Hudson
Paula Frye	Town of Hudson
Virginia Gaynor	Town of Somerset
Rita Goveronski	Village of Spring Valley
Denise Gunderson	Town of Somerset
Jim Heebink	City of New Richmond
Robert Heise	St. Croix County Land, Water, and Parks Dept.
Madelyn Hoogheem	Town of Stanton
Mark Iverson	Village of Hammond
Jeff Johnson	Town of Hudson
Mike Kamm	Town of Warren
Joe Kerlin	City of New Richmond - Parks Department
Pete Kling	UW-Extension
Dave Larson	St. Croix County Parks Department
Kerry Licht	Town of Pleasant Valley
Sue Lohmeier	Village of Woodville
Chet McCarty	U.S. Fish and Wildlife Service
Erika Nelson	Town of Hudson
Milo Oppegard	Town of Kinnickinnic
Susan Overson	Village of North Hudson
Jeff Peplau	Town of Star Prairie
Tim Ramberg	St. Croix County Highway Department
Kristin Samp	Town of Glenwood
Don Schumacher	Town of Rush River
Tracey Shone	City of Glenwood City
Ryan Sicard	Village of Somerset
Tom Solum	Village of Woodville
Claire Stein	Village of Baldwin
George Stutter	Town of Warren
Roland Thompson	Village of Deer Park
Richard Volkert	Town of Richmond
Deb Walters	Village of Woodville
Terri Swanepoel	Town of Forest
Jim Webber	River Valley Trails
Marian Webber	Town of Troy

Appendix B
Local Bicycle/Pedestrian Plans


VILLAGE OF BALDWIN
St. Croix County, Wisconsin
EXISTING AND PROPOSED
SIDEWALKS AND TRAILS
6-3
Cedar
LH. 94
Schools
Parks
Existing Sidewalks
Proposed Sidewalks
Existing Trails
Proposed Trails

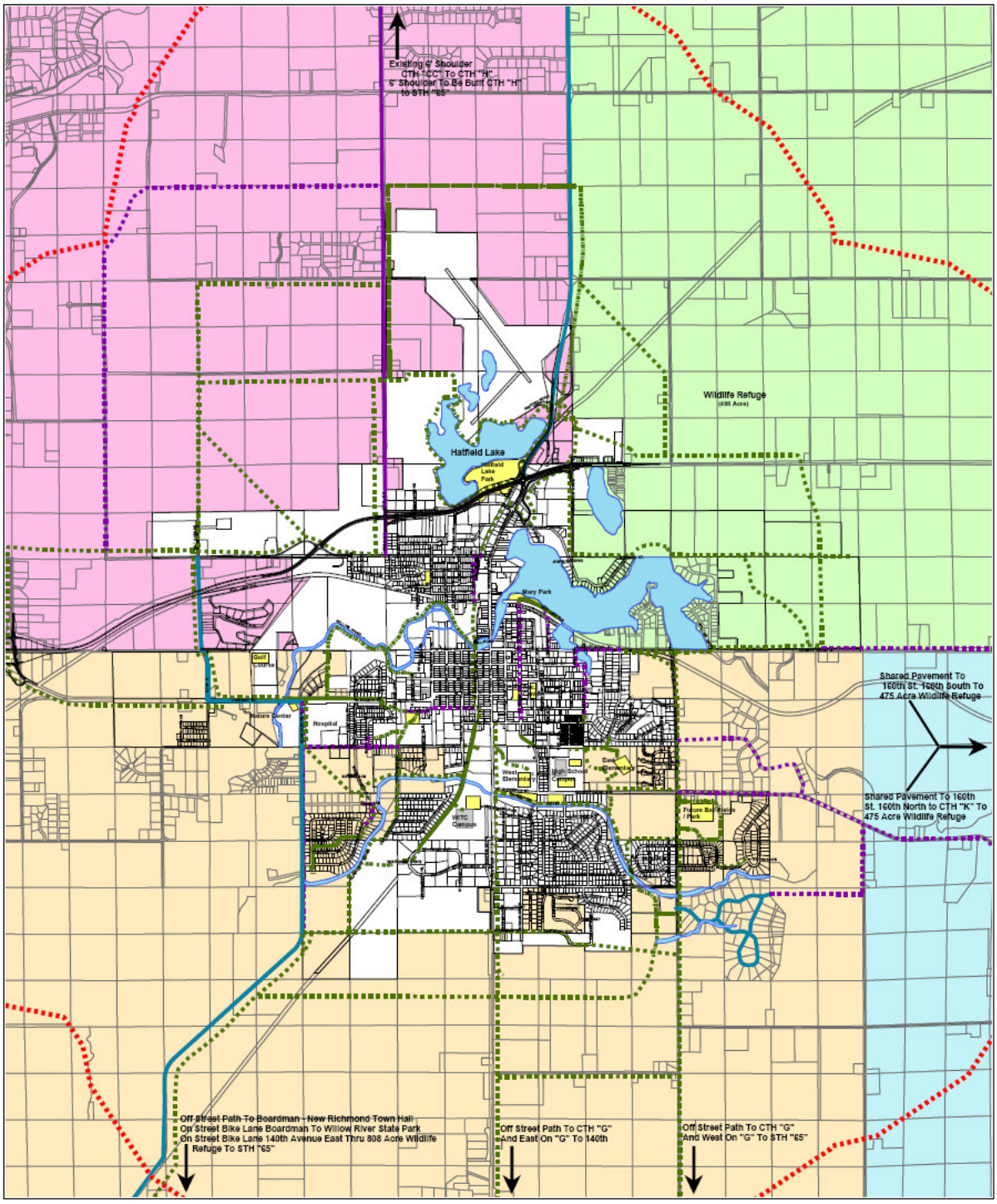

CITY OF GLENWOOD CITY
Proposed Future Sidewalks and Trails
T-2
Existing Sidewalks
Proposed Sidewalks
Existing Trails
Proposed Trails
Proposed Bicycle Route
Traffic Generators
A
B
C
D
E
F
G
H
I
GROCERY STORE
CITY BALL FIELD
GLENWOOD AREA SCHOOLS



The Village of Hammond

Hammond Trail Plan

Drawn By: MEA
Checked By: GRA
Date: July 2007



Legend

- Extra Territorial Boundary
- Town of Richmond
- Town of Stanton
- Town of Star Prairie
- Town of Erin Prairie

Multi-Modal Routes

- Off Street Path, Existing
- Off Street Path, Proposed, High Priority
- Off Street Path, Proposed, Medium Priority
- Proposed Street Bike Lane
- Existing Street Bike Lane Marked
- Existing Street Shoulder, Not Marked

Multi-Purpose Pathway Study & Comprehensive Plan

City of New Richmond, Wisconsin

August 26, 2003

N

1" = 1,250'

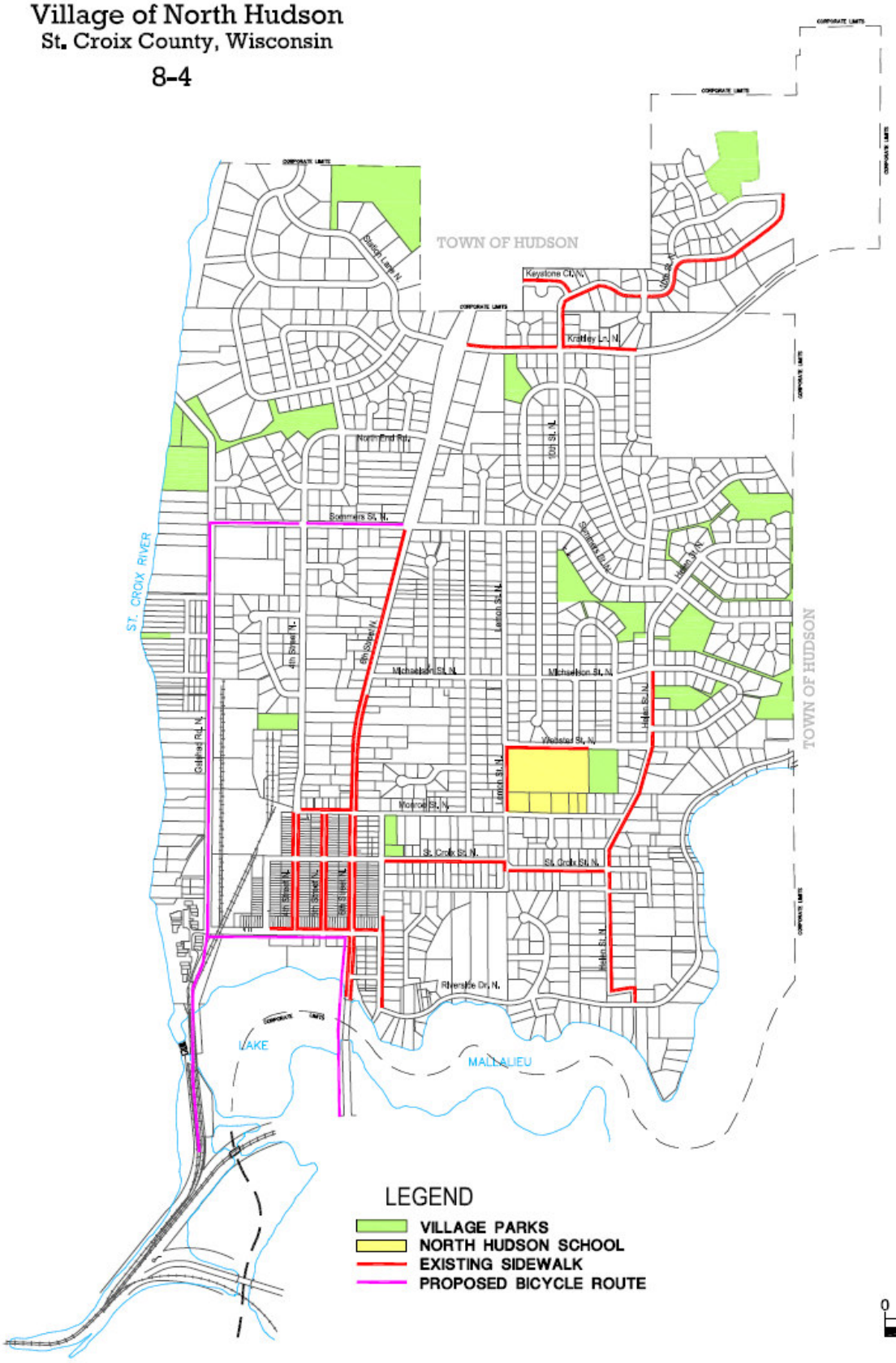
SCA Bicycle Planning Services

VIERBICHER ASSOCIATES

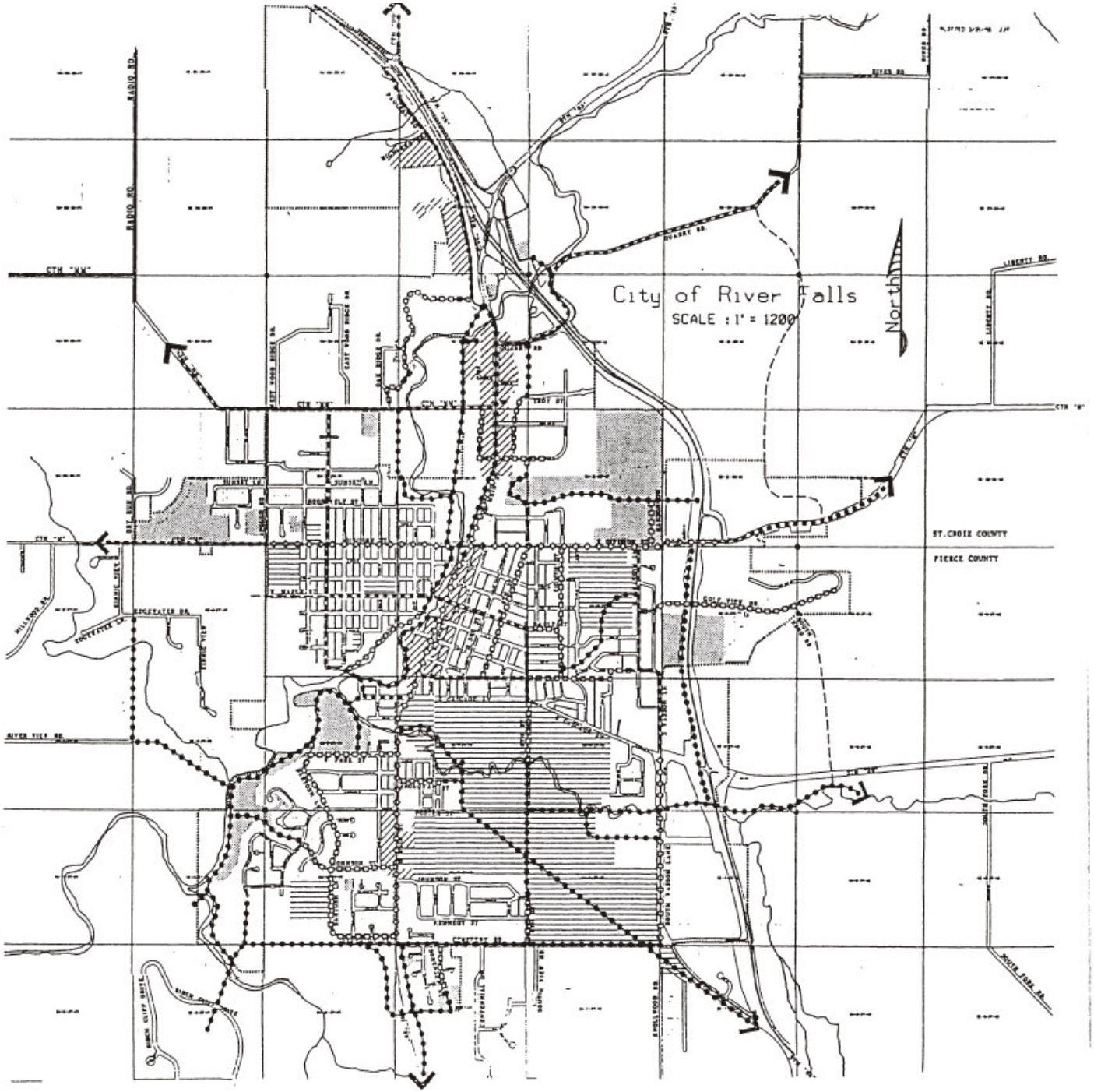
EXISTING PEDESTRIAN AND PROPOSED BICYCLE ROUTES

Village of North Hudson
St. Croix County, Wisconsin

8-4



* Locations of new sidewalks will be determined at the time of design.



