River Falls Bicycle and Pedestrian Plan

A Component of a Multi-Modal Transportation System for the Urbanized Area

Prepared by Schreiber / Anderson Associates in Collaboration with the River Falls Bicycle and Pedestrian Trails Ad-Hoc Committee

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Executive Summary

In urban and suburban areas the challenge of transportation is to provide flexible, convenient and cost effective travel options. Bicycling and walking are healthy, non-polluting and cost effective travel modes that, if properly developed, can help the City and Town of River Falls respond to future transportation challenges,.

River Falls is typical of a small, but growing, American community. It is relatively compact and provides a variety of services and activities, all within walking or bicycling distance. However, River Falls is experiencing a transformation of suburban growth and increased automobile traffic. While this transformation offers new economic opportunities, it also begins to diminish the rural, small town character that are attractions to the area. Enhancing people's ability to safely and effectively bike or walk throughout River Falls will help preserve the community's unique character. Furthermore, increasing non-motorized transportation opportunities will benefit River Falls by providing healthy, non polluting and cost effective travel options.

It is the intent of this plan to create policies and facilities in the River Falls urbanized area that will enhance bicycling and walking opportunities. The plan builds on the unique characteristics of the region together with the community's relatively compact size and minimal traffic congestion to improve bicycling and walking.

This plan was sponsored by the City of River Falls, the Town of River Falls, and partly funded by the Wisconsin Bicycle and Pedestrian Facility Program. It was prepared by Schreiber/ Anderson Associates in conjunction with the River Falls Bicycle and Pedestrian Trails Ad hoc Committee, represented by the following members:

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Part one of this plan outlines the benefits of bicycling and walking, the approach being used to enhance these modes of transportation and the study goals and objectives. Part two describes the process used to select corridors, evaluate their suitability for bicycling or walking and recommends design treatments to accommodate non motorized travel. The third component of the plan recommends strategies to implement the facilities that are designed to increase user safety and convenience. Specific facility recommendations are given for each corridor, along with costs, plan priorities and funding opportunities. The final section of this plan makes operational recommendations for enforcement, education, maintenance and land use planning activities designed to make bicycling and walking viable transportation alternatives in River Falls.

INTRODUCTION

Through the years bicycling and walking have undergone varied levels of popularity as primary modes of transportation. While walking has always been a significant means of getting around, contemporary America has evolved with the increasing use of the automobile. This has created opportunities for people to live further and further from various urban destinations. As a result, trips traditionally made by walking have become less desirable and replaced by the need for more automobiles and infrastructure.

Nevertheless, walking will always be a basic mode of transportation. The 1990 census reports that 4.5 million Americans 16 years and older walked to work in March. Twenty five percent of these people were disabled pedestrians whose infrastructure needs were recently addressed through the Americans with Disabilities Act, 1990.

Compared to walking, bicycling has experienced even greater swings in popularity. Before the turn of the century bicycling played an active role in transportation and influenced the paving of many roads in Wisconsin and throughout the country. As motor-vehicles became affordable to a large portion of the population, bicycling began to fall from favor as a basic means of travel but remained as a significant recreational activity. Then in the late 1970's and early 1980's a renewed interest in bicycling began as the result of the energy crisis. Although bicycling activity has decreased somewhat from the 1980's it is presently viewed as an effective means of travel.

Currently, approximately 6% - 9% of all Wisconsin work trips are made by walking and bicycling.[1] While the winter months may limit some bicycling and walking activity there is perhaps no better way of enjoying this attractive and temperate state than by riding a bicycle or walking during the spring, summer and fall seasons. Wisconsin recognizes the importance of these non motorized modes within the inter-modal transportation system. The State's Translink 21 initiative has recommended increases of 50 million dollars to be spent on a state-wide bicycle plan and to provide for bicycle facilities on existing highways. Another 50 million dollars was recommended to finance stand-alone urban bicycle and pedestrian projects.

Bicycling and walking will probably never replace the need for motor vehicles. However, in relatively compact cities like River Falls non motorized modes of transportation are beneficial transportation alternatives. In urban areas most households need two or more motor vehicles; but in smaller compact cities it is easier to manage with one household automobile if walking and bicycling are made viable options.

Non motorized modes of transportation are healthy, non-polluting and do not require costly infrastructure. Furthermore, increased levels of bicycling and walking can effectively mitigate many problems of urban transportation such as traffic congestion, poor air quality and parking space requirements. Some individual and social benefits that are generally associated with these travel modes include:

- **Transportation benefits:** Bicycling and walking are among the most cost efficient modes of transportation in regards to operation, development of facilities and maintenance. Furthermore, bicycle facilities can offer general transportation benefits such as paved shoulders and displaced automobile use.
- **Health and fitness benefits:** Both bicycling and walking are some of the best forms of exercise and therefore can effectively increase the health of individuals and the community.
- **Recreation benefits:** Off road facilities for bicycling and walking enhance transportation and recreation opportunities, simultaneously.
- **Environmental benefits:** Bicycling and walking do not contribute to noise or air pollution, and furthermore, the development of off-road facilities can protect and enhance natural resources.
- **Social benefits:** Walking and bicycling promote the social interaction of families and the community.

To fully realize the potential of these travel modes it is necessary to both improve infrastructure accommodations and the policies that promote and educate. While nearly eight million Americans enjoy bicycling, and all of us are at one time pedestrians, only 7.2% of all trips in the United States are by walking and 0.7% by bicycling. Safety and traffic conditions are reasons often cited for infrequent use of these travel modes, but a 1990 Harris Poll shows that twice as many people would bicycle or walk as a primary means of transportation if better facilities were available.

River Falls has recognized the benefits of providing safe and convenient non-motorized transportation opportunities within the context of the overall transportation system and has facilitated this plan to improve local facilities and policies.

APPROACH

River Falls is a relatively compact community of 10,837 people that evokes nostalgic images of people sitting on their front porches, children tooling around the neighborhood on their bikes and families enjoying a summer evening at the park. In many ways this is an accurate portrayal of the community. Its residential streets are calm and most destinations are within walking distance. But River Falls is in the midst of change. Influenced by its proximity to the St. Paul/ Minneapolis Metropolitan area, the presence of the University of Wisconsin - River Falls, and the natural and cultural resources harbored around the Kinnickinnic River, River Falls will no doubt continue to attract residents and recreationalists. The question remains, will River Falls grow to be a place where the children can safely ride around on bikes? Will it be a place that provides opportunities for people to walk or bike to work and school? Will the community provide viable transportation alternatives for people who choose not to use the car for every type of trip. The residuals of growth may include increased parking demands, increased traffic congestion, and dispersed land-use patterns that render bicycling and walking unsafe and inconvenient travel options. Or, growth can build the unique assets of the community so that it remains vibrant and retains the character that makes the place unique and attractive.