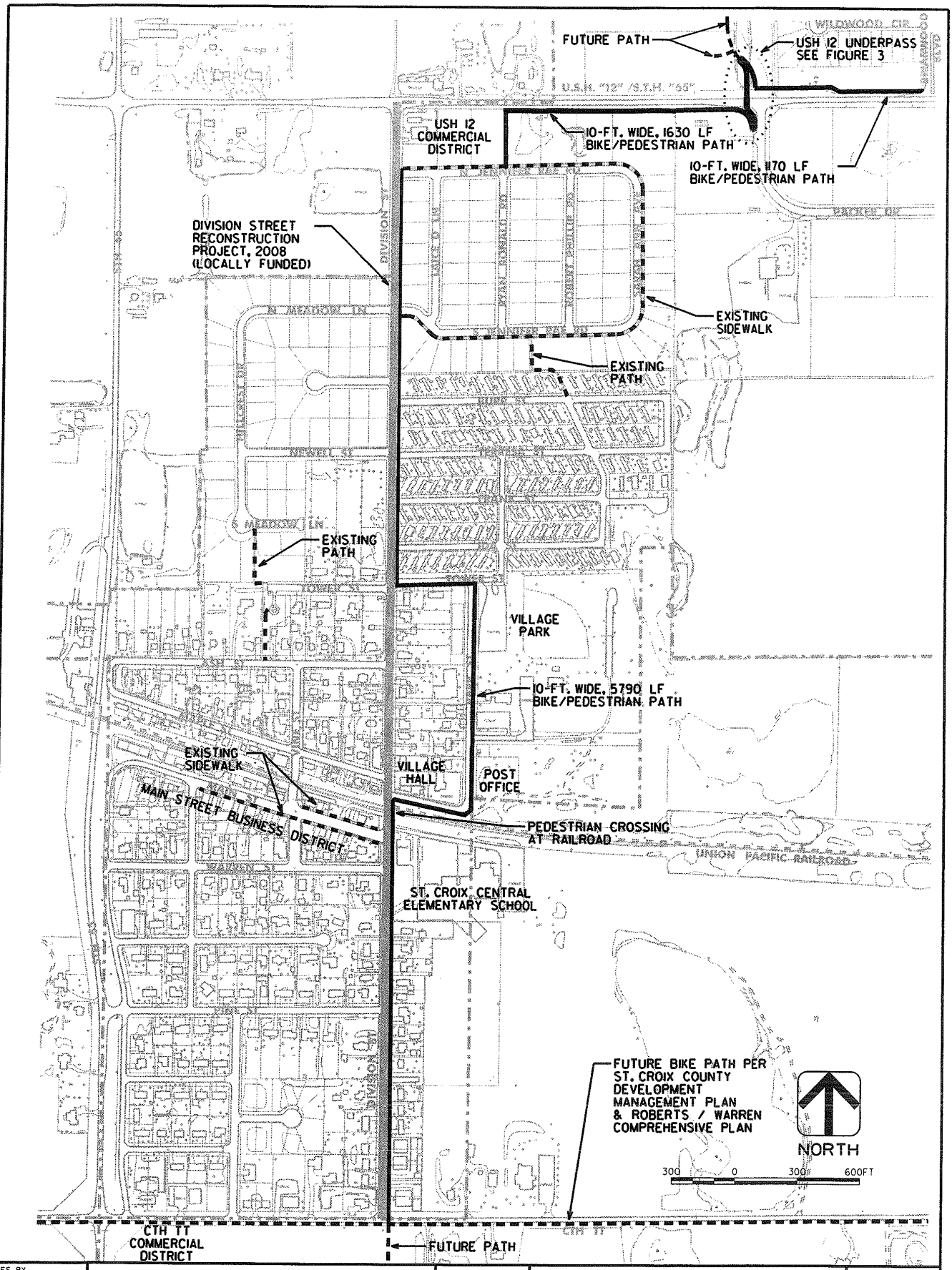
BICYCLE FACILITIES PLAN: RIVER FALLS

Key to Bicycle Facilities

- Unsuitable or Unrecommended Routes
- Suitable Existing Bicycle Paths
- Proposed Wide Curb Lanes or Paved Shoulders
- Proposed Bicycle Lanes
- Proposed Bicycle Paths
- Proposed Alternate or Future Bikeway
- Shared Roadway