River Falls is in an excellent position to structure its growth in a positive manner. By building on its linear open space system, protecting its natural and cultural amenities and by creating an effective transportation system that caters to a variety of users, River Falls may retain its unique character. ***The foundation of this plan is to use area resources together with the relatively compact size and minimal traffic congestion to enhance non-motorized transportation opportunities in the city and town of River Falls.***

GOALS AND OBJECTIVES

The overall goal of this planning effort is to recommend **facilities** and **policies** that will encourage increased levels of bicycling and walking while creating a safe, comfortable environment for existing users. Specific objectives designed to accomplish this goal include:

- Facilitate public participation in the planning process.
- Identify the needs of different groups of users and design a system for all ages and abilities.
- Create a bicycle transportation system accessible within a two-minutes ride of all urban residences and make the pedestrian system directly accessible (one or both side of all city streets) to all residences.
- Focus the development of facilities on schools, the downtown area, other commercial areas, transportation nodes and the University.
- Design an off-street, grade/automobile separated, bicycle and pedestrian system integrated into the overall transportation system.
- Recommend bicycle and pedestrian support facilities at transportation nodes, schools and businesses.
- Integrate the plan with adjoining towns and counties.
- Develop a phased development plan and budget to accomplish the stated goals and objectives and identify funding strategies for implementation.
- Recommend community policies such as minimum road width standards and options to accommodate bicyclists on all streets.

- Recommend educational, maintenance and enforcement activities to enhance the safety of bicycling and walking.

These objectives will guide the selection and evaluation of potential travel corridors throughout the planning process.

PLANNING PROCESS

Planning Process:

- ***Develop goals and objectives unique to River Falls***
- ***Inventory existing conditions and evaluate use patterns***
- ***Identify potential bicycle and pedestrian travel corridors***
- ***Evaluate selected corridors through established planning criteria***
- ***Recommend and prioritize facilities for implementation***
- ***Prepare operational recommendations***
- ***Evaluate and revise city-wide plan every five years.***

This plan was sponsored by the City of River Falls and the Town of River Falls, and partly funded by the Wisconsin Bicycle and Pedestrian Facility Program (A Statewide Multimodal Improvement Program). The plan was prepared by Schreiber/ Anderson Associates in conjunction with the River Falls Bicycle and Pedestrian Trails Ad hoc Committee. The process and criteria used to recommend bicycle and pedestrian transportation systems were largely derived from the Wisconsin Bicycle and Pedestrian Planning Guidance, 1993, the AASHTO Guidelines for Developing Bicycle Facilities, 1990, and Walk Alert: The National Pedestrian Safety Program, 1993.

INVENTORY AND ANALYSIS

The inventory and analysis of factors affecting bicycling and walking include community demographic characteristics, geography, motor vehicle travel characteristics, aesthetics, and travel corridor conditions. Other recognized factors that will affect transportation decisions are; personal fitness, time to work, weather, and facilities.

Land Use

Land use patterns in River Falls are greatly influenced by its proximity to the Twin Cities, as well as the University of Wisconsin - River Falls, the geography of the region and the area's transportation infrastructure.

Two-thirds of the city is within Pierce County and one third within St. Croix County; both counties were recently included in the Minneapolis and St. Paul, Minnesota "Metropolitan Statistical Area" (MSA). As part of the Twin Cities Metropolitan Area the City of River Falls and surrounding Towns may expect relatively rapid commercial and residential growth. Estimates from the 1987 Land Use Plan show that the city is expected to grow at by 2,500 new residents (a rate of 10% to 25%) in the next ten years.[2]

Commercial activity is presently concentrated in the downtown business district along Main Street, but new commercial and industrial growth is rapidly taking place to the north of the downtown along North Main Street and STH 35. Providing for various modes of personal transportation and commerce to existing and future commercial regions is critical to the success of area businesses.

Another element of the community that depends on an efficient non-motorized and motorized transportation infrastructure is the University of Wisconsin - River Falls. The University of Wisconsin - River Falls (UWRF) with 6,000 students has a clear and present effect on the City and Town of River Falls. Nearly 1,200 students live off campus in the community, and 2,800 commute from Minnesota or surrounding regions. The University has identified and recorded areas within the urbanized area with the greatest student and employee housing densities. These areas include:

1. Along Johnson Street and Park Street (SW sector).
2. Between Wasson Lane and Wasson Court (East Central sector).

3. Maple Street south to Cascade - primarily between Main Street and 6th Street.

The UWRF in currently evaluating campus circulation patterns and will be completing a bicycle and pedestrian trail system throughout the campus in 1996. Planning for non-motorized transportation connections between high density student population areas of the community and the campus trails is important because of the levels of walking and bicycling generated by the University.

Area schools also generate a modest level of bicycle and pedestrian traffic in and around the residential districts of River Falls. While many children are presently bussed or driven to school the city hopes to improve the non-motorized transportation infrastructure to allow more students the opportunity to safely walk or ride bicycles. Providing safe and efficient bicycle and pedestrian facilities to the five public schools, two parochial schools and the new high school is an objective of this plan that will ultimately reduce bussing costs.

At the rate of growth estimated for River Falls approximately 750 new housing units could be expected in the next ten years. Presently, residential growth is most prominent on the periphery of the community. The Town of River Falls to the south and areas to the east of the city have been fastest growing. The possibility of a new sewer lift station on the west side will open many development opportunities. Areas now slated for residential growth have been plotted. To the extent possible, bicycle and pedestrian facilities will be evaluated for these developing areas of the community. Consideration will be given to the transportation and land-use patterns that will be influenced by the steeper topography of the peripheral landscape.

Landscape Character

The dominant landscape features of River Falls are the Kinnickinnic River, and the surrounding hills and coulees. These features influence land use and transportation patterns in the region.

The Kinnickinnic River, including Lake George and Lake Louise, is a Class 1, self regenerating trout water that winds through the center of the community. This riverfront harbors abundant natural, recreational and cultural resources and has facilitated travel and commerce throughout the city's history. A vision of this linear open space system is of a public green corridor that preserves and enhances the natural and cultural features of the community's heritage with a compatible bicycle and pedestrian system that will allow people to enjoy these resources.

Except for the Kinnickinnic riverfront, topography is generally not a major consideration for transportation related infrastructure in River Falls because it is relatively flat. But as the community expands toward the surrounding hills and coulees the steep topography will play an increasingly important role in transportation systems of the region. Winding and curvalinear road systems that will likely result as developments respond to this topography may increase travel distances and diminish opportunities to walk or bike to various community destinations.

Transportation Infrastructure

Main Street, running generally north and south along the Kinnickinnic River is the principal arterial. Historically this street has been the hub of commercial activity and collector of secondary roads. Other arterials that create the primary street system include Cascade Avenue, and Division Street running east and west from Main Street. Beyond these streets a gridded infrastructure dominates older portions of the city, some acting as collectors for the residential streets around them. Newer subdivisions are structured by meandering roads and cul-de-sacs linking to collectors and arterials.

Outside the city limits several state and county trunk highways provide regional connections. State Trunk Highways (STH) 29, 35 and 65 are the primary travel corridors, but County Trunk Highways (CTH) M, MM, FF and are also used for various modes of transportation. The recently constructed STH 65 bypass on the east side of the city is a limited access highway that was once considered for a separated bicycle and pedestrian path but plans for that path have

been abandoned.

Although many of the streets in River Falls are presently calm and relatively safe for bicyclist and pedestrians, the city's inevitable growth may have several adverse affects on non-motorized transportation. First, increased levels of traffic may be expected on many city streets; and second, developments may become decentralized and located too far from community destinations to walk or bike. To mitigate these affects, it will be necessary to improve infrastructure accommodations and the policies that promote non-motorized transportation uses.

Existing Bicycle and Pedestrian Facilities

Sidewalks and other pedestrian accommodations are largely provided in the older commercial and residential areas of River Falls, but pedestrian facilities are not consistently provided in many newer regions of the community. Furthermore, some critical streets in older areas of the community lack sidewalks and other pedestrian accommodations. Addressing this issue, the city plans to retrofit these streets with needed pedestrian accommodations and has developed a "Five Year Sidewalks Improvement Plan" in 1991. Unfortunately, a lack of funding for this program has slowed the process of retrofitting streets with sidewalks, ramps and street crossings.

In the downtown business district the infrastructure for pedestrian and motor vehicle traffic provides good accommodations. A central island was recently developed with bump-out sidewalks, trees, vehicular parking and bicycle racks. The storefront rights-of-way contain motor-vehicle parking and wide sidewalks with trees and parking meters. These storefront sidewalks appropriately prohibit riding bicycles and using roller blades, and are dedicated to pedestrian use. However the absence of bicycling facilities in and around the downtown has created difficulties for bicyclists (particularly child cyclists) who shop in downtown businesses. An evaluation of how to accommodate cyclists in the downtown will be a component of this plan.

Currently, the only designated bicycle facility in River Falls is the White Kinni Trail; however, the city is planning an off-street path along Cemetery Road and the University will complete an internal bicycle/pedestrian path system in 1996. Furthermore, several designated bicycle routes exist in the towns and counties surrounding the city. The Town of River Falls has developed an asphalt bicycling and walking trail parallel to STH 29 south of the city, and St. Croix County is now planning new bicycle routes on Quarry Road, Radio Road, CTH M and CTH MM.

Existing bicycle and pedestrian facilities will be integrated into this plan along with a reevaluation of these facilities to determine whether additional improvements are necessary. Moreover, the following planning and design considerations have been explored to identify and recommend additional corridors for bicyclists and pedestrians.

PRIMARY PLANNING CONSIDERATIONS

Locating Corridors for Further Evaluation

A major objective of this plan is to establish a pedestrian system that is directly accessible to all urban residents and to create primary bicycle facility system that is within two-minutes ride of all urban homes. All urban streets, with the possible exception of several highways, will be used at one time or another by bicyclists and pedestrians; however the entire transportation system cannot be planned with facilities that are suitable for bicycling. Consequently, bicycle facility improvement recommendations will be limited to primary corridors that will link bicyclists to **major** community destinations. Additionally, efforts to improve the basic level of safety for bicyclists on all urban streets will be addressed through policy recommendation in this report.

Roadway Corridors

Directness and continuity are goals shared among motorized and non-motorized transportation users. Pedestrians, motorists and bicyclists share similar origins and destinations, but use different modes to accomplish their goal of arriving at a destination safely and efficiently. It is logical, therefore, that the corridors of arterial and collector streets should fulfill the needs of bicyclists and pedestrians. Indeed, many minor arterial and collector streets in River Falls are very amendable to improvements to accommodate non-motorized travel while simultaneously connecting primary destinations. Still, some area state highways and principle arterials have physical and use characteristics that impede development of safe and effective bicycle and pedestrian facilities.

Use Patterns

Determining the potential use of travel corridors for bicycling and walking is perhaps the most important planning consideration. The potential for bicycling and walking can be predicted by analyzing historical use patterns, derived from census data, and accident data and studying trip generators (including future growth areas of the community).

Census Data

The 1990 Bureau of Census Data provides useful information about the primary mode of travel for individuals over age 16. Bicycling and walking "trips to work" are recorded in this data.

Table 1. National Bureau of Census Data

1990 Bureau of Census Data	*United States*	*Wisconsin*	*Pierce County*	*St Croix County*	*City of River Falls*	*Town of River Falls*
Means of Travel to Work						
Total number 16 and over	115,070,274	2,349,691	16,995	25,326	5,781	807
Drove alone	84,215,298 **73.2%**	1,750,791 **78.3%**	11,207 **65.9%**	18,088 **71.4%**	3,860 **66.8%**	724 **89.7%**
Bicycled	466,856 **.4%**	11,802 **.5%**	42 **.3%**	18 **.1%**	18. **.3%**	0 **0%**
Walked	4,488,886 **3.9%**	130,132 **5.8%**	1,558 **9.2%**	1,014 **4.0%**	868 **15.0%**	18 **2.2%**
Travel Time to Work						
< 5 minutes	NA	NA	1,385 **8.2%**	1,580 **6.2%**	588 **10.2%**	19 **2.4%**
< 10 minutes	18,257,921 **15.9%**	517,076 **22.0%**	4,282 **25.2%**	5,522 **21.8%**	2,138 **37.0%**	190 **23.5%**

Consideration is given to the fact that this data is taken in March when snow and other northern weather conditions may dramatically affect bicycling and walking activities in River Falls. The census data does not include information on young walkers or bicyclers, occasional bicycling and walking trips to work among people over 16 years, or travel for purposes other than work (only 1/5 of all trips are work related[3]). With these limitations in mind census data was used to help estimate levels of bicycle and pedestrian activity.

A review of the Town and City of River Falls 1990 census data shown in Table 1 reveals that the levels of bicycling to work are somewhat below state and national averages, though nearly 37% of all trips to work are less than 10 minutes drive - well within the distance most people are willing to bicycle (See General Characteristics of Different Types of Bicyclists, Appendix A). On the other hand 10% of all trips are within walking distance (less than 5 minutes drive), and 37% are within bicycling distance (less than 10 minutes drive). These figures may reflect the levels of accommodations provided for each respective travel mode in the community. However, remember that this data may have been influence by snow and other northern weather conditions.

Accident Data

In River Falls many serious accidents involving bicyclists and pedestrians have been reported and there are many more minor accidents that go unreported. Between 1990 and 1994, police reports show 26 bicyclists were involved in accidents and 18 accidents involved pedestrians (see Table 2). The local hospital, on the other hand, reports that 69 bicyclist were treated for injuries between April 1992 and July 1994. Of course many hospital admittance bike accidents may not occur on public streets or paths.

An analysis of the "times" and "locations" of accidents, derived from police reports, helped to **locate possible facility problems** and **to determine historical patterns of use.** Several patterns were documented as a result of plotting accidents for River Falls including:

- A concentration of accidents occurred at the intersection of 6th Street and Cascade Avenue. These may be due, in part, to the high bicycle and pedestrian use generated by the University; but a large curb radius on the NE corner allows fast motor vehicle turning speeds that could pose conflicts with pedestrians crossing 6th Street at that location.

- The intersections of S. Main Street and Walnut Street, and S. Main Street and Johnson Street are the locations of several accidents, but no apparent facility problems were observed - pointing to the deduction that these intersections are simply heavily used by bicyclists and pedestrians.