Land Use Destinations

- Recreational
- Schools / University
- Commercial



03/28/2006
dd-45-50.tbl
j:\ENGIN\Roberts\0737path2.dgn

DES BY	A GOODWIN
DR BY	E ANDERS
CHK BY	
DATE	MAR 2006

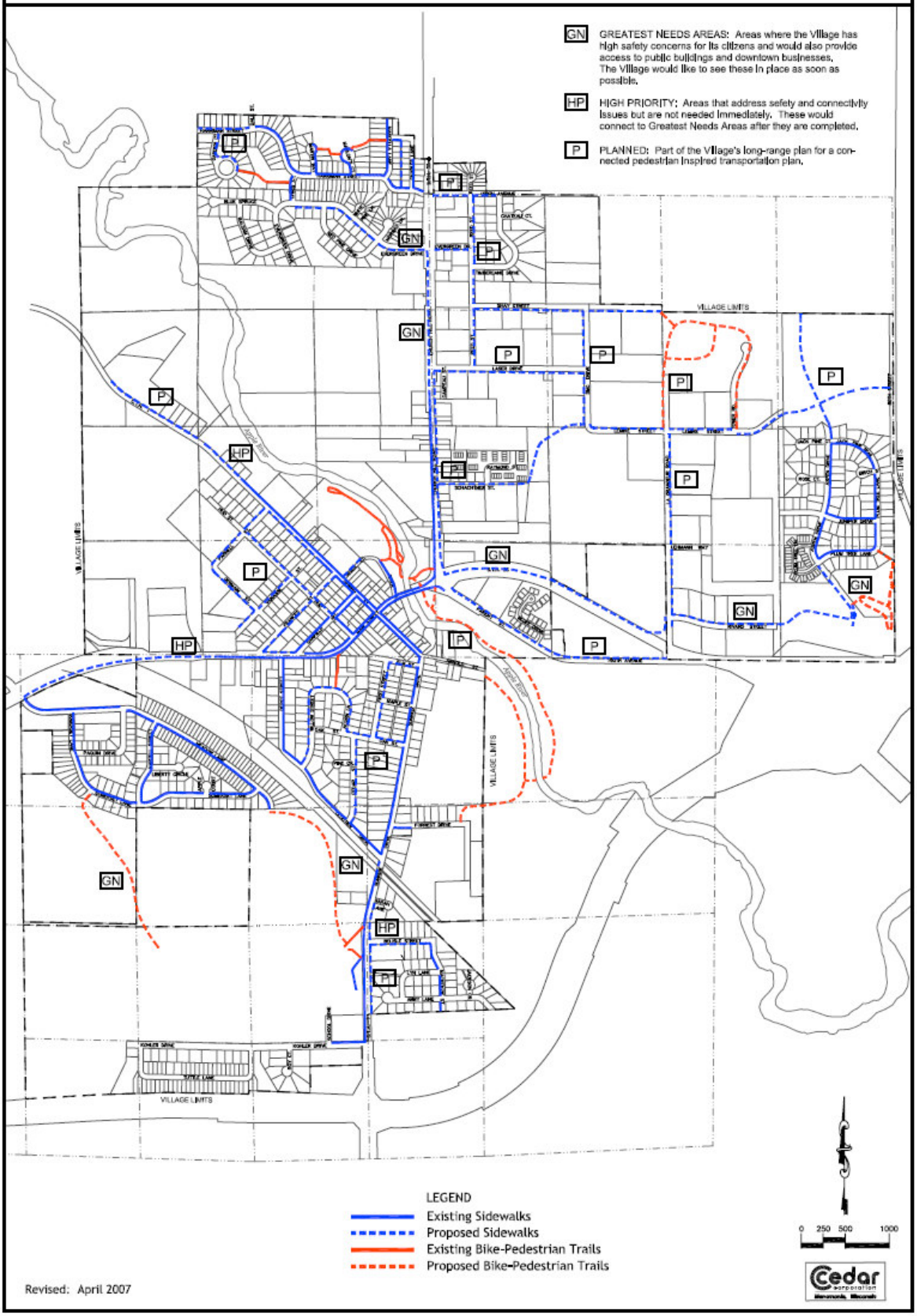
USH 12 UNDERPASS & DIVISION ST
BICYCLE & PEDESTRIAN PATH
ROBERTS, WISCONSIN

AYRES ASSOCIATES
Eau Claire, Wisconsin

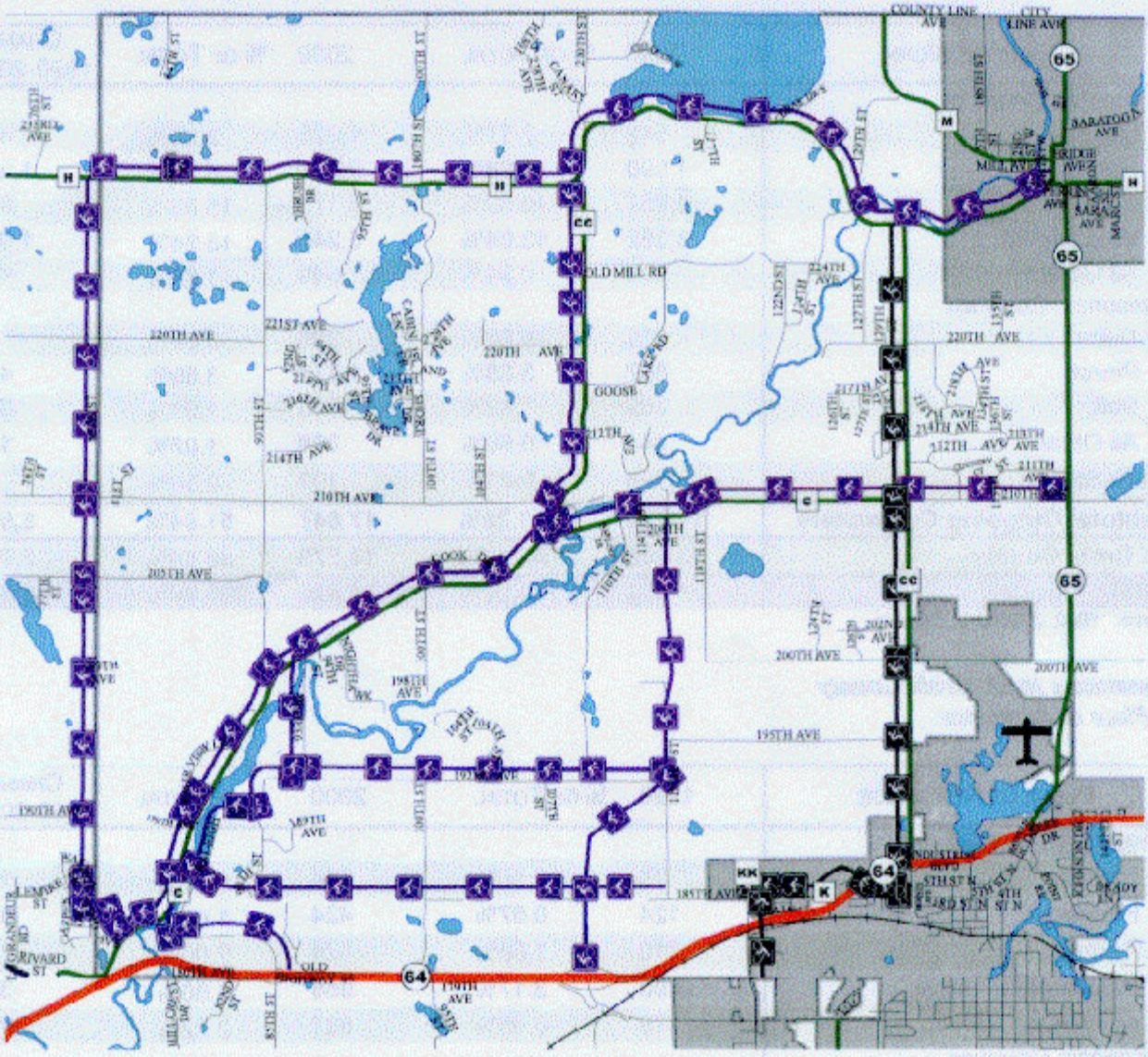
BICYCLE & PEDESTRIAN PATH

FIGURE NO.
2

PROPOSED SIDEWALKS & TRAILS
Village of Somerset



Future Bike System:
Star Prairie

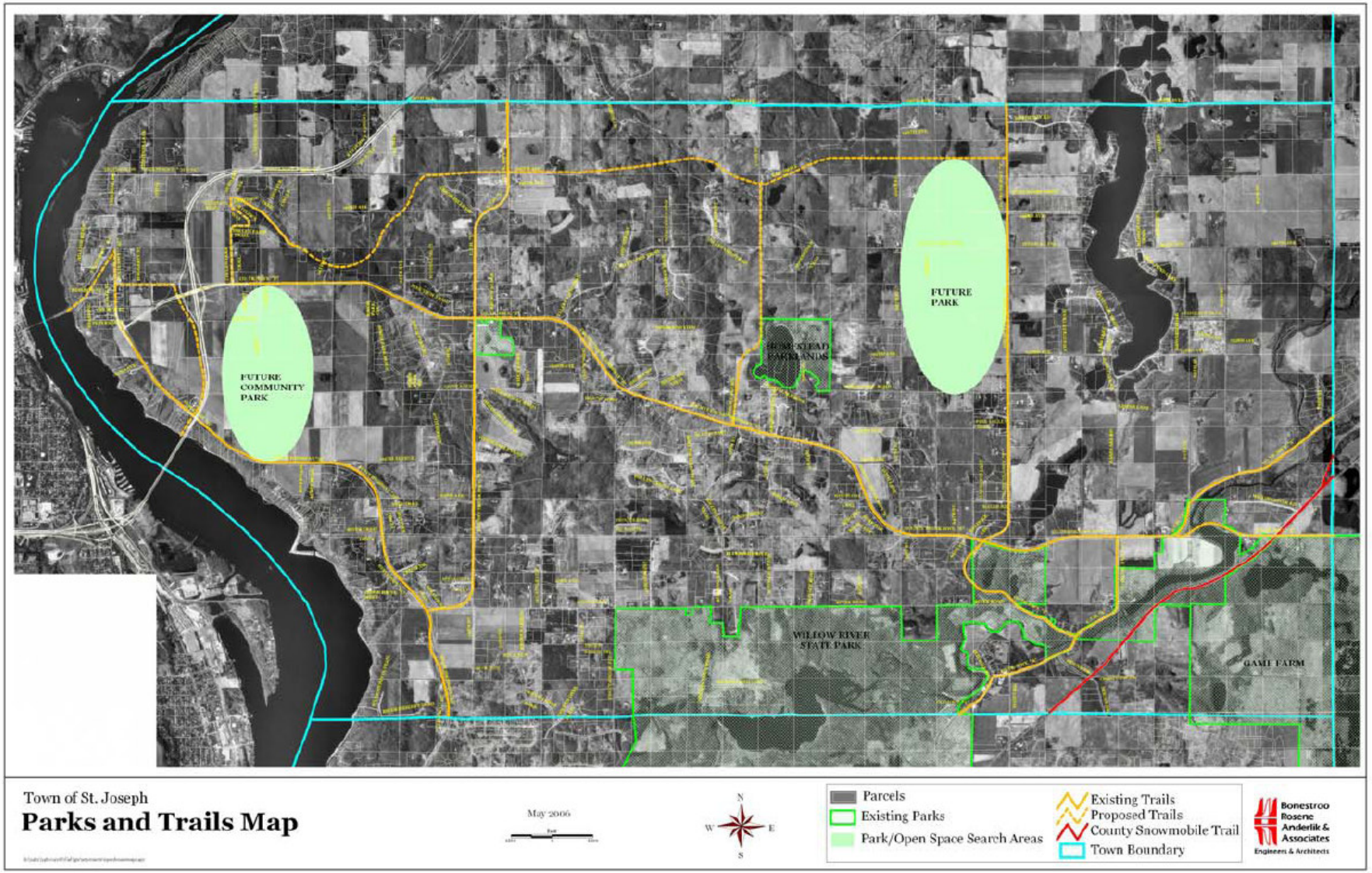


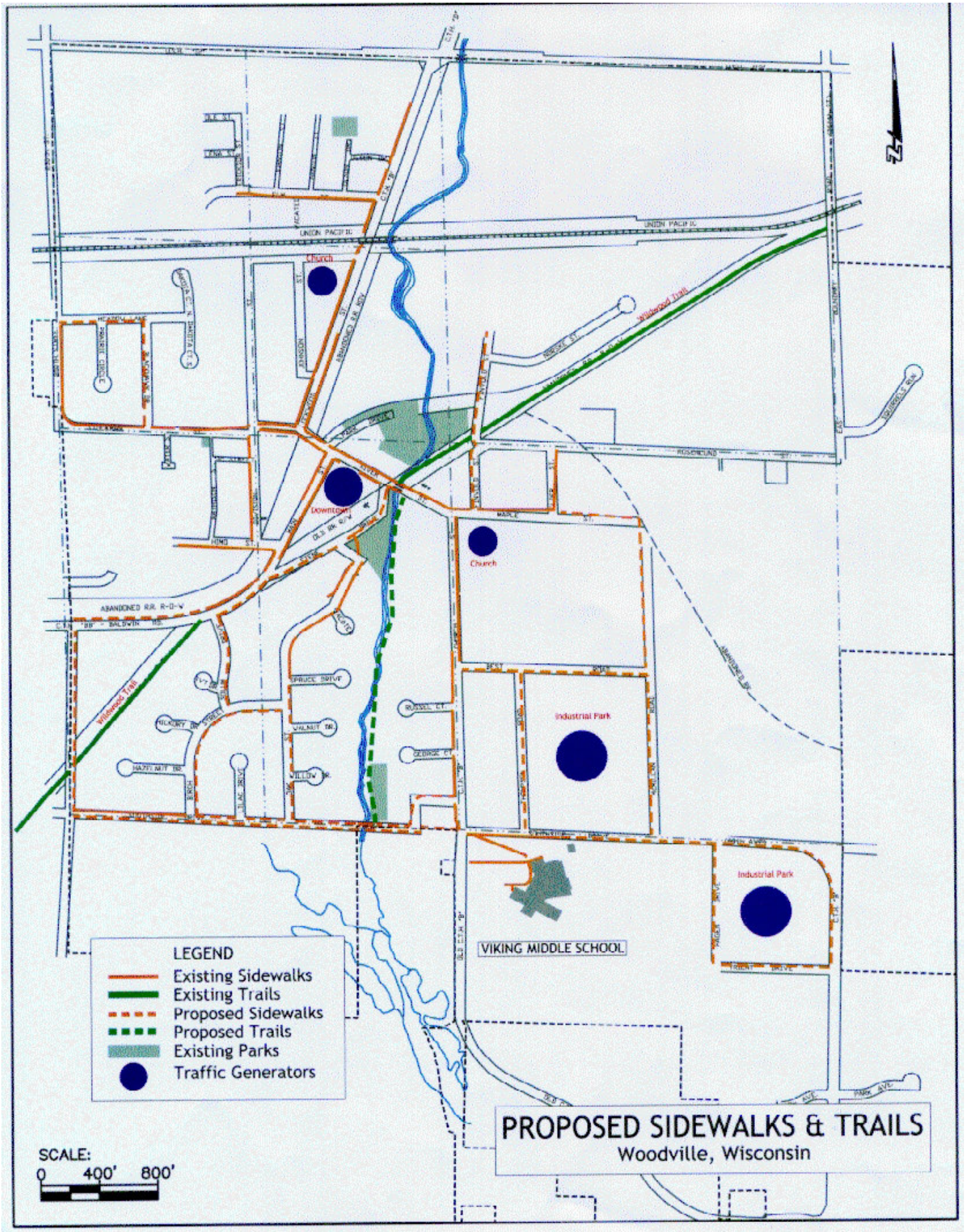
Legend

- PRINCIPAL ARTERIALS
  - INTERSTATE
  - OTHER
- MINOR ARTERIALS
- MAJOR COLLECTORS
- MINOR COLLECTORS
- LOCAL
- FUTURE OFF ROAD OR PAVED SHOULDER BIKE PATH
- RAILROAD
- BIKE ROUTE
- AIRPORT
- EXISTING 4' PAVED SHOULDER

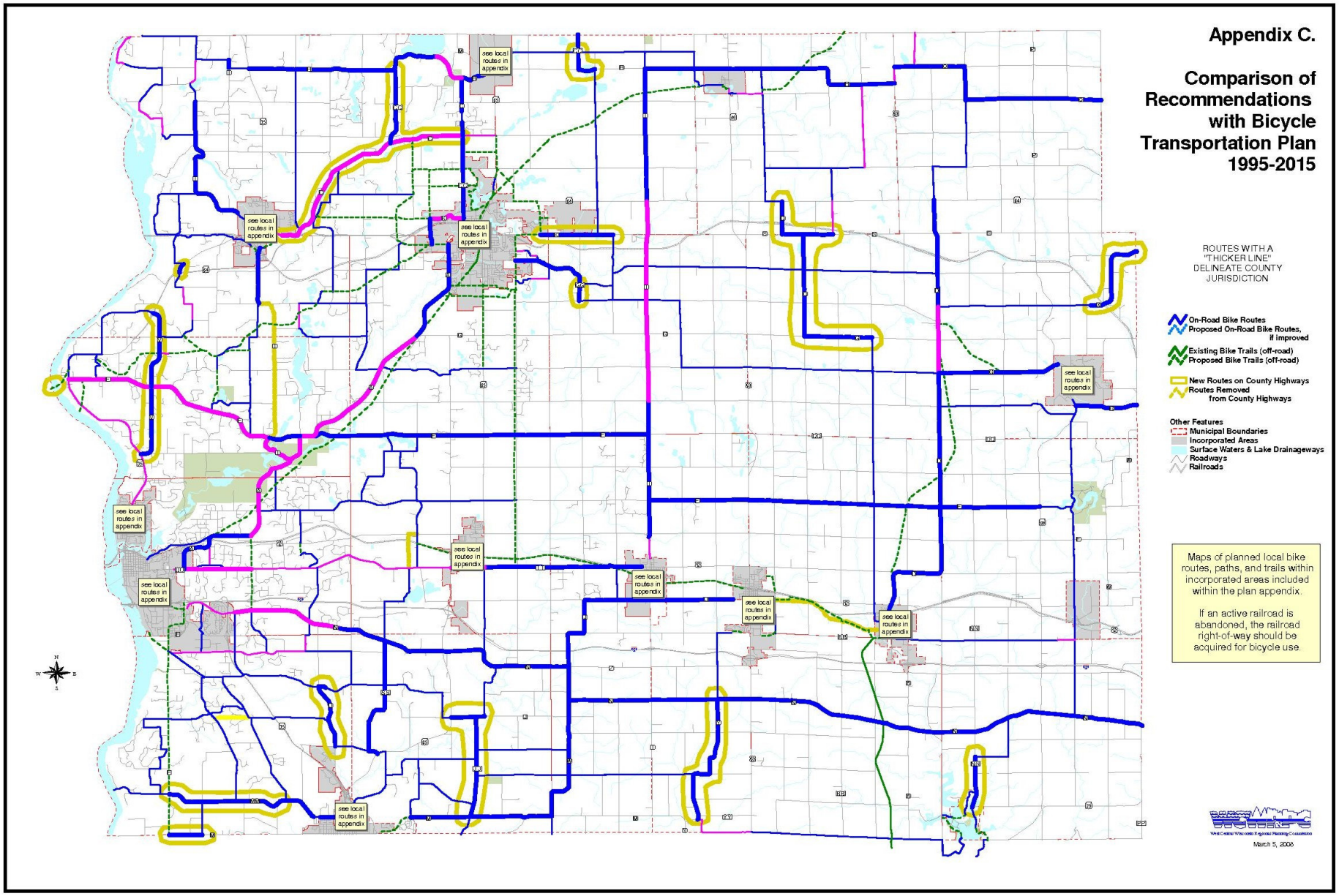
SOURCE: 1999 Functional Road Classification System, Wisconsin Department of Transportation. St. Croix County

FIGURE 6-4
Trail Transportation Plan
Town of St. Joseph
2006




LEGEND
Existing Sidewalks
Existing Trails
Proposed Sidewalks
Proposed Trails
Existing Parks
Traffic Generators
SCALE:
0 400' 800'
PROPOSED SIDEWALKS & TRAILS
Woodville, Wisconsin
VIKING MIDDLE SCHOOL
Industrial Park
Industrial Park
Church
Church
Downtown
Wildwood Trail
Wildwood Trail
UNION PACIFIC
UNION PACIFIC
ABANDONED R.R. R-O-W

Appendix C
Comparison of Recommendations with Bicycle Transportation Plan 1995-2015


Appendix C.
Comparison of Recommendations with Bicycle Transportation Plan 1995-2015
see local routes in appendix
ROUTES WITH A "THICKER LINE" DELINEATE COUNTY JURISDICTION
On-Road Bike Routes
Proposed On-Road Bike Routes, if improved
Existing Bike Trails (off-road)
Proposed Bike Trails (off-road)
New Routes on County Highways
Routes Removed from County Highways
Other Features
Municipal Boundaries
Incorporated Areas
Surface Waters & Lake Drainageways
Roadways
Railroads
Maps of planned local bike routes, paths, and trails within incorporated areas included within the plan appendix.
If an active railroad is abandoned, the railroad right-of-way should be acquired for bicycle use.
March 5, 2008

Appendix D
Bicycle Facility Definitions

Terms and Definitions

BICYCLE - A vehicle with at least two wheels having a diameter of not less than 14 inches, propelled by feet acting upon pedals. (Source: Wisconsin State Statutes.)

BICYCLE ACCOMMODATIONS - An all-inclusive class of improvements that typically enhances roadway facilities for bicycling. Accommodations include not only bikeways, but other improvements as well, such as paved shoulders and wide curb lanes.

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 Guidelines.)

BICYCLE LANE - A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists. (Source: AASHTO Bicycle Guidelines.)

BICYCLE PATH - A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way; often referred to as a trail or multi-use path.

BICYCLE ROUTE SYSTEM - A system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without specific bicycle route number. Bicycle routes should establish a continuous routing, but may be a combination of any and all types of bikeways. (Source: AASHTO Bicycle Guidelines.)

BIKEWAY - A generic term for any road, street, path, or way which in some manner is specifically designated as being available for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or to be shared with other transportation modes. (Source: AASHTO Bicycle Guidelines.)

HIGHWAY - A general term denoting a public way for purposes of travel, including the area within the right-of-way. Used primarily in reference to public ways in rural settings.

RIGHT-OF-WAY - A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes. (Source: AASHTO Bicycle Guidelines.)

ROADWAY - The portion of the highway or street, including shoulders, typically used for vehicle use. (Source: AASHTO Bicycle Guidelines.)

SHARED ROADWAY - 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: AASHTO Bicycle Guidelines.)

SIDEWALK - The portion of a highway or street right-of-way designed for preferential or exclusive use by pedestrians. (Source: AASHTO Bicycle Guidelines.)

STREET - A general term denoting a public way for purposes of travel in an urban setting.

TRAIL - A multi-use path that is physically separated from motorized vehicular traffic by open space, generally within an independent right of way, such as an abandoned rail line. Bicycling is likely to be a permitted use.

Source: *Wisconsin Bicycle Transportation Plan 2020*, Wisconsin Department of Transportation, December, 1998

Appendix E
Bicycling Suitability Rating Methodology

APPENDIX E - PLANNING FOR RURAL BICYCLE ROUTES

ROAD EVALUATION METHOD

The following evaluation method is based on the needs of the casual cyclist, typically age 16 or older with a drivers license. This method of evaluating rural roadways for shared bicycle/motor vehicle use is similar to that developed for the Wisconsin Bicycle Map. The basis for this methodology is the concept that no rural road exists which is not capable of accommodating one bicycle and one motor vehicle occupying the same lateral road section at the same time. A conflict arises, however, when a bicycle, an oncoming, and an overtaking motor vehicle arrive at the same lateral section at the same time. It is possible that paved shoulders will add sufficient width to allow a safe pass for all three vehicles without much variation of speed or deviation from lane of travel.

Of course, any safe passing encounter by any number or type of vehicles is dependent on the prudent judgment and behavior of all involved. At the same time, bicyclists are the most vulnerable of the vehicle operators and will be reluctant to use roadways with a high incidence of three vehicle passing conflicts. In addition, youth bicyclists may lack the skills and physiological development to deal with such situations. Where adequate paved shoulder width does not exist, it is in the best interests of bicyclists to select roads for a route system where the random occurrence of triple passes is minimal.

The incidence of triple pass occurrences can be calculated mathematically by using a road section's average daily traffic (ADT) *(See definitions at the end of this appendix item)*. Interestingly, as the ADT increases the incidence of triple passes progresses geometrically. This means that a road section with 5,000 ADT will have 100 times as many triple passes as a road with 500 ADT. This fact clearly favors the use of lightly traveled road sections for shared bicycle/motor vehicle use where adequate paved shoulder width does not exist.

The introduction of truck traffic into the mix creates even more stressful and potentially dangerous triple pass situations. The incidence of these occurrences can also be calculated based on the percent of the ADT which is truck traffic. Triples pass situations where a truck, a car, and a bicycle will be more common than triple passes with two trucks and a bicycle, but at very low ADT counts and at very low truck traffic percentages the potential occurrences are not significant. Wider roads tend to have higher ADT counts and higher percentages of truck traffic. Even when paved shoulders exist, the wind blast from passing trucks cause bike handling problems for youth and casual bicyclists.

Other road section characteristics also have an impact on their suitability for shared use. Seasonal and day-of-week peaking will always produce variations in ADT. This is because seasonal and daily auto volumes are often highest at the same time that bicycle travel is the highest, especially in tourism areas. Overall, autos counts could vary from around 10 percent to over 50 percent. A lack of shoulder width has the effect of narrowing the road section due to the tendency of bicycle riders to ride more towards the center of the pavement.

Hills and curves generally have negative effects on the suitability of roadways for cyclists. To degree to which these conditions have negative impacts can be measured by the percentage of solid yellow line (no passing because of restricted sight lines caused by the hill and/or curve. High percentages tend to be associated with a negative effect on a road section's suitability for shared use. However, in some situations, usually on narrow twisty roads, it has often the effect of lowering the traffic speed, moderating its impact somewhat and often reducing the incidence of triple pass occurrences.

ROAD SECTION EVALUATION

1. The first step is the evaluation process is to identify the **ADT**. The ADT thresholds developed for determining the bicycling condition of a particular road segment have been adjusted to take into consideration an increase in seasonal and weekend traffic. Roads in the following counties may need further ADT adjustments to account for additional tourist traffic:

- Adams, Bayfield, Burnett, Door, Forest, Green Lake, Lincoln, Oneida, Polk, Sauk, Sawyer, Vilas, and Washburn

To account for the increase in tourist traffic, multiply the ADT by 1.224. The result will be the ADT you want to use during the evaluation process.

2. Once you have your ADT, identify the percent of the segment that has a **SOLID YELLOW LINE**. The more solid yellow line on a road segment, the less suitable the road is for cycling due to curves and hills that limit sight lines. An adjustment to the ADT will be made based on the percent of the yellow line that is solid.

3. Identify the percent of the ADT that is **TRUCK TRAFFIC**. If the data is not available, assume 10% of the traffic is trucks.

4. The final piece of data you will need is the road section's **PAVEMENT WIDTH**. If the road section has paved shoulder(s), add the paved shoulder width(s) to the overall pavement width. For example, a 24-foot wide segment of road with a pair of 3 foot paved shoulders would have a total paved width of 30 feet.

Once you have identified the data for those 4 categories, the bicycling condition of a particular road segment can be determined using the following tables, broken down by the adjusted pavement width (including paved shoulders). It is still possible to rate roadway conditions for bicycling while knowing just *ADT* and *pavement width* by using default values or estimates for *percent yellow line* and *percent truck traffic*.

UP TO 22 FOOT WIDE ADJUSTED PAVEMENT

Time Saver: Any road section with an ADT less than 359 is considered good for cycling. Any road section with an ADT greater than 1540 is not desirable for cycling.

If the ADT falls between 359 and 1540, make an adjustment based on the percent yellow line, and use the second table to determine the rating.

%Yellow Line	ADT Adjustment
0 - 20%	*- 100*
21 – 40%	*- 25*
41 – 60%	*- 25*
61 – 80%	*+ 100*
81 % or more	*+ 400*

Truck %	Rating	ADT Threshold	Rating	ADT Threshold	Rating
Up to 10%	GOOD	*< 1050 <*	MODERATE	*< 1440 <*	POOR
11%		*< 1000 <*		*< 1380 <*	
12%		*< 970 <*		*< 1330 <*	
13%		*< 930 <*		*< 1280 <*	
14%		*< 860 <*		*< 1190 <*	
15%		*< 759 <*		*< 1043 <*	

23 TO 24 FOOT WIDE ADJUSTED PAVEMENT

Time Saver: Any road section with an ADT greater than 1860 is not desirable for cycling.

If the ADT falls below 1860, make an adjustment based on the percent yellow line, and use the second table to determine the rating.

%Yellow Line	ADT Adjustment
0 - 20%	0
21 – 40%	+ 100
41 – 60%	+ 200
61 – 80%	+ 400
81 % or more	+ 800

Truck %	Rating	ADT Threshold	Rating	ADT Threshold	Rating
Up to 9%	GOOD	< 1350 <	MODERATE	< 1860 <	POOR
10%		< 1215 <		< 1670 <	
11%		< 1105 <		< 1515 <	
12%		< 1015 <		< 1395 <	
13%		< 930 <		< 1280 <	
14%		< 870 <		< 1195 <	
15%		< 805 <		< 1110 <	

25 TO 26 FOOT WIDE ADJUSTED PAVEMENT

Time Saver: Any road section with an ADT greater than 2890 is not desirable for cycling.

If the ADT falls below 2890, make an adjustment based on the percent yellow line, and use the second table to determine the rating.

%Yellow Line	ADT Adjustment
0 - 20%	0
21 – 40%	+ 100
41 – 60%	+ 200
61 – 80%	+ 400
81 % or more	+ 800

Truck %	Rating	ADT Threshold	Rating	ADT Threshold	Rating
5%	GOOD	< 2105 <	MODERATE	< 2890 <	POOR
6%		< 1930 <		< 2655 <	
7%		< 1800 <		< 2475 <	
8%		< 1690 <		< 2325 <	
9%		< 1560 <		< 2145 <	
10%		< 1400 <		< 1925 <	
11%		< 1275 <		< 1755 <	
12%		< 1165 <		< 1600 <	
13%		< 1075 <		< 1480 <	
14%		< 1000 <		< 1375 <	
15%		< 940 <		< 1290 <	

27 TO 28 FOOT WIDE ADJUSTED PAVEMENT

Time Saver: Any road section with an ADT less than 345 is considered good for cycling. Any road section with an ADT greater than 3630 is not desirable for cycling.

If the ADT falls between 345 and 3630, make an adjustment based on the percent yellow line, and use the second table to determine the rating.

%Yellow Line	ADT Adjustment
0 - 20%	0
21 – 40%	+ 100
41 – 60%	+ 200
61 – 80%	+ 400
81 % or more	+ 800

Truck %	Rating	ADT Threshold	Rating	ADT Threshold	Rating
5%	GOOD	< 2640 <	MODERATE	< 3630 <	POOR
6%		< 2380 <		< 3270 <	
7%		< 2180 <		< 2995 <	
8%		< 1910 <		< 2625 <	
9%		< 1805 <		< 2485 <	
10%		< 1715 <		< 2360 <	
11%		< 1560 <		< 2145 <	
12%		< 1435 <		< 1970 <	
13%		< 1325 <		< 1820 <	
14%		< 1225 <		< 1690 <	
15%		< 1145 <		< 1575 <	

29 TO 30 FOOT WIDE ADJUSTED PAVEMENT

Time Saver: Any road section with an ADT less than 1490 is considered good for cycling. Any road section with an ADT greater than 4740 is not desirable for cycling.

If the ADT falls between 1490 and 4740, make an adjustment based on the percent yellow line, and use the second table to determine the rating.

%Yellow Line	ADT Adjustment
0 - 20%	0
21 – 40%	+ 100
41 – 60%	+ 200
61 – 80%	+ 400
81 % or more	+ 800

Truck %	Rating	ADT Threshold	Rating	ADT Threshold	Rating
Up to 9%	GOOD	< 3450 <	MODERATE	< 4740 <	POOR
10%		< 3435 <		< 4720 <	
11%		< 3125 <		< 4295 <	
12%		< 2860 <		< 3935 <	
13%		< 2640 <		< 3630 <	
14%		< 2455 <		< 3375 <	
15%		< 2290 <		< 3150 <	

31 TO 32 FOOT WIDE ADJUSTED PAVEMENT

Time Saver: Any road section with an ADT less than 2160 is considered good for cycling. Any road section with an ADT greater than 6035 is not desirable for cycling.

If the ADT falls between 2160 and 6035, make an adjustment based on the percent yellow line, and use the second table to determine the rating. A fourth rating, *"High Volume, but Wide Shoulders,"* is used for road sections with widths of 31 feet or greater. This provides some flexibility for road sections that would not be recommended for bicycles due to higher ADTs, but have wider than 3 foot paved shoulders that provide additional safety.

%Yellow Line	ADT Adjustment
0 - 20%	*0*
21 – 40%	*+ 100*
41 – 60%	*+ 200*
61 – 80%	*+ 400*
81 % or more	*+ 800*

Truck %	Rating	ADT Threshold	Rating	ADT Threshold	Rating	ADT Threshold	Rating
Up to 12%	GOOD	*< 3450 <*	MODERATE	*< 4740 <*	HIGH VOLUME BUT WIDE SHOULDERS	*< 6035 <*	POOR
13%		*< 3310 <*		*< 4550 <*		*< 5860 <*	
14%		*< 3165 <*		*< 4350 <*		*< 5680 <*	
15%		*< 2960 <*		*< 4070 <*		*< 5420 <*	

33 FOOT OR GREATER ADJUSTED PAVEMENT

Time Saver: Any road section with an ADT less than 2745 is considered good for cycling. Any road section with an ADT greater than 7325 is not desirable for cycling.

If the ADT falls between 2745 and 7325, make an adjustment based on the percent yellow line, and use the second table to determine the rating. A fourth rating, *"High Volume, but Wide Shoulders,"* is used for road sections with widths of 31 feet or greater. This provides some flexibility for road sections that would not be recommended for bicycles due to higher ADTs, but have wider than 3 foot paved shoulders that provide additional safety.

%Yellow Line	ADT Adjustment
0 - 20%	*0*
21 – 40%	*+ 100*
41 – 60%	*+ 200*
61 – 80%	*+ 400*
81 % or more	*+ 800*

Truck %	Rating	ADT Threshold	Rating	ADT Threshold	Rating	ADT Threshold	Rating
Up to 12%	GOOD	*< 4035 <*	MODERATE	*< 5545 <*	HIGH VOLUME BUT WIDE SHOULDERS	*< 7325 <*	POOR
13%		*< 3895 <*		*< 5355 <*		*< 7155 <*	
14%		*< 3750 <*		*< 5160 <*		*< 6975 <*	
15%		*< 3545 <*		*< 4875 <*		*< 6715 <*	

DEFINITIONS

ADT (Average Daily Traffic) represents the latest measure of annual average daily motor vehicle volume. The annual WisDOT book, *"Highway Traffic Volume Data"* offers a quick but not detailed reference for this data category.

PAVEMENT WIDTH is the total pavement width of the travel lanes and does include paved shoulder width.

PERCENT TRUCK ADT is the percentage of the ADT that is truck traffic (three or more axles). The PERCENT TRUCK ADT is one of the biggest factors affecting a road's suitability for bicycling. Identify generators of truck traffic such as industrial parks, factories, warehouses, areas with logging activity, and quarries that may exist along a road section. Again, local planning agencies and university extension offices are good sources for information on current and future examples. Assume that county roads with 22 foot or wider pavement widths, which connect two state roads with significant truck volumes, also have significant truck traffic. Once identified, field checking is necessary to obtain more exact figures on truck traffic.

PERCENT YELLOW LINE, actually percent solid line, indicates how much of the road section is not available for passing. The PERCENT YELLOW LINE can be roughly estimated from examining United States Geological Survey (USGS) topographical maps in the 1:100,000 to 1:24,000 scale. Road sections which vary greatly in horizontal alignment (twisty) are likely to have high percentages of yellow line as are sections which vary greatly in vertical alignment (hilly). Field checking is necessary to obtain exact figures. On narrower width local roads it is uncommon to have center lines. In this case it may be necessary to estimate the PERCENT YELLOW LINE by comparing the local road's character with that of a road where the PERCENT YELLOW LINE is known.

Appendix F
Wisconsin Statutory References

APPENDIX F- WISCONSIN BICYCLE LAWS

BICYCLE AND IN-LINE SKATE LAWS
ROAD SHARING RESPONSIBILITIES OF BICYCLISTS AND MOTORISTS, REQUIRED EQUIPMENT AND PARENTAL RESPONSIBILITY

The statutes in this material have been generated from the database of 2003-04 Wisconsin Statutes & Annotations through July 2006. Please refer to the Wisconsin Statutes for the official text.

85.07 Highway safety coordination.
(4) Bicycle rules. The department shall publish literature setting forth the state rules governing bicycles and their operation and shall distribute and make such literature available without charge to local enforcement agencies, safety organizations, and schools and to any other person upon request.

340.01 Words and phrases defined. In s. 23.33 and chs. 340 to 349 and 351, the following words and phrases have the designated meanings unless a different meaning is expressly provided or the context clearly indicates a different meaning:
(5) "Bicycle" means every vehicle propelled by the feet acting upon pedals and having wheels any 2 of which are not less than 14 inches in diameter.
(5e) "Bicycle lane" means that portion of a roadway set aside by the governing body of any city, town, village, or county for the exclusive use of bicycles, electric personal assistive mobility devices, or other modes of travel where permitted under s. 349.23 (2) (a), and so designated by appropriate signs and markings.
(5m) "Bike route" means any bicycle lane, bicycle way or highway which has been duly designated by the governing body of any city, town, village or county and which is identified by appropriate signs and markings.
(5s) "Bicycle way" means any path or sidewalk or portion thereof designated for the use of bicycles and electric personal assistive mobility devices by the governing body of any city, town, village, or county.
(24m) "In-line skates" means skates with wheels arranged singly in a tandem line rather than in pairs.
(43m) "Play vehicle": (a) Means a coaster, skate board, roller skates, sled, toboggan, unicycle or toy vehicle upon which a person may ride. (b) Does not include in-line skates.
(74) "Vehicle" means every device in, upon, or by which any person or property is or may be transported or drawn upon a highway, except railroad trains. A snowmobile or electric personal assistive mobility device shall not be considered a vehicle except for purposes made specifically applicable by statute.

346.02 Applicability of chapter. 4) Applicability to persons riding bicycles and motor bicycles. (a) Subject to the special provisions applicable to bicycles, every person riding a bicycle upon a roadway or shoulder of a highway is granted all the rights and is subject to all the duties which this chapter grants or applies to the operator of a vehicle, except those provisions which by their express terms apply only to motor vehicles or which by their very nature would have no application to bicycles. For purposes of this chapter, provisions, which apply to bicycles, also apply to motor bicycles, except as otherwise expressly provided. (b) Provisions which apply to the operation of bicycles in crosswalks under ss. 346.23, 346.24, 346.37 (1) (a) 2., (c) and (d) 2. And 346.38 do not apply to motor bicycles.

346.075 Overtaking and passing bicycles, electric personal assistive mobility devices, and motor buses.
(1) The operator of a motor vehicle overtaking a bicycle or electric personal assistive mobility device proceeding in the same direction shall exercise due care, leaving a safe distance, but in no case less than 3 feet clearance when passing the bicycle or electric personal assistive mobility device, and shall maintain clearance until safely past the overtaken bicycle or electric personal assistive mobility device.