Table 2. Reported bicycle and pedestrian accidents, City of River Falls 1990 - 1994

Mode Involved	Year				
	1990	1991	1992	1993	1994
Bicyclist Involved Accidents	6	6	4	8	2
Pedestrian Involved Accidents	2	7	3	4	2

Source: Wisconsin Department of Transportation, Division of Motor Vehicles, Traffic Accident Section, 1994 and March 27, 1995 memorandum from Captain Carlyle Schrank, River Falls Police Department

User Characteristics

Who are the primary users of bicycle and pedestrian modes of travel in River Falls, what are their destinations, how far are they willing to travel and what facilities do they desire?

Three main types of pedestrians are recognized in this plan:

- Pedestrians using means of assisted movement or handicapped pedestrians

- Average adult pedestrians
- Children and older adults

Three major types of bicyclists currently ride in River Falls area:

- Child cyclists
- Adult students of the University of Wisconsin - River Falls
- Adult recreational riders

Each of these users have unique characteristics that will be addressed in this plan (Appendix F provides an overview of trip length and other characteristics for different types of bicyclists). An objective of this plan, however, is to promote transportation activities for **all** types of bicyclists and pedestrians. Systems designed to attract a broad cross section of users, while often popular, may experience user conflicts. In-line skaters, skate boarders, and others users may be attracted to the facilities provided for bicyclists and pedestrians. If conflicts between users is anticipated additional widths or path separation may be proposed to maintain the safety of the facility.

To attract the widest range of people it is necessary to design a system that is easy to access, barrier free and provides relatively safe and direct routes to major destinations (Trip Generators).
In this plan two approaches are used for defining trips generators. At the regional level, recreation destinations, and other communities are considered the primary trip generators that will be linked by bicycle and pedestrian routes. The Kinnickinnic State Park, the City of Hudson, the City of Ellsworth and the City of Prescott are among the regional trip generators.

In the urban and suburban areas of River Falls, schools, employment centers, residential areas, retail areas, and recreational destinations are among the primary destinations. The following urban destinations are ranked in decending order:

University of Wisconsin - River Falls Campus
River Falls Central Business District
Area Schools (no particular order)
River Falls High School
Rocky Branch Elementary School
Middle School
Westside Elementary School
Greenwood Elementary School
River Falls Area Health Center
Hoffman Park
Glen Park
Heritage Park
Southside shopping area
River Falls Industrial Park
Shopko commercial area and River Falls Corporate Park
Lutheran Center and St. Bridget School
Golf Course

How far are people willing to travel by bicycle or walking to these destinations? Average trip length often depends on mix of variables including the purpose of the trip, type of facilities, weather and other considerations. For example, recreational bicycle trips of 20 miles, or more, are common. Conversely, the average length of commuter trips for bicyclists and pedestrians is less than 20 minutes. For the average adult cyclist this equates to a trip of 3 miles and for the pedestrian 3/4 mile. Trips of these respective distances are efficiently made by bicycling or walking; although many people will choose to walk or bicycle for trips of greater distances. As a fundamental component of the multi-modal concept, bicycling and walking systems should be developed to optimize and accentuate other travel modes. The benefits of this approach are:

- Lower transportation costs by allowing each mode to be used for the portion of the trip for which it is best suited.

- Reduce the burden on stressed infrastructure by shifting use.

- Generate higher returns for public/private infrastructure investments.

Bicycling and walking are best suited to short trips - particularly in urban areas. Using the assumptions of average trip length and trip purpose as variables, the following service areas have been prescribed for various modes of transportation.

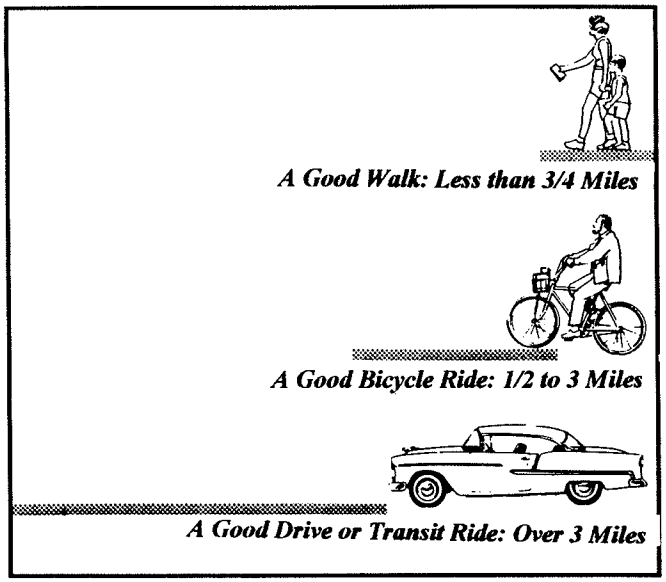

Figure 1. Model Service Areas for Different Modes of Transportation.

In River Falls over 10% of all trips are within effective walking distance and over 37% of all work trips are within bicycling distance. If distance (and time) are not the primary impediments to local cycling and walking, what are the impediments?

Local meetings were conducted to determine general characteristics of users and the impediments to non motorized transportation. Informal user surveys of this study included meetings with local focus groups, the city staff, state representatives and local town representatives. Interviews were also conducted with representative from the UWRF and local school children from the Rocky Branch Elementary School and the Greenwood School. Issues concerning existing users were noted as follows:

- Lack of provisions for child cyclists in the downtown area.
- Educational activities for bicyclists are inconsistent.
- Not enough facilities that would be attractive to recreational users.
- Poor crossings at Johnson Street and Cascade Avenue.

Together, users characteristics, census data, existing corridors, land use patterns, accident data and trip generators were analyzed to select corridors that have a high potential for serving bicyclists and pedestrians. These corridors are evaluated against secondary design considerations to determine the facilities that will most enhance bicycling and walking activities in River Falls.

SECONDARY DESIGN CONSIDERATIONS

The following secondary considerations were used to evaluate selected corridors, site facilities within the corridors, recommend design treatments, and prioritize capital improvements.

Safety and Traffic Conditions

The motor-vehicle ADT (Average Daily Traffic), speed, and traffic mix within corridors affect the safety, and therefore, the suitability of corridors for bicycling and walking. These may affect individuals differently depending on their level of experience and personal preferences. Appendix F shows several general characteristics of different types of users that help to analyze the suitability (or desirability) of travel corridors for different people. The design treatments and facilities recommended in this plan will respond to the experience and preferences of anticipated users and to state and national guidelines.

For both rural and urban roadways, guidelines have been established by national bicycle facility guidelines, and the State of Wisconsin, based upon Average Daily Traffic (ADT). Table 3 shows design treatments prescribed for the cyclists.

Planning implications derived from the inventory and analysis of safety and traffic conditions are:

▸ ***Several selected streets such as Main Street and Division Street have traffic volumes that would require design treatments such as bicycle lanes or parellel, separated paths.***

▸ ***Off-street paths that separate bicyclists from traffic will be recommended on some corridors that have streets with high ADTs or high truck traffic. Linear open spaces will provide these transportation alternatives.***

Beyond responding to safety and traffic conditions, design treatments will be influenced by physical roadway and travel corridors' conditions.