346.16 Use of controlled-access highways, expressways and freeways. (1) No person shall drive a vehicle onto or from a controlled-access highway, expressway or freeway except through an opening provided for that purpose. **(2)** (a) Except as provided in par. (b), no pedestrian or person riding a bicycle or other nonmotorized vehicle and no person operating a moped or motor bicycle may go upon any expressway or freeway when official signs have been erected prohibiting such person from using the expressway or freeway.
(am) Notwithstanding s. 349.105 and except as provided in par. (b), no person riding an electric personal assistive mobility device may go upon any expressway or freeway when official signs have been erected prohibiting persons specified in par. (a) from using the expressway or freeway.
(b) A pedestrian or other person under par. (a) or (am) may go upon a portion of a hiking trail, cross-country ski trail, bridle trail or bicycle trail incorporated into the highway right-of-way and crossing the highway if the portion of the trail is constructed under s. 84.06 (11).

346.17 Penalty for violating sections 346.04 to 346.16.
(2) Any person violating ss. 346.05, 346.07 (2) or (3), 346.072, 346.08, 346.09, 346.10 (2) to (4), 346.11, 346.13 (2) or 346.14 to 346.16 may be required to forfeit not less than $30 nor more than $300.
(4) Any person violating s. 346.075 may be required to forfeit not less than $25 nor more than $200 for the first offense and not less than $50 nor more than $500 for the 2nd or subsequent violation within 4 years.

346.23 Crossing controlled intersection or crosswalk.
(1) At an intersection or crosswalk where traffic is controlled by traffic control signals or by a traffic officer, the operator of a vehicle shall yield the right-of-way to a pedestrian, or to a person who is riding a bicycle or electric personal assistive mobility device in a manner which is consistent with the safe use of the crosswalk by pedestrians, who has started to cross the highway on a green or "Walk" signal and in all other cases pedestrians, bicyclists, and riders of electric personal assistive mobility devices shall yield the right-of-way to vehicles lawfully proceeding directly ahead on a green signal. No operator of a vehicle proceeding ahead on a green signal may begin a turn at a controlled intersection or crosswalk when a pedestrian, bicyclist, or rider of an electric personal assistive mobility device crossing in the crosswalk on a green or "Walk" signal would be endangered or interfered with in any way. The rules stated in this subsection are modified at intersections or crosswalks on divided highways or highways provided with safety zones in the manner and to the extent stated in sub. (2).
(2) At intersections or crosswalks on divided highways or highways provided with safety zones where traffic is controlled by traffic control signals or by a traffic officer, the operator of a vehicle shall yield the right-of-way to a pedestrian, bicyclist, or rider of an electric personal assistive mobility device who has started to cross the roadway either from the near curb or shoulder or from the center dividing strip or a safety zone with the green or "Walk" signal in the favor of the pedestrian, bicyclist, or rider of an electric personal assistive mobility device.

346.24 Crossing at uncontrolled intersection or crosswalk.
(1) At an intersection or crosswalk where traffic is not controlled by traffic control signals or by a traffic officer, the operator of a vehicle shall yield the right-of-way to a pedestrian, or to a person riding a bicycle or electric personal assistive mobility device in a manner which is consistent with the safe use of the crosswalk by pedestrians, who is crossing the highway within a marked or unmarked crosswalk.
(2) No pedestrian, bicyclist, or rider of an electric personal assistive mobility device shall suddenly leave a curb or other place of safety and walk, run, or ride into the path of a vehicle which is so close that it is difficult for the operator of the vehicle to yield.
(3) Whenever any vehicle is stopped at an intersection or crosswalk to permit a pedestrian, bicyclist, or rider of an electric personal assistive mobility device to cross the roadway, the operator of any other vehicle approaching from the rear shall not overtake and pass the stopped vehicle.

346.25 Crossing at place other than crosswalk. Every pedestrian, bicyclist, or rider of an electric personal assistive mobility device crossing a roadway at any point other than within a marked or unmarked crosswalk shall yield the right-of-way to all vehicles upon the roadway.

346.30 Penalty for violating sections 346.23 to 346.29.
(1)(b) 2. Any operator of a bicycle or electric personal assistive mobility device violating s. 346.23, 346.24 or 346.25 may be required to forfeit not more than $20.

346.34 Turning movements and required signals on turning and stopping. (1) Turning. (a) No person may:
1. Turn a vehicle at an intersection unless the vehicle is in proper position upon the roadway as required in s. 346.31.
2. Turn a vehicle to enter a private road or driveway unless the vehicle is in proper position on the roadway as required in s. 346.32.
3. Turn a vehicle from a direct course or move right or left upon a roadway unless and until such movement can be made with reasonable safety.
(b) In the event any other traffic may be affected by such movement, no person may so turn any vehicle without giving an appropriate signal in the manner provided in s. 346.35. When given by the operator of a vehicle other than a bicycle or electric personal assistive mobility device, such signal shall be given continuously during not less than the last 100 feet traveled by the vehicle before turning. The operator of a bicycle or electric personal assistive mobility device shall give such signal continuously during not less than the last 50 feet traveled before turning. A signal by the hand and arm need not be given continuously if the hand is needed in the control or operation of the bicycle or electric personal assistive mobility device.
2) Stopping. No person may stop or suddenly decrease the speed of a vehicle without first giving an appropriate signal in the manner provided in s. 346.35 to the operator of any vehicle immediately to the rear when there is opportunity to give such signal. This subsection does not apply to the operator of a bicycle approaching an official stop sign or traffic control signal.

346.35 Method of giving signals on turning and stopping.
Whenever a stop or turn signal is required by s. 346.34, such signal may in any event be given by a signal lamp or lamps of a type meeting the specifications set forth in s.347.15. Except as provided in s.347.15, such signals also may be given by the hand and arm in lieu of or in addition to signals by signal lamp. When given by hand and arm, such signals shall be given from the left side of the vehicle in the following manner and shall indicate as follows:
(1) Left turn—Hand and arm extended horizontally.
(2) Right turn—Hand and arm extended upward.
(3) Stop or decrease speed—Hand and arm extended downward.

346.36 Penalty for violating sections 346.31 to 346.35.
(2) Any operator of a bicycle or electric personal assistive mobility device violating ss. 346.31 to 346.35 may be required to forfeit not more than $20.

346.37 Traffic-control signal legend. (1) Whenever traffic is controlled by traffic control signals exhibiting different colored lights successively, or with arrows, the following colors shall be used and shall indicate and apply to operators of vehicles and pedestrians as follows:
(a) *Green.* 1. Vehicular traffic facing a green signal may proceed straight through or turn right or left unless a sign at such place prohibits either such turn, but vehicular traffic shall yield the right-of-way to other vehicles and to pedestrians lawfully within the intersection or an adjacent crosswalk at the time such signal is exhibited.
2. Pedestrians, and persons who are riding bicycles or electric personal assistive mobility devices in a manner which is consistent with the safe use of the crosswalk by pedestrians, facing the signal may proceed across the roadway within any marked or unmarked crosswalk.
(b) *Yellow.* When shown with or following the green, traffic facing a yellow signal shall stop before entering the intersection unless so close to it that a stop may not be made in safety.
(c) *Red.* 1. Vehicular traffic facing a red signal shall stop before entering the crosswalk on the near side of an intersection, or if none, then before entering the intersection or at such other point as may be indicated by a clearly visible sign or marking and shall remain standing until green or other signal permitting movement is shown.
2. No pedestrian, bicyclist, or rider of an electric personal assistive mobility device facing such signal shall enter the roadway unless he or she can do so safely and without interfering with any vehicular traffic.
3. Vehicular traffic facing a red signal at an intersection may, after stopping as required under subd. 1., cautiously enter the intersection to make a right turn into the nearest lawfully available lane for traffic moving to the right or to turn left from a one-way highway into the nearest lawfully available lane of a one-way highway on which vehicular traffic travels to the left. No turn may be made on a red signal if lanes of moving traffic are crossed or if a sign at the intersection prohibits a turn. In making a turn on a red signal vehicular traffic shall yield the right-of-way to pedestrians, bicyclists, and riders of electric personal assistive mobility devices lawfully within a crosswalk and to other traffic lawfully using the intersection.
4. Notwithstanding subd. 1., a motorcycle, moped, motor bicycle, or bicycle facing a red signal at an intersection may, after stopping as required under subd. 1. for not less than 45 seconds, proceed cautiously through the intersection before the signal turns green if no other vehicles are present at the intersection to actuate the signal and the operator of the motorcycle, moped, motor bicycle, or bicycle reasonably believes the signal is vehicle actuated. The operator of a motorcycle, moped, motor bicycle, or bicycle proceeding through a red signal under this subdivision shall yield the right-of-way to any vehicular traffic, pedestrian, bicyclist, or rider of an electric personal assistive mobility device proceeding through a green signal at the intersection or lawfully within a crosswalk or using the intersection. This subdivision does not affect any authorization for a bicyclist under subd. 2.
(d) *Green arrow.* 1. Vehicular traffic facing a green arrow signal may enter the intersection only to make the movement indicated by the arrow but shall yield the right-of-way to pedestrians, bicyclists, and riders of electric personal assistive mobility devices lawfully within a crosswalk and to other traffic lawfully using the intersection. When the green arrow signal indicates right or left turn traffic shall cautiously enter the intersection.
2. No pedestrian, bicyclist, or rider of electric personal assistive mobility device facing such signal shall enter the roadway unless he or she can do so safely and without interfering with any vehicular traffic.
(2) In the event an official traffic signal is erected and maintained at a place other than an intersection, the provisions of this section are applicable except as to those provisions, which by their nature can have no application. Any stop required shall be made at a sign or marking on the pavement indicating where the stop shall be made, but in the absence of any such sign or marking the stop shall be made at the signal.

346.38 Pedestrian control signals. Whenever special pedestrian control signals exhibiting the words "Walk" or "Don't Walk" are in place, such signals indicate as follows:
(1) Walk. A pedestrian, or a person riding a bicycle or electric personal assistive mobility device in a manner which is consistent with the safe use of the crossing by pedestrians, facing a "Walk" signal may proceed across the roadway or other vehicular crossing in the direction of the signal and the operators of all vehicles shall yield the right-of-way to the pedestrian, bicyclist, or electric personal assistive mobility device rider.
(2) Don't walk. No pedestrian, bicyclist, or rider of an electric personal assistive mobility device may start to cross the roadway or other vehicular crossing in the direction of a "Don't Walk" signal, but any pedestrian, bicyclist, or rider of an electric personal assistive mobility device who has partially completed crossing on the "Walk" signal may proceed to a sidewalk or safety zone while a "Don't Walk" signal is showing.

346.43 Penalty for violating sections 346.37 to 346.42. (1)(b) 2. Any operator of a bicycle or electric personal assistive mobility device violating s. 346.37, 346.38 or 346.39 may be required to forfeit not more than $20.

346.47 When vehicles using alley or nonhighway access to stop.
(1) The operator of a vehicle emerging from an alley or about to cross or enter a highway from any point of access other than another highway shall stop such vehicle immediately prior to moving on to the sidewalk or on to the sidewalk area extending across the path of such vehicle and shall yield the right-of-way to any pedestrian, bicyclist, or rider of an electric personal assistive mobility device, and upon crossing or entering the roadway shall yield the right-of-way to all vehicles approaching on such roadway.

346.49 Penalty for violating ss. 346.44 to 346.485. (1)(b) Any operator of a bicycle or electric personal assistive mobility device violating s. 346.46 (1), (2m) or (4) may be required to forfeit not more than $20.
(2m)(b) Any operator of a bicycle or electric personal assistive mobility device violating s. 346.44 may be required to forfeit not more than $40.

346.54 How to park and stop on streets.
(1) (e) For the purpose of parking, mopeds and electric personal. assistive mobility devices shall be considered bicycles. Where possible without impeding the flow of pedestrian traffic, a bicycle, moped, or electric personal assistive mobility device may be parked on a sidewalk. A bicycle, moped, or electric personal assistive mobility device may be parked in a bike rack or other similar area designated for bicycle parking

346.59 Minimum speed regulation.
(2) The operator of a vehicle moving at a speed so slow as to impede the normal and reasonable movement of traffic shall, if practicable, yield the roadway to an overtaking vehicle whenever the operator of the overtaking vehicle gives audible warning with a warning device and shall move at a reasonably increased speed or yield the roadway to overtaking vehicles when directed to do so by a traffic officer.

346.60 Penalty for violating sections 346.57 to 346.595.
(5)(a) Any operator of a bicycle or electric personal assistive mobility device who violates s. 346.57 (duty to obey speed limits) may be required to forfeit not more than $20.
(b) Any operator of a bicycle or electric personal assistive mobility device who violates s. 346.59 (duty to obey minimum speed) may be required to forfeit not more than $10.

346.70 Duty to report accident. **(1)** Immediate notice of accident. The operator of a vehicle involved in an accident resulting in injury to or death of any person, any damage to state or other government-owned property, except a state or other government-owned vehicle, to an apparent extent of $200 or more or total damage to property owned by any one person or to a state or other government-owned vehicle to an apparent extent of $1,000 or more shall immediately by the quickest means of communication give notice of such accident to the police department, the sheriff's department or the traffic department of the county or municipality in which the accident occurred or to a state traffic patrol officer. In this subsection, "injury" means injury to a person of a physical nature resulting in death or the need of first aid or attention by a physician or surgeon, whether or not first aid or medical or surgical treatment was actually received; "total damage to property owned by one person" means the sum total cost of putting the property damaged in the condition it was before the accident, if repair thereof is practical, and if not practical, the sum total cost of replacing such property. For purposes of this subsection if any property which is damaged is held in a form of joint or multiple ownership, the property shall be considered to be owned by one person. (**NOTE**: this section does not apply to accidents involving **only** snowmobiles, all-terrain vehicles or vehicles propelled by human power or drawn by animals. See section 346.66.)

346.77 Responsibility of parent or guardian for violation of bicycle and play vehicle regulations. No parent or guardian of any child shall authorize or knowingly permit such child to violate any of the provisions of ss.346.68 to 346.804 and 347.489.

346.78 Play vehicles not to be used on roadway. No person riding upon any play vehicle may attach the same or himself or herself to any vehicle upon a roadway or go upon any roadway except while crossing a roadway at a crosswalk.

346.79 Special rules applicable to bicycles. Whenever a bicycle is operated upon a highway, bicycle lane or bicycle way the following rules apply:
(1) A person propelling a bicycle shall not ride other than upon or astride a permanent and regular seat attached thereto.
(2) (a) Except as provided in par. (b), no bicycle may be used to carry or transport more persons at one time than the number for which it is designed.
(b) In addition to the operator, a bicycle otherwise designed to carry only the operator may be used to carry or transport a child seated in an auxiliary child's seat or trailer designed for attachment to a bicycle if the seat or trailer is securely attached to the bicycle according to the directions of the manufacturer of the seat or trailer.
3) No person operating a bicycle shall carry any package, bundle or article which prevents the operator from keeping at least one hand upon the handlebars.
4) No person riding a bicycle shall attach himself or herself or his or her bicycle to any vehicle upon a roadway.
5) No person may ride a moped or motor bicycle with the power unit in operation upon a bicycle way.

346.80 Riding bicycle or electric personal assistive mobility device on roadway.
(1) In this section, "substandard width lane" means a lane that is too narrow for a bicycle or electric personal assistive mobility device and a motor vehicle to travel safely side by side within the lane.
(2)(a) Any person operating a bicycle or electric personal assistive mobility device upon a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall ride as close as practicable to the right-hand edge or curb of the unobstructed traveled roadway, including operators who are riding 2 or more abreast where permitted under sub. (3), except:
1. When overtaking and passing another vehicle proceeding in the same direction.
2. When preparing for a left turn at an intersection or into a private road or driveway.
3. When reasonably necessary to avoid unsafe conditions, including fixed or moving objects, parked or moving vehicles, pedestrians, animals, surface hazards or substandard width lanes that make it unsafe to ride along the right-hand edge or curb.
(b) Notwithstanding par. (a), any person operating a bicycle or electric personal assistive mobility device upon a one-way highway having 2 or more lanes available for traffic may ride as near the left-hand edge or curb of the roadway as practicable.
(c) Any person operating a bicycle or electric personal assistive mobility device upon a roadway shall exercise due care when passing a standing or parked vehicle or a vehicle proceeding in the same direction, allowing a minimum of 3 feet between the bicycle or electric personal assistive mobility device and the vehicle, and shall give an audible signal when passing a bicycle or electric personal assistive mobility device rider proceeding in the same direction.
(3)(a) Persons riding bicycles or electric personal assistive mobility devices upon a roadway may ride 2 abreast if such operation does not impede the normal and reasonable movement of traffic. Bicycle or electric personal assistive mobility device operators riding 2 abreast on a 2-lane or more roadway shall ride within a single lane.
(b) Persons riding bicycles upon a roadway may not ride more than 2 abreast except upon any path, trail, lane or other way set aside for the exclusive use of bicycles and electric personal assistive mobility devices.
(4) No person may operate a bicycle, electric personal assistive mobility device, or moped upon a roadway where a sign is erected indicating that bicycle, electric personal assistive mobility device, or moped riding is prohibited.
(5) Except as provided in ss.346.23, 346.24, 346.37, and 346.38, every rider of a bicycle or electric personal assistive mobility device shall, upon entering on a highway, yield the right-of-way to motor vehicles.

346.803 Riding bicycle or electric personal assistive mobility device on bicycle way.
(1) Every person operating a bicycle or electric personal assistive mobility device upon a bicycle way shall:
(a) Exercise due care and give an audible signal when passing a bicycle or electric personal assistive mobility device rider or a pedestrian proceeding in the same direction.
(b) Obey each traffic signal or sign facing a roadway which runs parallel and adjacent to a bicycle way.
(2) Every person operating a bicycle or electric personal assistive mobility device upon a bicycle way open to 2-way traffic shall ride on the right side of the bicycle way.
(3) Every operator of a bicycle or electric personal assistive mobility device entering a bicycle way shall yield the right-of-way to all bicycles and pedestrians in the bicycle way.

346.804 Riding bicycle on sidewalk. When local authorities under s.346.94 (1) permit bicycles on the sidewalk, every person operating a bicycle upon a sidewalk shall yield the right-of-way to any pedestrian and shall exercise due care and give an audible signal when passing a bicycle or electric personal assistive mobility device rider or a pedestrian proceeding in the same direction.

346.82 Penalty for violating sections 346.77 to 346.805. **(1)** Any person violating ss.346.77, 346.79 (1) to (3), or 346.80 to 346.805 may be required to forfeit not more than $20.

(2) Any person violating s. 346.78 or 346.79 (4) may be required to forfeit not less than $10 nor more than $20 for the first offense and not less than $25 nor more than $50 for the 2nd or subsequent conviction within a year.

346.94 Miscellaneous prohibited acts. (1) Driving on sidewalk. The operator of a vehicle shall not drive upon any sidewalk area except at a permanent or temporarily established driveway unless permitted to do so by the local authorities.
11) Towing sleds, etc. No person shall operate any vehicle or combination of vehicles upon a highway when such vehicle or combination of vehicles is towing any toboggan, sled, skis, bicycle, skates or toy vehicle bearing any person.
(12) Driving on bicycle lane or bicycle way. No operator of a motor vehicle may drive upon a bicycle lane or bicycle way except to enter a driveway, to merge into a bicycle lane before turning at an intersection, or to enter or leave a parking space located adjacent to the bicycle lane or bicycle way. Persons operating a motor vehicle upon a bicycle lane or bicycle way shall yield the right-of-way to all bicycles and electric personal assistive mobility devices within the bicycle lane or bicycle way.
17) In-line skates on roadway. (a) A person riding upon in-line skates may go upon any roadway under the jurisdiction of a local authority, subject to any restrictions specified by municipal ordinance enacted under s. 349.235.
(b) Any person riding upon in-line skates upon any roadway shall ride in a careful and prudent manner and with due regard under the circumstances for the safety of all persons using the roadway.
(c) Notwithstanding any other provision of this subsection or s. 349.235, no person riding upon in-line skates may attach the in-line skates or himself or herself to any vehicle upon a roadway or, except while crossing a roadway at a crosswalk, go upon any roadway under the jurisdiction of the department.

346.95 Penalty for violating sections 346.87 to 346.94.
(1) Any person violating s. 346.87, 346.88, 346.89 (2), 346.90 to 346.92 or 346.94 (1), (9), (10), (11), (12), or (15) may be required to forfeit not less than $20 nor more than $40 for the first offense and not less than $50 nor more than $100 for the 2nd or subsequent conviction within a year.
(6) Any person violating s. 346.94 (17) or (18) may be required to forfeit not less than $10 nor more than $20 for the first offense and not less than $25 nor more than $50 for the 2nd or subsequent conviction within a year.

347.489 Lamps and other equipment on bicycles, motor bicycles, and electric personal assistive mobility devices. (1) No person may operate a bicycle, motor bicycle, or electric personal assistive mobility device upon a highway, sidewalk, bicycle lane, or bicycle way during hours of darkness unless the bicycle, motor bicycle, or electric personal assistive mobility device is equipped with or, with respect to a bicycle or motor bicycle, the operator is wearing, a lamp emitting a white light visible from a distance of at least 500 feet to the front of the bicycle, motor bicycle, or electric personal assistive mobility device. A bicycle, motor bicycle, or electric personal assistive mobility device shall also be equipped with a red reflector that has a diameter of at least 2 inches of surface area or, with respect to an electric personal assistive mobility device, that is a strip of reflective tape that has at least 2 square inches of surface area, on the rear so mounted and maintained as to be visible from all distances from 50 to 500 feet to the rear when directly in front of lawful upper beams of headlamps on a motor vehicle. A lamp emitting a red or flashing amber light visible from a distance of 500 feet to the rear may be used in addition to but not in lieu of the red reflector.
(2) No person may operate a bicycle, motor bicycle, or electric personal assistive mobility device upon a highway, bicycle lane, or bicycle way unless it is equipped with a brake in good working condition, adequate to control the movement of and to stop the bicycle, motor bicycle, or electric personal assistive mobility device whenever necessary.
(3) No bicycle, motor bicycle, or electric personal assistive mobility device may be equipped with nor may any person riding upon a bicycle, motor bicycle, or electric personal assistive mobility device use any siren or compression whistle.

347.50 Penalties.
(5) Any person violating s. 347.489 may be required to forfeit not more than $20.

349.06 Authority to adopt traffic regulations in strict conformity with state law.
(1)(a) Except for the suspension or revocation of motor vehicle operator's licenses or except as provided in par. (b), any local authority may enact and enforce any traffic regulation which is in strict conformity with one or more provisions of chs. 341 to 348 and 350 for which the penalty for violation thereof is a forfeiture.
(2) Traffic regulations adopted by local authorities, which incorporate by reference existing or future amendments to chs. 340 to 348 or rules of the department shall be deemed to be in strict conformity and not contrary to or inconsistent with such chapters or rules. This subsection does not require local traffic regulations to incorporate state traffic laws or rules by reference in order to meet the requirements o s. 349.03 or sub. (1).

349.105 Authority to prohibit certain traffic on expressways and freeways. The authority in charge of maintenance of an expressway or freeway may, by order, ordinance or resolution, prohibit the use of such expressway or freeway by pedestrians, persons riding bicycles or other nonmotorized traffic or by persons operating mopeds or motor bicycles. The state or local authority adopting any such prohibitory regulation shall erect and maintain official signs giving notice thereof on the expressway or freeway to which such prohibition applies.

349.18 Additional traffic-control authority of counties and municipalities. 2) Any city, town or village may by ordinance enacted pursuant to s. 349.06 regulate the operation of bicycles and motor bicycles and may by ordinance require registration of any bicycle or motor bicycle owned by a resident of the city, town or village, including the payment of a registration fee.
(3) Any county, by ordinance, may require the registration of any bicycle or motor bicycle owned by a resident of the county if the bicycle or motor bicycle is not subject to registration under sub. (2). Such ordinance does not apply to any bicycle or motor bicycle subject to registration under sub. (2), even if the effective date of the ordinance under sub. 2 is later than the effective date of the county ordinance. A county may charge a fee for the registration.

349.23 Authority to designate bicycle lanes and bicycle ways. (1) The governing body of any city, town, village or county may by ordinance:
(a) Designate any roadway or portion thereof under its jurisdiction as a bicycle lane.
(b) Designate any sidewalk or portion thereof in its jurisdiction as a bicycle way.
(2) A governing body designating a sidewalk or portion thereof as a bicycle way or a highway or portion thereof as a bicycle lane under this section may:
(a) Designate the type and character of vehicles or other modes of travel which may be operated on a bicycle lane or bicycle way, provided that the operation of such vehicle or other mode of travel is not inconsistent with the safe use and enjoyment of the bicycle lane or bicycle way by bicycle traffic.
(b) Establish priority of right-of-way on the bicycle lane or bicycle way and otherwise regulate the use of the bicycle lane or bicycle way as it deems necessary. The designating governing body may, after public hearing, prohibit through traffic on any highway or portion thereof designated as a bicycle lane, except that through traffic may not be prohibited on any state highway. The designating governing body shall erect and maintain official signs giving notice of the regulations and priorities established under this paragraph, and shall mark all bicycle lanes and bicycle ways with appropriate signs.
(c) Paint lines or construct curbs or establish other physical separations to exclude the use of the bicycle lane or bicycle way by vehicles other than those specifically permitted to operate thereon.
(3) The governing body of any city, town, village or county may by ordinance prohibit the use of bicycles and motor bicycles on a roadway over which they have jurisdiction, after holding a public hearing on the proposal.

349.235 Authority to restrict use of in-line skates on roadway. (1) The governing body of any city, town, village or county may by ordinance restrict the use of in-line skates on any roadway under its jurisdiction. No ordinance may restrict any person from riding upon in-line skates while crossing a roadway at a crosswalk.
(2) The department of natural resources may promulgate rules designating roadways under its jurisdiction upon which in-line skates may be used, except that no rule may permit a person using in-line skates to attach the skates or himself or herself to any vehicle upon a roadway.

Wisconsin Department of Transportation
Bureau of Transportation Safety HS226 3/05

Appendix G
Facilities Development Manual – Bicycle Facilities

ORIGINATOR	PROCEDURE
Chief, Roadway Development Section	11-45-10

CHAPTER 11	Design
SECTION 45	Other Elements Affecting Geometric Design
SUBJECT 10	Bicycle Facilities

Introduction

The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) places increased importance on the use of the bicycle for transportation and calls on each state highway agency to encourage its use. The Department is also required by Section 85.023 of the Statutes to "...assist any regional or municipal agency or commission in the planning, promotion and development of bikeways."

The purpose of this procedure is to provide the Department's warranting criteria for bicycle facilities and guidelines for the design of bicycle facilities.

Bikeway Warrants

The Department's policy is to provide safe, convenient and adequate bicycle facilities that will encourage bicycle riding when such facilities are warranted in accordance with the following criteria:

1. The highway or street is on an officially designated bike plan or
2. The two-way bicycle traffic volume is or is expected to be 25 AADT or more during the peak three months of the bicycling season where the current annual traffic volume on the highway or street exceeds 1000 AADT.

To the extent practicable, short gaps in an otherwise continuous bike facility should be completed with highway/street improvements regardless of whether or not the above warrants are met.

Design Guidelines

There are bicycle-safe design practices that must be applied regardless of the type of improvement being developed. The most important design principle is to provide adequate width within the roadway for bicycle travel. Information about desirable widths is contained in this procedure under TYPES OF BICYCLE FACILITIES. Other bicycle-safe design factors that require attention are drainage grates, railroad crossings, and signing and striping.

Drainage Grates

Drainage grates and utility covers can be hazardous to bicyclists. The front wheel of a bicycle may drop into the openings of parallel bar drainage grates causing the bicyclists to fall off the bicycle. Likewise, grates and utility covers that are not flush with

the pavement surface and located in bicyclists' expected path can cause the bicyclists to fall.

The standard inlet covers used by WisDOT (see standard detail drawings) are considered bicycle-safe. The inlet covers which are narrow and therefore encroach the least into a bicycle curb lane are Types "A", "H", "HM", "R" and "Z". These inlet cover types should be used for new construction/reconstruction projects and also as replacement covers for 3R improvements providing they have the necessary hydraulic capacity.

Thin metal straps welded across the grate perpendicular to the direction of travel may be used as an alternative to grate replacement.

Pavement overlays should be designed and constructed to taper into drainage inlets to prevent an abrupt edge at the inlet. As an alternative, the inlet grate or utility cover can be adjusted to be flush with the new surface.

At-Grade Railroad Crossings

Where possible, a bikeway should cross railroad tracks at or near a right angle to minimize the potential for a bicyclist's front wheel becoming trapped in the flangeway and causing loss of steering control.

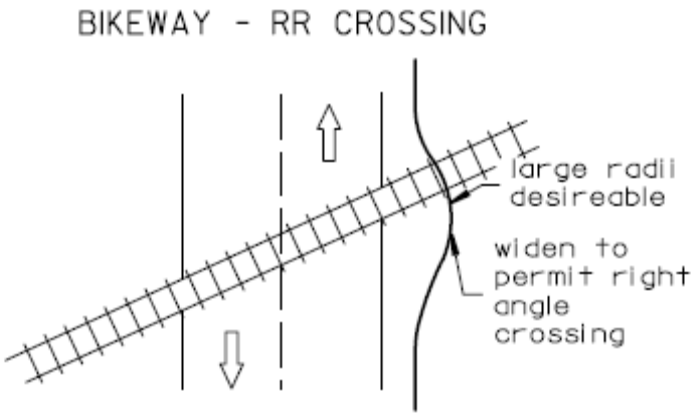


Figure 1

If the crossing angle is less than approximately 45 degrees, consider widening the outside lane, shoulder or bicycle lane to improve the angle of approach (see Figure 1).