Roadway and Travel Corridor Conditions
Roadway width, number of stops, intersections, curb lane width, surface condition, vehicular parking, and barriers affect the suitability of travel corridors for bicycling. For urban bicyclists the usable roadway width is often the most limiting physical feature of a roadway. In rural areas such as Town and County roads, sightlines are also critical to cyclists safety. Sightlines are measured in this plan by the percent of "yellow Line". Table 4 shows physical characteristics of the selected corridors. Plan recommendations will be based on these travel corridor conditions as well as other primary and secondary planning considerations.

Planning Implications derived from the inventory and analysis of travel corridor conditions are:

▸ ***Regarding state and national guidelines the most restrictive physical condition for River Falls' bicyclists are the narrow curb lanes in urban areas. Therefore, recommendations for removing one or both-side parking or widening streets at the time of reconstruction will be considered to accommodate cyclists on some streets.***

▸ ***Topography does not significantly impact transportation in most urban areas River Falls; however, as the community expands into the surrounding hills and coulees topography will become an increasingly important consideration. Furthermore, many area rural roads have vertical and horizontal grade changes that inhibit sightlines.***

Table 3. Bicycle facility guidelines per motor-vehicle ADT

ADT	*Bicycle Facility Guideline Recommendation*
Rural: Less than 1500*	***Shared Roadways***: Bicycle facilities (paved shoulders) are generally not needed but sight distances, traffic mix and peak traffic times are other significant considerations. Rural shared roadways are usually mapped but unsigned.
Rural: over 1500*	***Paved Shoulders:*** Paved shoulders are **not** exclusive rights of way for cyclists but can provide safe accommodations. Freeways and Interstates often restrict non-motorized traffic.
Urban: Less than 2,000**	***Shared Roadways:*** Generally bicycle facilities are not needed, however signs and bicycle parking locations are beneficial.
Urban: 2,000 - 10,000**	***Wide Curb Lanes, Bicycle Lanes: Bicycle facilities are determined by a variety of roadway and traffic conditions.***
Urban: over 10,000*	***Bicycle Lanes:*** Bicycle facilities should have restrictive right-of-ways or should be physically separated from motor-vehicle traffic.

** From **Selecting Roadway Design Treatments to Accommodate Bicyclists, 1994**. This data assumes less than 5% truck traffic and 24' total roadway width. In most cases, rural, roads are not recommended for inexperienced bicyclists.*

*** From **Selecting Roadway Treatments to Accommodate Bicyclists, 1994**. See Appendix B. This criteria is based on the Average Adult Cyclist. Off-street facilties may also be suitable.*

Cost and Ease of Implementation

he cost of improving bicycle and pedestrian systems is an important factor in recommending facility improvements. Generally, the cost of bicycle routes may range from $7,500 to $75,000 per mile and paths from $45,000 to $300,000 per mile. The following construction costs were developed by comparing the average statewide costs[3] to Kerr's Manual of Cost Estimating, 1994[4]. These estimated costs are intended for planning purposes only and will be used later in the report to estimate the cost of recommended facilities.

Estimated Construction Costs per Mile (1994)

- Four foot paved bituminous shoulders $20,000
- Bike Lanes/wide curb lanes (3' concrete) $70,000 - $75,000
- Eight foot wide limestone path on railroad grade $35,000 - $40,000
- Eight foot bituminous path (rural) $100,000 - 120,000
- Urban path, basic $180,000 - $200,000
- Urban path, highly developed $300,000
- Signs $500 each or $2,500/mile
- Striping/restriping $5,000
- Bicycle parking, $30 per space

The benefits of a bicycle and pedestrian transportation system to the health and well-being of a community justify the costs of facility improvements. Nonetheless, the financial constraints of providing facilities need to be considered. Infrastructure improvements should be valued based on their cost compared to the level of service provided by the improvements.

Planning Implications derived from the inventory and analysis of cost considerations are:

- ***Providing bicycle parking and signage on suitable bicycle corridors is a cost-effective means of enhancing conditions for local cyclists. Signing and designation of suitable existing facilities should be priority projects.***

- ***Providing better bicycle parking in downtown areas is a cost-effective means of enhancing bicycling and therefore, should be a priority of the plan.***

- ***Types and availability of funding sources will influence the phasing and development of proposed facilities in River Falls. Potential funding sources should be reviewed annually.***

Aesthetics

In the broadest sense of the word, aesthetics describe the pleasure of all of the senses, not simply the scenic beauty. Therefore, sounds, smells and pavement surface quality are all within the aesthetic consideration. Pedestrians and bicyclists are more affected by, and aware of, the aesthetics of their environment than most motor vehicle drivers. Furthermore, because of travel speed, cyclists and pedestrians have a greater affinity for frequent changes in the landscape character.

Even for purely utilitarian transportation purposes the aesthetic conditions of corridors influence travel choices. In urbanized areas historic and cultural features and natural amenities like riverways or greenways were inventoried and analyzed as factors that attract bicyclist and pedestrian transportation.

Planning implications derived from the inventory and analysis of aesthetic conditions are:

- ***To attract additional bicyclists and pedestrians for recreation and transportation purposes, the city and town should consider long range plans to acquire further public open spaces along its scenic resources like the Kinnickinnic River and its tributaries. The riverfront between Division Street and Paulson Road is one example of a scenic urban corridors that would provide beneficial transportation and recreation opportunities.***

- ***River Falls has scenic destinations such as riverfront corridors, lakes, parks and other diverse landscapes. These aesthetic features, planned into the bicycling and pedestrian transportation system, will attract people for utilitarian and recreational purposes.***

Security

The relevance of security in River Falls is less than in large urban areas, but the security of all users should be a consideration for this community. The potential for criminal acts or harassment still exists and can affect the use of travel corridors. Secluded off-road paths and parking areas are perhaps most prone to criminal acts against bicyclists and pedestrians. Highly used paths are essentially self-policing and, therefore, off road systems should be designed to attract users through different times of day and season so that the trails are frequently populated. At times when the use of paths is sparse, such as at night or possibly during the winter months, paths should be closed and bicyclists and pedestrians should use alternate on-road corridors. Generally, urban paths should remain open and visible from other use areas and have appropriate lighting at parking and resting areas. Unlit, rural paths should be closed after dark to ensure the safety of bicyclists and pedestrians.

Security has not been a problem along the White Kinni Trail, however the city should keep the park closed after 11 pm to maintain security. Additional lighting and removal of understory shrubs to improve sightlines around the path may be necessary if security problems are foreseen.

Planning implications derived from the inventory and analysis of conditions relating to security are:

- ***Lighting is recommended for all facilities in the central business district. Lighting should also be considered for off-street transportation paths that may be used throughout the evening hours or through the year.***
- ***Off-street paths should be designed to accommodate restricted access by emergency and maintenance vehicles.***

The following Table 4 summarizes some evaluation criteria for corridors in the River Falls urbanized area. These corridors were selected through primary planning considerations. Note that items in parenthesis in the "remarks" column are destinations that are served by each respective corridor.