It is also important that the roadway surface be at the same elevation as the rails. Designers should evaluate the use of rubberized railroad crossings as they offer a good combination of smoothness and traction.

Signing and Marking

Marking and signing of bikeways shall be in accordance with the Wisconsin Manual on Uniform Traffic Control Devices and applicable local ordinances.

Marking and signing requirements should be determined in consultation with the Region Traffic Engineer.

Pavement marking and signing are especially important at the approaches to intersections and at the ends of a bike lane. At intersections, bicyclists proceeding straight through and motorists turning right must cross paths. Motorists/bicyclists should be encouraged to make these crossings in advance of the intersection.

Appropriate marking and signing is essential where a bike lane ends requiring bicyclists to merge with motor vehicle traffic.

Types of Bicycle Facilities

There are many ways in which roadways can be constructed or improved to enhance bicycle transportation. Paved shoulder bikeways are commonly used on rural highways. In urban areas, a portion of the roadway can be designated as a bike lane for the preferential use of bicycles. Wide curb lanes that allow bicycle traffic to share the traffic lane may be necessary especially where improvements are made to existing urban and suburban routes. Bikeways designated to follow a freeway or other high volume rural arterial should be located as far as practicable from the roadway on a separate bike path.

Shoulder Bikeways

Table 1 provides shoulder paving requirements to accommodate bicycles on rural two-lane state trunk highways. When shoulder bikeways are provided on four-lane divided expressways the paved shoulder width should be 10 feet.

Where a bike route is planned or located on a CTH or town road, the paved width, if any, should be determined by the local government.

TABLE 1

Rural Two-Lane State Trunk Highway Paved Shoulder Width Requirements To Accommodate Bicycles

Motor Vehicle ADT	Bicycle ADT	
	0 - 24	≥25
Under 1000	0[(1)]	0[(1)]
1000 - 1250	0[(1)]	5 ft
Over 1250	Varies[(1)(2)]	5 ft [(1)]

[(1)] See Figure 5 of Procedure 11-15-1 for other shoulder paving standards not related to bicycles.

[(2)] For Great River Road only, pave shoulders 5 ft wide. See Procedure 11-15-5.

Bicycle Lanes on Curbed Streets

Bicycle lanes on curbed streets serve to separate bicycle traffic from motor vehicle traffic. On curbed streets without parking, the bicycle lane is located next to the curb. The width of the bike lane measured from the face of curb should be 5 feet when the curb is integral with the pavement (see Figure 2).

The minimum bike lane width should be 4 feet measured between a gutter/pavement longitudinal joint and the motor vehicle traffic lane where curb and gutter exists or is allowed to be constructed (see Figure 2). Bicyclists tend to shy away from longitudinal joints.

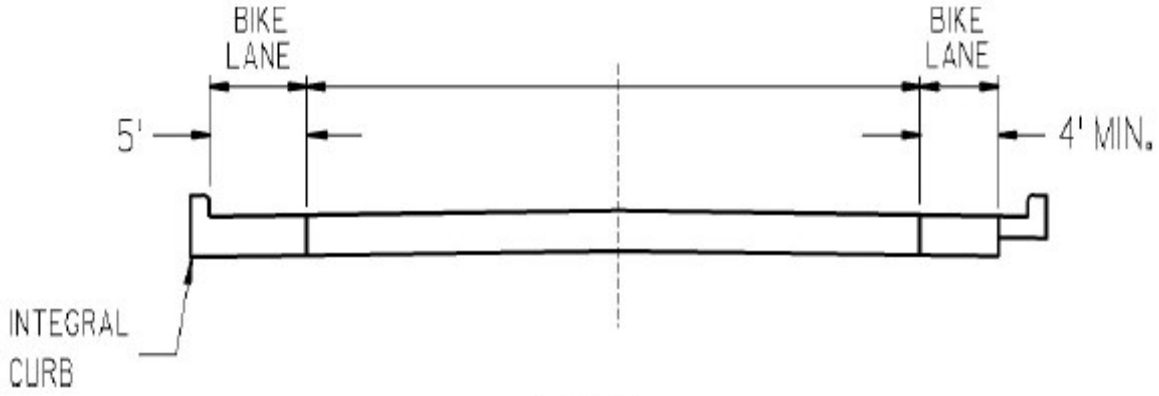


Figure 2

Where parking is permitted, the bicycle lane should always be located between the parking lane and the motor vehicle lane. The width of this combined bicycle and parking lane can vary from 14 feet to 16 feet depending on the width required for the parking lane (see Figure 3). The minimum width provided for bicycle travel should be 4 feet. A reduced total width of 13 feet may be considered where site conditions and right of way restrictions preclude a greater width and providing that the traffic lane next to the bike lane is at least 12 feet wide.

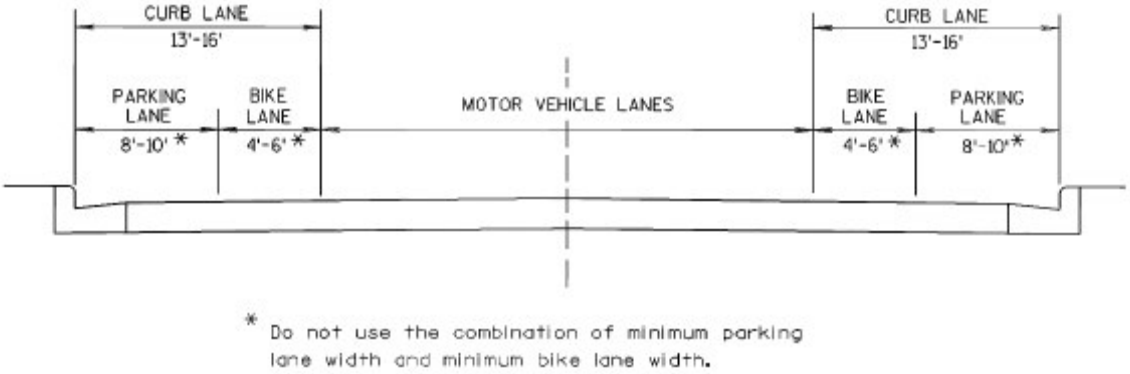


Figure 3

Additional width should be provided as necessary to provide safe bicycle operation where there is frequent parking turnover, parked vehicles are mostly commercial vehicles, or motor vehicle speeds exceed 45 mph. Bicycle lanes should always be one-way facilities and flow in the same direction as the adjacent motor vehicle traffic.

Shared Roadways

On a shared roadway facility, bicyclists and motorists share the same travel lanes. A useable lane width of at least 14 feet not including any gutter width is needed for a motor vehicle and bicycle to operate side by side. On urban roadways with 4 or more lanes, consider widening the outside lane by narrowing the inside lane, on a roadway 24-feet from centerline to flag of curb, provide a 14-foot outside lane and 10-foot inside lane) to accommodate bicyclists.

It is strongly recommended that connecting highways and STHs have a minimum curb to curb width of 36 feet when no provision is made for parking (See Procedure 11-20-1). This would provide useable lane widths of 16 feet from edge of gutter to the centerline. Shared roadways have application where physical constraints such as

buildings or environmentally sensitive areas prevent widening a street to provide bike lanes.

Adding Bike Lanes to Existing Roadways

For rural highways, bike lanes can be provided by adding or widening paved shoulders. Bike lanes can be retrofitted into existing urban roadways using one or more of the following methods:

1. Physically widening the roadway to add bike lanes.
2. Marking or remarking the pavement to add bike lanes. For example, it may be feasible to reduce the number or width of traffic lanes or remove parking to gain space for bicycle lanes. Also, on two-way streets with four lanes, remarking for a center turn lane, two travel lanes, and two bike lanes may be possible.

Bike Paths

A bicycle path is a separated bikeway facility that usually serves two-way traffic and pedestrians. Because of the variety of uses likely to occur on this facility, it is commonly referred to as a multi-use path or trail. Separation of the bike path from the highway should typically be as wide as practical to prevent operational and safety problems that may occur when two-way bike traffic operates adjacent to motor vehicle traffic.

A bike path is generally more expensive to construct and maintain than a bikeway on a roadway. In addition, a bike path may be a less direct route for a bicyclist and safety can be a concern at street intersections. Nevertheless, under some circumstances, a bike path may be the best option.

The following guidelines should be used to evaluate whether a bike path would be an appropriate choice:

1. Considerable numbers of bicyclists and pedestrians would be expected to use the facility on a daily basis.
2. The bike path would be a safer facility for travel by bicyclists and pedestrians than a bikeway on an adjacent roadway. This would usually occur where there are high traffic volumes and vehicle speeds on the adjacent roadway and the bike path would not have to cross many roadways or driveways.
3. Bicycle traffic is prohibited from using the adjacent highway because it is a freeway or for other reasons.
4. There are no reasonable alternatives for bikeways on nearby parallel routes.
5. The proposed bike path would not have at-grade crossings with major highways, streets or commercial driveways.

   Note: In general, the high cost of bike path grade separation structures make them prohibitive. See additional guidance on this subject later in this procedure.
6. The bike path would connect to an existing or planned bicycle facility (bike path or other bikeway) or street/road where bicycle travel is accommodated. In other words, the bike path would be part of a larger bicycle transportation network which provides continuity for bicycle travel. As an alternative, a shorter bike path could be warranted that would provide direct access to a park, school, business district, etc. Where the bike path will be part of a planned bicycle facility that does not yet exist, the local government should provide a written commitment to complete the facility within a reasonable time frame.
7. The bike path would be consistent with transportation plans for the area by an MPO, local or state government.

8. The local government sponsor would be willing to accept maintenance of the bike path.
9. There is a reasonable expectation that the safety and service benefits derived from the bike path would be worth the total cost of the facility to include right of way, construction, marking and signing, and maintenance.

The paved width of a two-way bike path should be a minimum of 8 feet in all situations. Ten feet is a minimum when pedestrians will be routinely sharing the path with bicyclists. Ten feet and 12 feet are desirable widths and should be used in almost all urban situations. Five feet (6 feet desirable) is the minimum for one- way bicycle travel on a bicycle path (see Figure 4).

The AASHTO "Guide for the Development of Bicycle Facilities" includes detailed information about the design and location of bike paths.

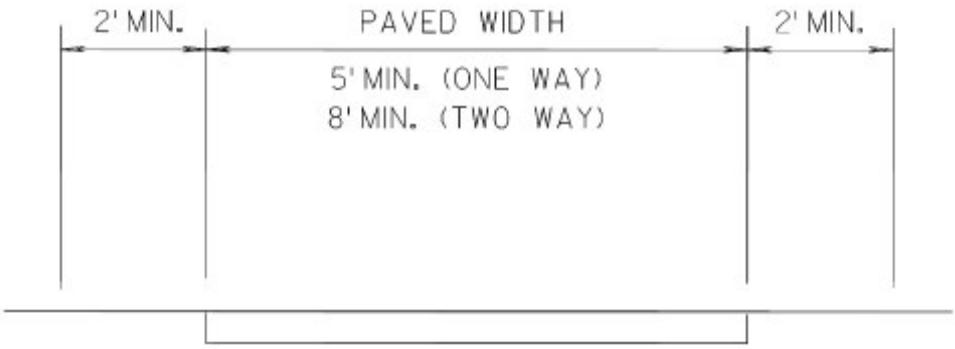


Figure 4
Bicycle Accommodation on Highway Structures

There are various means of accommodating bicyclists on highway structures (see Figure 5). Where possible, the bicycle accommodation provided or planned for in the approaches to a structure should be carried across the structure. The width of new highway structures should equal the width of the existing or planned approach roadway including bicycle lanes and sidewalks as shown in Figures 5(a) to 5(d). For the majority of situations, adequate structure width for bicycles can be provided by a wide curb lane, continuation of a paved shoulder, or a bike lane. Where traffic volumes are low, a standard width lane can usually safely accommodate both motor vehicle and bicycle traffic {see Figure 5 (a)}. Current standards for rural state highway bridge cross sections will typically provide ample shoulder width for bicycles without any further modifications {see Figure 5(c)}.

Figure 5(e) shows a two-way bike path shielded from motorized traffic by a parapet. This represents a situation where a bicycle path is routed across a bridge. Note: A bike path on a bridge will typically serve both bicyclists and pedestrians. The bike path is carried across the bridge but in many cases, it bends away from the highway roadway on an independent alignment.

In exceptional situations, it may be appropriate to continue bike lanes, wide curb lanes or shoulders across a structure in addition to a shielded bike path. This situation would arise when a structure (or the roadway under a structure) would provide continuity to a bicycle path. It is conceivable that the path may serve a different corridor than the highway. For instance, a path could follow a river corridor and use the bridge to cross to the other side to connect to a path following the same corridor. At the same

time, the bridge and the highway could be perpendicular to the river and serve an entirely different corridor.

A bridge roadway wide enough to be safely shared by both bicycle and motor vehicle traffic may be warranted in addition to a two-way bike path {Figures 5(f)} where a significant number of bicyclists would be expected to use the roadway rather than the bike path. This may occur especially for bicyclists traveling on the side opposite the bike path who would have to cross several lanes of traffic to get to and from the path and who also may have an origin or destination served by the highway corridor. Cost considerations would usually prohibit this extra bicycle accommodation on long bridges.

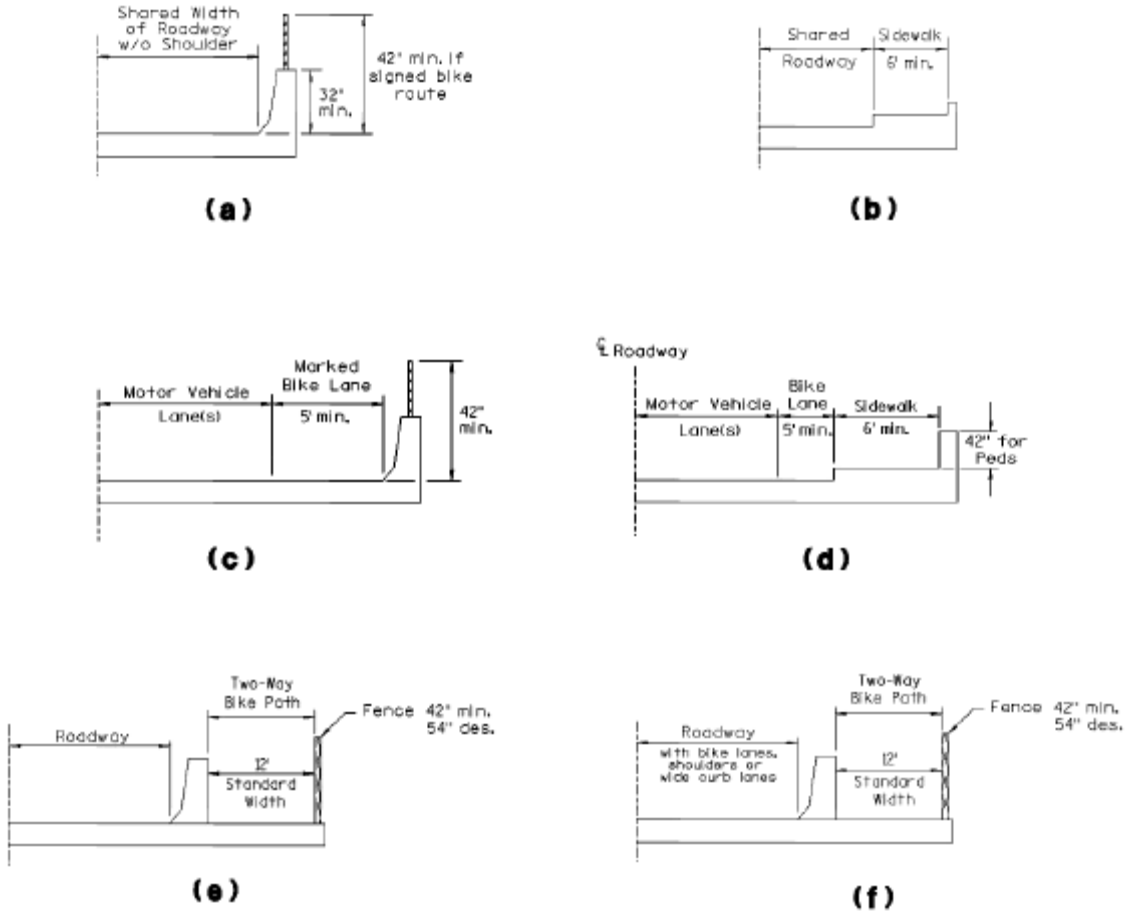


Figure 5

The minimum width of a two-way bike path on a structure is 2 feet wider than the width of the approaching two-way path. The standard width of a two-way bike path on a structure is 12 feet. A 10-foot wide path is used if an 8-foot wide path connects to and from the bridge path or bicycle and pedestrian use is expected to be very low on a high cost bridge. A width of 14 feet should be evaluated where one or more of the following conditions exist:

1. Bike and/or pedestrian traffic volumes are high or are expected to increase substantially in the future. Evaluation of this factor is especially important where the bike path is part of a designated bikeway system where future traffic growth can be expected once the system is completed.

2. The structure or its approaches have a gradient of six percent or more for more than 500 feet. Long, steep grades may cause some bicyclists to exceed the speeds at which they are competent.
3. In order to make the bike path on the structure two feet wider than the approaching path width.

Railings, fences, or parapets adjacent to a bikeway and on the edge of a structure should be a minimum of 42" high and 54" desirable. See Figures 5(a), 5(c), 5(e) and 5(f). However, this increased height is generally not warranted for parapets located between the roadway and a bike path [Figures 5(e) and 5 (f)] except possibly where the motor vehicle traffic lane is closer than 5 feet to the parapet. A tall parapet or railing should not be used where it would obstruct the required sight distance for a motorist to ramps or roadway intersections located in the approaches to the structure.

Bike Path Grade Separations

Safety concerns may require that bicycle traffic be separated by a structure from motorized traffic or, as an alternative, bicyclist actuated traffic signals may be provided where bike paths intersect high speed/high volume highways or streets.

Guidance is limited on design treatments for intersections involving paths and roadways in North America. However, a 1996 report "Trail Intersection Design Guidelines" by the University of North Carolina Highway Safety Research Center and based on both United States and European experiences, calls for consideration of grade separations or signals when the 85th percentile speed exceeds 40 mph on a four lane roadway having a traffic volume over 20,000 AADT. Grade separations of paths with two lane roadways are not recommended, but signalized intersections should be considered on two lane roadways where the traffic volume exceeds 10,000 AADT. Designers will still need to use engineering judgment to decide when such safety measures are necessary and cost effective by considering traffic volumes, motor vehicle speeds, site conditions and the age and experience of typical bicyclists. For example, the fact that children frequently use a bike path that intersects an arterial would be a strong reason to provide a grade separation structure.

References

The guidelines in this procedure are based primarily on the AASHTO "Guide for the Development of Bicycle Facilities." This document may be purchased from the American Association of State Highway and Transportation Officials, Item Code GBF-3. For the latest information on document prices and postage rates click here or call (202) 624-5800 and ask for publications. Another reference, "Part 2, Designing Sidewalks and Trails for Access" is available by contacting Region bike and pedestrian liaisons. ★

Appendix H
Facilities Development Manual–
Design Criteria for Town and County Roads
(Excerpts from Procedures 11-15-1 and 11-40-1)

Minimum Design Standards for Town Roads
(New Construction Only)

Design Class	Traffic Volume	Roadway							Structure	
	AADT Current	Roadway. Width	Surfacing Width	Minimum Shoulder Width	Horizontal Curve		% Grade		Highway Load	Clear Roadway. Width for Structures **
					Des. Max	Max	Des Max	Max		
T1	Local Service intermittent traffic	20', *22'	16', *18'	2'					H 15 *(HS 20)	24'
T2	Under 100	24'	18'	3'			9	11	H 15 *(HS 20)	24'
T3	100 - 250	26'	20'	3'			8	11	H 15 *(HS 20)	24'
T4	251 - 400	32'	22'	5'	6°	12.25°	6	8	H 20 *(HS 20	26'
T5	401 - 1000	34'	22'	6'	5°	12.25°	5	8	H 20 *(HS 20)	28'
T6	1001-2400	44'	24'	10'	4.5°	7.5°	5	7	H 20 *(HS 20)	30'
T7	Over 2400	**USE STATE TRUNK STANDARDS**								

* These design values shall be used for projects involving federal aid.

** For federal-aid funded projects with a design hourly volume greater than 400, the clear roadway width for structures shall equal the approach roadway width.

Source: Section 82.50(1) Wisconsin Statutes Except Maximum Horizontal Curve Values are from Table V-6, Page 424, GDHS

DESIGN CRITERIA FOR RECONSTRUCTION * OF TOWN ROADS[2]

TRAFFIC		DESIGN SPEED[1] (mph)	ROADWAY WIDTH DIMENSIONS		
Design Class	Current AADT		Traveled Way Width (feet)	Shoulder Width (feet)	Roadway Width (feet)
RT1	0 - 250	40 or less	**20** (18)	**3** (2)	**26** (22)
		45-50	**20**	**3** (2)	**26** (24)
		55 or greater	**22**	**3** (2)	**28** (26)
RT2	251 - 400	(40)	**22** (18)	**4** (2)	**30** (22)
		45-50	**22** (20)	**4** (2)	**30** (24)
		55 or greater	**22**	**4** (2)	**30** (26)
	401 - 750	(50)	**22**	**6**	**34**
		55 or greater	**22**	**6**	**34**
RT3	Over 750	(50)	**24** (22)	**6**	**36** (34)
		55 or greater	**24**	**6**	**36**

Desirable values are shown in bold and minimum values are shown in parentheses.

* Note: Reconstruction means total rebuilding of an existing town road to improve maintainability, safety, geometrics and traffic service. Design standards for construction of new town roads are shown on page 1 of Figure 4 of Procedure 11-15-1. To avoid confusion in the terminology used to label design classes for the two design criteria, the design classes for town road "Reconstruction" begin with the letter "R".

1 Desirable Design Speed is 5 mph greater than the posted speed. A minimum design speed equal to the posted speed limit is acceptable.

2 Source: TRANS 204, Existing Town Road Improvement Standards

DESIGN CRITERIA FOR RESURFACING AND RECONDITIONING OF TOWN ROADS[2]

TRAFFIC		DESIGN SPEED[1] (mph)	ROADWAY WIDTH DIMENSIONS		
Design Class	Current AADT		Traveled Way Width (feet)	Shoulder Width (feet)	Roadway Width (feet)
TR1	0-250	**Less Than 50**	**18**	**2**	**22**
		50 or greater	**20**	**2**	**24**
TR2	251-400	**Less Than 50** (40)	**20** (18)	**2**	**24** (22)
		50 or greater	**20**	**2**	**24**
TR3	401-750	**50 or greater**	**22** (20)	**2**	**26** (24)
TR4	Over 750	**50 or greater**	**22**	**4** (3)	**30** (28)

Desirable values are shown in bold and minimum values are shown in parentheses.

Use minimum values only when desirable values are not practical or feasible to provide on the project. Don't use a value less than existing. Justification for the use of minimum values shall be documented and approved through the Design Study Report. The use of any values outside this table require approval through the exception to standards process.

[1] Desirable Design Speed is 5 mph greater than the posted speed. A minimum design speed equal to the posted speed limit is acceptable.

[2] Source: TRANS 204, Existing Town Road Improvement Standards

Design Criteria For County Trunk Highway Functionally Classified as Arterials

TRAFFIC VOLUME		ROADWAY				BRIDGES[2]	
Design Class	Design AADT	Design Speed	Traveled Way Width	Shoulder Width	Roadway Width	Minimum Design Loading	Clear Roadway Width of Bridges[3]
A1	Under 3500	60 mph [4]	24'	6'	36'	HS20	36'
A2[1]	3500-13800	60 mph	24'	10'	44'	HS20	44'
A3	Over 13800	70 mph [5]	24' (2)	6'L 10'R	40' (2)	HS20	40'

Source: For County Trunk Highway Standards see TRANS 205.

[1] The top of the traffic volume range for design class A2 is 13,800 AADT (LOS trigger of 5.0.) The volume is based on the 1998 Highway Capacity Manual assuming; level terrain, 12-foot lanes, ≥ 6-foot shoulders, 80 percent passing, 10 percent trucks, K100 design factor, and directional split of 62/38. See Procedure 11-5-3 for additional information on threshold triggers, level of service for different facility types and the respective numerical value.

[2] The full width of approach roadways should normally be provided across all new bridges. Exceptions may be made when the bridge is considered a major structure on which design dimensions should be subject to individual economic studies because of the high unit cost.

[3] Lateral clearance requirements for underpass bridges are included in Procedure 11-35-1.

[4] For County Highways in design class A1 the desirable design speed is 60 mph; however, a minimum design speed of 55 mph is acceptable.

[5] See discussion in Procedure 11-10-1.

Design Criteria for County Trunk Highways Functionally Classified as Collectors

TRAFFIC VOLUME			ROADWAY[1] WIDTH DIMENSIONS					BRIDGES[1,4]
Design Class	Current ADT	Design ADT	Design Speed	Traveled Way	Shoulder	Roadway	Minimum Design Loading	Clear Roadway Width of Bridges
C1	0-400		40 MPH	22'-24'	2'-4'	26'-32'	HS20	26'-30'
C2	400-750	Under 1500	50 MPH	22'-24'	6'	34'-36'	HS20	28'-30'
C3		1500-3500	60 MPH[3]	24'	6'	36'	HS20	32'-34'[2]
C4		Over 3500	60 MPH	24'	8'	40'	HS20	40'[2]

[1] Where a range of widths is shown, the smaller number is the minimum width and the larger number is the maximum width eligible for federal or state project participation.

[2] Bridges in Design Classes C3 and C4 with a total length over 100 feet may be designed with a clear roadway width of 30 feet.

[3] For County Trunk Highways in design class C3, a design speed of 55 mph is acceptable.

[4] Lateral clearance requirements for roadways under bridges are included in Procedure 11-35-1.

Source: Administrative Rule Trans 205, "County Trunk Highway Standards"

Design Criteria for County Trunk Highways Functionally Classified as Local Roads

TRAFFIC VOLUME			ROADWAY[1] WIDTH DIMENSIONS					BRIDGES[1,4]
Design Class	Current ADT	Design ADT	Design Speed	Traveled Way	Shoulder	Roadway	Minimum Design Loading	Clear Roadway Width of Bridges
L1	0-250		40 MPH	20'-22'	2'-4'	24'-30'	HS20	24'-28'
L2	250-400		40 MPH	22'	2'-4'	26'-30'	HS20	26'-30'
L3	400-750	Under 1500	50 MPH	22'-24'	6'	34'-36'	HS20	28'-30'
L4		1500-3500	60[2] MPH	24'	6'	36'	HS20	30'-34'[3]
L5		Over 3500	60 MPH	24'	8'	40'	HS20	40'[3]

[1] Where a range of widths is shown, the smaller number is the minimum width and the larger number is the maximum width eligible for federal or state project participation.

[2] For County Trunk Highway is design class L4, a design speed of 55 mph is acceptable.

[3] Bridges in Design Classes L4 and L5 with a total length over 100 feet may be designed with a clear roadway width of 30 feet.

[4] Clearance requirements for underpass bridges are included in Procedure 11-35-1.

Source: Administrative Rule Trans 205, "County Trunk Highway Standards"

Design Criteria for Resurfacing, Restoration
And Rehabilitation (3R) Projects on
Rural County Trunk Highways
Functionally Classified As Arterials

TRAFFIC VOLUME			ROADWAY WIDTH DIMENSIONS		
Design Class	Design AADT	Design Speed	Traveled Way [1]	Shoulder	Roadway
		mph	feet	feet	feet
3RA1	Under 750	55	22	3	28
3RA2	750 – 2000	55	24	4	32
3RA3	Over 2000	55	24	6	36

[1] The traveled way width shall be 24 feet on federally designated long truck routes (i.e. the "National Network" as defined in 23 CFR Part 658.) A traveled way width of 24 feet is desirable on state designated long truck routes and other highways which have current heavy vehicle (six or more tires) traffic volumes in excess of 10 percent of Design AADT. Both the "National Network" and the state designated long truck routes are combined in a single list in Wisconsin Admin. Rule TRANS 276.

Source: TRANS 205, County Trunk Highway Standards.

Date August 23, 2005 **Figure 5** **1 of 1**

Design Criteria for Resurfacing, Restoration
And Rehabilitation (3R) Projects on Rural
County Trunk Highways Functionally Classified
as Collectors and Locals

TRAFFIC VOLUME			ROADWAY WIDTH DIMENSIONS		
Design Class	Design AADT	Design Speed	Traveled Way [1]	Shoulder	Roadway
		mph	feet	feet	feet
3RC1	Under 750	55	20	3	26
3RC2	750 – 2000	55	22	4	30
3RC3	Over 2000	55	22	6	34

[1] The traveled way width shall be 24 feet on federally designated long truck routes. A traveled way width of 24 feet is desirable on state designated long truck routes and other highways which have current heavy vehicle (six or more tires) traffic volumes in excess of 10 percent of Design AADT.

Source: TRANS 205, County Trunk Highway Standards.

Date August 23, 2005 **Figure 6** **1 of 1**