Table 4 - Urban Corridor Evaluations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic[1]	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Sidewalk (sides of street)	Remarks (Destination linkages)
BRIDGES								
CTH MM ST BRIDGE	NA	Light - moderate truck traffic	36	30	Both sides	.02	0	No sidewalks, narrow curb lanes.
DIVISION ST BRIDGE	NA	Light - moderate truck traffic	44	25	Both sides	.04	2	Ramp on NW intersection of Division and Main is narrow and at an angle that will be difficult to negotiate for bicyclists and for people with disabilities.
MAPLE ST BRIDGE	NA	General	36	25	Both sides	.04	2	Sidewalks both sides and wide curb lanes. (Historic site).
FALLS ST BRIDGE	NA	General	44	25	Both sides	.08	2	7' wide sidewalks on both sides of bridge and wide curb alnes. Accomodates bicyclists and pedestrians. (Historic site)
ROADWAYS								0.00
BARTOSH LANE Foster - Nicole	NA - Local	General	29'-32'	25	Both sides	.11	1	North/south connector for large residential district and schools. (Hamilton Park and Rocky Branch Elem. School on south the side)
BARTOSH LANE Park - Nicole	NA - Local	General	36'	25	Both sides	.34	1 Washington to Nicole	Same as above. (Glen Park on north side).
CASCADE AVE Main - Wasson	8000 - 14580	Moderate truck traffic	42'	25	Both sides	1.01	2 Main to Oak Knoll; 1 Oak Knoll to Wasson	Major pedestrian crossing for many students and employees of the UWRF
CASCADE AVE Main - W End	2400	General	54'	25	Both sides	.15	0	Same as above. Connects to Falls Street Bridge and Glen Park swing bridge.

Table 4 - Urban Corridor Evaluations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic[1]	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Sidewalk (sides of street)	Remarks (Destination linkages)
Cemetery RD Emory - Corp Limits	2210	General	22' rural	25	Both sides	1.30	0	South side East/West connector. A primary corridor for Town of River Falls.
Cemetery RD Main - Emory	2210	General	36' urban	25	Both sides	.15	0	Same as above.
CLARK ST Cedar - Pine	NA - Local	General	35'	25	Both sides	.07	1	Important to complete trail development along Kinni. (Ingram Center)
CTH MM Main - Corp Limits	3000	General	22' rural	25	Both sides	.87	0	Regional connector, alternate to CTH M
DIVISION ST Jacqeline - Corp Limits	3300	General	22' rural	25	Both sides	.74	0	Division provides the only direct east west connector across the community. It also an extension of CTH M - a regional connector for bicyclists (River Falls Area Hospital)
DIVISION ST 2nd St - Jacqueline	4100 -3300	General	33'	25	Both sides	.75	1	Same as above. (River Falls High School and Hoffman Park on east side)
DIVISION ST Main st - Second St.	5300 - 7600	General	50'	25	Both sides	.07	2	The push button signal to cross Main Street is not accessible to bicyclists. (St. Bridget Parochial school)
DIVISION ST Main - CTH M	2290 - 3100	General	31'	25	Both sides	1.55	0	Narrow Rights of Way. Parking allowed west of Winter Street (Westdale Park, Westside Elementary)
EIGHTH ST Division - Maple	490	General	34'	25	Both sides	.32	1	North/South connector (River Falls H.S. and Greenwood Elem schools)
FOURTH ST Maple - Spring	NA - Local	General	33'	25	Both sides	.23	2	North/South connector - Division St to Cascade Ave (Mound Park)
FOURTH ST Division - Maple	NA - Local	General	39'	25	Both sides	.22	2	Same as above.

Table 4 - Urban Corridor Evaluations - River Falls Urbanized Area

TRAVEL CORRIDOR	**Average daily traffic**[1]	**Traffic mix**	**Total surface width**	**Speed Limit**	**On-street parking**	**Length of corridor**	**Sidewalk (sides of street)**	**Remarks** (Destination linkages)
GOLF VIEW DR Wasson - South Bend	NA - Local	General	32'	25	Both sides	.53	0	Grade separated intersection across STH 65
JEFFERSON ST End @ Wash. - Main	NA - Local	General	36'	25	Both sides	1.71	0	Connector to Rocky Branch school and Hamilton Park
N MAIN ST Division - STH 65	16810	Moderate Truck Traffic	48' 4 lane	25 - 35	None	.93	Varies	Primary travel corridor for commercial areas north of the downtown
N MAIN ST Cascade - Division	NA	Moderate truck traffic	32 w/o island, 80 w islands	25- 35	None outside CBD, 4 lanes in CBD	1.15	Varies	Primary travel corridor in downtown (Veterans Park)
S MAIN ST Cascade - Cemetery	12200 - 12600	Light truck traffic	40'	25	Both sides	.93	Varies	Connects southern residential districts to the central business district
MAPLE ST 6th - 8th	NA - Local	General	31'	25	Both sides	.12	2	East/West connector, signalized intersections
MAPLE ST 2nd - 6th	980	General	39'	25	Both sides	.25	2	East/West connector across the community
MAPLE ST Bridge - 2nd	3600 - 5000	General	53' - 56'	25	Both sides	.13	2	Same as above. (CBD)
MAPLE ST Winter - Bridge	3300	General	36' - 42'	25	Both sides	.40	2	Same as above.
PARK ST Main - Bartosh	NA - Local	General	35' - 37'	25	Both sides	.33	1 Main to G Park	Connector to Bartosh Ln and to Glen Park
PAULSON RD Main - STH 34	NA - Local	General	22' and 38' (12/16)	35	None	.44	1	Connector from Main St to new commercial district and residential developments

Table 4 - Urban Corridor Evaluations - River Falls Urbanized Area

TRAVEL CORRIDOR	**Average daily traffic**[1]	**Traffic mix**	**Total surface width**	**Speed Limit**	**On-street parking**	**Length of corridor**	**Sidewalk (sides of street)**	**Remarks** (Destination linkages)
QUARRY RD Main - East	NA - Local	General	22' -	25	Both sides	.46	0	Regional linkage. Used for recreational riding. Future crossing at Main St. to St Croix?
RIVERSIDE DR Paulson - CTH MM	NA - Local	General	22' - 24'	25	Both sides	.70	one side on new section	Scenic. Link from West side to new commercial district
SIXTH ST Spring - Cul-de-sac	1990	General	35' - 51'	25	Both sides	.14	2 and 1	UWRF connector
SORENSEN ST Cemetery - Kari	NA - Local	General	NA	25	One side	.14	0	Town and subdivision connector
SPRING ST Main - 8th	NA - Local	General	28'	25	Both sides	.40	1	Very narrow, one-way east bound beyond 3rd street
ST CROIX ST End - Pomeroy	NA - Local	General	37'	25	Both sides	.05	0	Should extend street through as a frontage road to N Main
ST CROIX ST Summit - CTH MM	NA - Local	General	36'	25	Both sides	.19	0	Frontage road to N Main
THIRD ST Division - Spring	NA - Local	General	41'	25	Both sides	.53	2	Alternate to 4th. Yield signs every block along route, wide ROW
WASSON LN (Boundary) Cascade - Cemetery	6730	General	Varies	25	Both sides	.72	0	3' shoulders. East side North/south connector (UWRF, high density housing area)
WASSON LN Division - Cudd	1900	General	32'	25	Both sides	.13	0	Trees in middle of where sidewalk should go. Narrow ROW
WASSON LN Cudd -- Cascade	1400 - 1900	General	36'	25	Both sides	.71	0	Same as above.
WINTER ST CTH MM - Pineridge	NA - Local	General	40'	25	Both sides	.22	0	Good North/South link on the west side of Kinni

Table 4 - Urban Corridor Evaluations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic[1]	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Sidewalk (sides of street)	Remarks (Destination linkages)
WINTER ST Pineridge - Spring	2600	General	31' - 35'	25	Both sides	.78	0	Same as above.
STH 35 Bypass Division -- Cemetery	NA	Moderate truck Traffic	NA	55	none	NA	None	Important north/south connector. ROW may be available for the development of a sidepath on one side.
OFF-STREET CORRIDORS								
East side of White Kinni from Falls St along shoreline, then along old RR bed and across the river	NA	NA	NA	NA	NA	.56	NA	Beneficial recreational and transportation connector in the center of the city.
Abandoned Railroad corridor from the City through the Town and then to Ellsworth	NA	NA	NA	NA	NA		NA	A local activists, is developing a proposal to complete this trail connection.
From STH 35 bypass Park-and-Ride to Quarry Rd.	NA	NA	NA	NA	NA	.14	NA	Will provide a needed linkage from the Park-and-Ride site into the city.
Troy St - Quarry Rd	NA	NA	NA	NA	NA	.22	NA	This path completes a portion of an alternate north/south corridor paralleling N Main St.
Along Kinnickinnic River from Division to Paulson Rd	NA	NA	NA	NA	NA	.87	NA	In private ownership. Provides perhaps the best option for north/south travel parallel to N Main St. Two options presented.
Glen Park south along Kinni to Birch Cliff	NA	NA	NA	NA	NA	1.40	NA	City may consider removing motor vehicle drive loop around Glen Park to dedicate existing road to bicyclists and pedestrians. A very scenic corridor.
Path from Cemetery Rd to Birch Cliff	NA	NA	NA	NA	NA	.61	NA	Connects southern suburban areas to Kinni River

Table 4 - Urban Corridor Evaluations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic[1]	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Sidewalk (sides of street)	Remarks (Destination linkages)
Along South Fork from the proposed UWRF trail system at S Wasson Ln to the East CPL.	NA	NA	NA	NA	NA	.18	NA	Connects western suburban areas to Kinni River
Mound Park Trail	NA	NA	NA	NA	NA	.78	NA	May be widened and extended along west
Path along STH 35 Bypass Division - Cemetery	NA	NA	NA	NA	NA	1.55	none	ROW exists to offset road at time of reconstruction to develop a path along this important N/S corridor.
RIVER FALLS TOWNSHIP ROADS AND COUNTY CORRIDORS	Average Daily Traffic[1]	Traffic Mix	Total Surface Width	Speed Limit	Percent yellow line	Length of corridor	Side path	Remarks
CTH E STH 35 - TPL	830	General rural	22'	55	**	3.2	none	
CTH F CTH FF - CTH M	1300	General rural	22'-24' (3' paved sldr)	55	**	2.54	none	Paved shoulders near Kinni State Park but in disrepair and not on both sides of the road.
CTH FF 1/2 mile E of QQ to new subdivision	340	General rural	20' 22' no shldr	35-45	40%	2.8	none	Connects the City and Town to the Kinnickinnic State Park
CTH FF all other locations	340	General rural	24' (3' paved shldr)	35	50%	2.7	none	Same as above. Heavy truck traffic from STH 29/35 bypass to gravel operation (1 mile)
CTH M CTH F - CPL	1400	Moderate truck traffic	24' (4' paved shldr)	55	15%	4.3	none	
HAPPY VALLEY RD STH 29 - Pleasant View Rd.	NA - Local	General rural	20' - 22'	35	50%	3.5	none	Connects to STH 29 side path, scenic corridor

IMPLEMENTATION PLAN

The recommendations in this plan are intended to be implemented by the year 2020. This implementation plan outlines development of facilities and policies that will enhance bicycling and walking activities throughout the city. Elements of the implementation plan include:

- Bicycle facilities plan
- Pedestrian facility recommendations
- Priority projects
- Funding strategies
- Maintenance of facilities
- Educational and enforcement policy recommendations for bicycling and walking
- Land-use planning recommendations
- Action Plan

BICYCLE FACILITIES PLAN

Recommendations to designate and improve existing travel corridors for bicycling have been determined using previously discussed primary and secondary planning considerations. Corridor improvements have been designated to improve levels of bicycle activity and help cyclists locate suitable facilities (See Appendix A for definitions and descriptions of bicycle facility types). The vision of this plan is to enhance bicycling as an attractive and viable mode of transportation and recreation. This plan recommends that a system of suitable bicycle facilities be implemented and designated by signing and/or mapping appropriate routes. For liability reasons, designated facilities should meet or exceed standard specifications within Wisconsin Bicycle Planning Guidelines, 1993 and AASHTO Guide for Developing Bicycle Facilities, 1990.

In this plan, facilities to accommodate the child cyclist are recommended on corridors that serve many youth. Likewise, provisions for experienced adult cyclist will be recommended on some arterial streets and regional corridors. Generally, however, design treatments for River Falls will focus on providing accommodation for the average adult cyclist. **Appendix B, Urban Corridor Facility Development Guidelines,** taken from the Wisconsin Bicycle Planning Guidelines, identifies urban design treatments for the average adult bicyclist, or Group B. The design treatments that will be proposed include on-street facilities such as bicycle lanes, wide curb lanes and shared roadways. Bicycle paths will be the designated off-street facility. Together these bicycle facilities are called "Bikeways" (see Appendix A for bikeway definitions). Recommendations will also be made for bicycle parking, signing, pavement markings and park-and-ride parking lots.

Bicycle Parking

Bicycle parking although often overlooked, is one of the most cost-effective means of enhancing bicycling. Secure parking is necessary for commuters and shoppers to consider bicycling as a viable travel mode. At most destinations in River Falls minimal or medium security bike racks are sufficient. However, schools, recreation areas, retail centers, and the downtown should provide highly visible, secure bicycle parking. At these locations bike racks should provide opportunities to lock the bike frame while securing the bike's position. The racks that are presently provided in the downtown are considered minimal security racks because it is difficult to lock a bicycle frame to these units using the common U-locks. Furthermore, the location of these racks in the central island is inconvenient and forces bicyclists to make unnecessary street crossings.

Planning implications derived from evaluation of bicycle parking facilities:

- ***The city should adopt, by ordinance, uniform bicycle parking requirements for new developments. The town should recommend similar bicycle parking requirements.***

- ***The bicycle parking units in the central islands of the downtown should be replaced or supplemented by medium security racks located on the business sides of the street. Three alternatives are recommended for the downtown:***

1. Modify existing parking meters with a small crossbar to allow medium security bike parking.
2. Seasonally replace motorvehicle parking stalls with bicycle racks.
3. Put bicycle racks on side streets or in bump-out sidewalks (See Pedestrian facility recommendations).

Signing

Only suitable designated bikeways should be signed as "bike routes." Segments of the proposed system that require improvements should not be designated with signs or mapping until improvements are complete. ***It is recommended that all of the bikeways in the River Falls urbanized area be mapped and signed according to state and federal highway standards.***

Signing systems for bicycle transportation include basic "route" signs, and pavement markings. The design, placement, operation and maintenance of these systems should be developed according to the Manual of Uniform Traffic Control Devises 1988 (MUTCD). Standard bicycle route markers should be used on all designated urban bikeways and designated shared facilities. ***The signing systems should incorporate information such as direction, location and distance.*** This information is often useful, particularly on bikeways that serve regional or visiting bicyclists. On the other hand, directional information may not be necessary on locally used travel corridors such as those within residential districts. Appendix G is taken from the MUTCD and shows scenarios for signing bicycle routes.

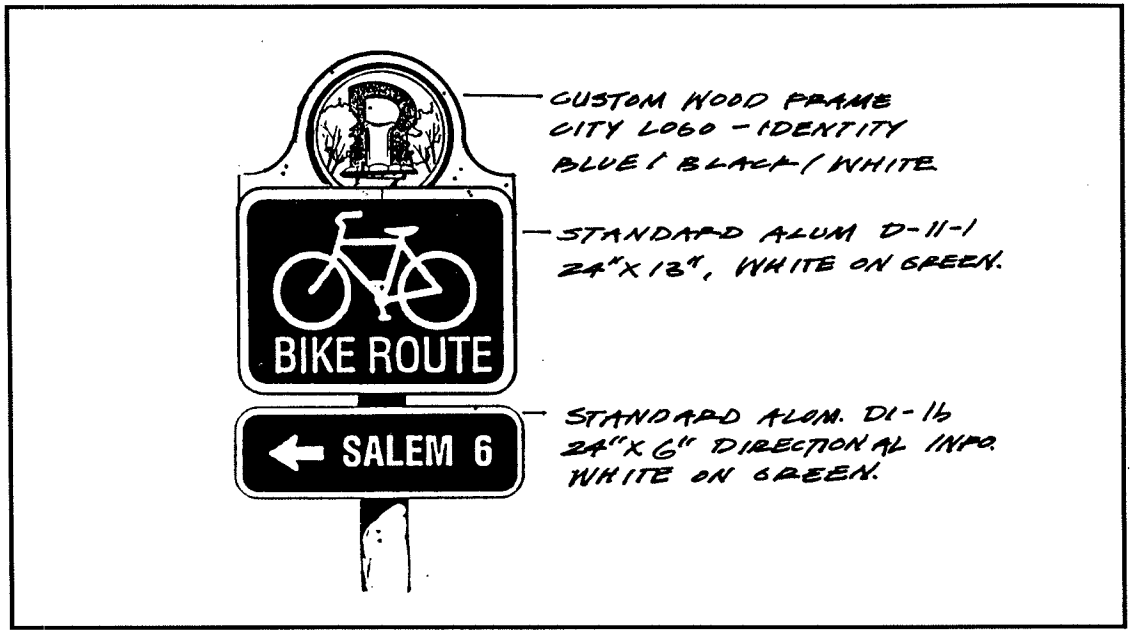

Figure 2. A design for River Falls bicycle route signing.

After a basic bikeway system is complete the City and the Town should work cooperatively to map the designated system. The *Bicycle Facilities Map* within this plan, pp 24, may be revised and used for publication and mapping. The Madison, Wisconsin *Bicycling Resource Guide & Route Map* provides a good example of a two-color published map that shows designated bike and pedestrian ways.

Pavement Markings

In addition to signs, appropriate pavement markings should be placed on bicycle lanes, paved shoulders and bicycle paths to designate restricted rights-of-way and to direct traffic movement. Pavement markings indicate restricted and shared rights-of-way and must be consistent with all traffic patterns. For example, at intersections with turn lanes, bike lane markings should accommodate both the turning vehicles and the bicyclists that will continue straight through the intersection. Bicycle lanes should have 2' clear zones (free of impediments) and should be outside of the parking space of motor vehicles. The following sources are useful for designing specific pavement marking systems:

- Manual of Uniform Traffic Control Devises (MUTCD)
- Wisconsin DOT Facilities Development Manual (FDM)

Park and Ride Locations

One of the best methods of encouraging bicycle use is to eliminate the conditions that currently discourage its use. Trip distance is one of those factors. Although bicycling is an efficient transportation mode for trips less than 5 miles, suburban and rural trips often exceed this distance. One method of increasing bicycling opportunities to people that travel greater distances is to use the bicycle in combination with other transportation modes (multi-modal transportation). This multi-modal concept relieves motor-vehicle traffic congestion and parking demands in areas that have concentrated use.

Public transit is often a component of the multi-modal concept; however, this mode of transportation is limited in River Falls and so plan recommendations will focus on methods to combine the car (or the *single occupant vehicle*) and the bicycle. The objective of car/bike transportation is to get the suburban motorist to park the car at a location at the edge of the community within bicycling distance of the intended destination and located close to bicycle routes. The parking lots of recreational destinations (city parks) often provide these opportunities because parking demand is often low at these locations during peak travel times.

The park-and-ride parking lot that is located at the north side of River Falls and along STH 35 is designed to accommodate carpooling motorist travelling to the Twin Cities and exterior parking for incoming commuters. This facility currently does not function to its full potential because bicycle and pedestrian connections into the community are absent. Furthermore, the distance to the UWRF commuting population and the Town of River Falls is undesirable.

Planning implications derived from evaluation of park-and-ride related issues are:

- ***The commuter use in the southern region of River Falls warrants a Park-and Ride facility. Perhaps this parking area could be developed at the time of the development of the UWRF trail system. The corner of Wasson Lane and Cemetery Road is a possible location.***

- ***"Park-and-Ride" or "Park-and-Bike" signs should be placed at street intersections near existing and proposed locations to encourage multi-modal transportation options.***

Bicycle Facilities Map

Bicycle facilities are recommended in this plan to provide a safe and attractive bicycling system throughout River Falls. The recommended facilities represent the plan's goals and objectives and were selected as a result of the analysis previously outlined. Recommendations for "Future and Alternate Bikeways" are also provided to aid in future planning efforts. Subsequent plan revisions and evaluations should follow every five years according to the criteria set forth in this plan.

It is the recommendation of this report that the bicycle transportation facilities and policies plan be implemented by year 2010 as a component of State, County, Town and municipal transportation activities.

The bicycle facilities map shown on the following page fulfills the objective of providing a bikeway within a 2 minute's ride of all city homes. The system includes both on-street and off-street facility recommendations. The spine of the off-street paths follows the Kinnickinnic River through the city. Other paths that will feed into this system include the internal path system being constructed by the UWRF in 1996 and the path along the abandoned railroad line to Ellsworth that has been proposed by a local activist. Paths from southside subdivisions will also help to complete this system.

The arterials of the on-street bicycle system are Division Street running east/west and Main

Street, the primary north/south connection. The secondary system of on-street bikeways includes Winter Street, Wasson Lane, Maple Street, Bartosh Lane, 4th Street, 8th Street and several others. All other residential streets will connect to this bikeway system, but only minimal accommodations will be provided on these local streets such as bicycle safe drainage grates.

See the Bicycle Facilities Map and corresponding Table 5 for more detailed information regarding proposed facilities.

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

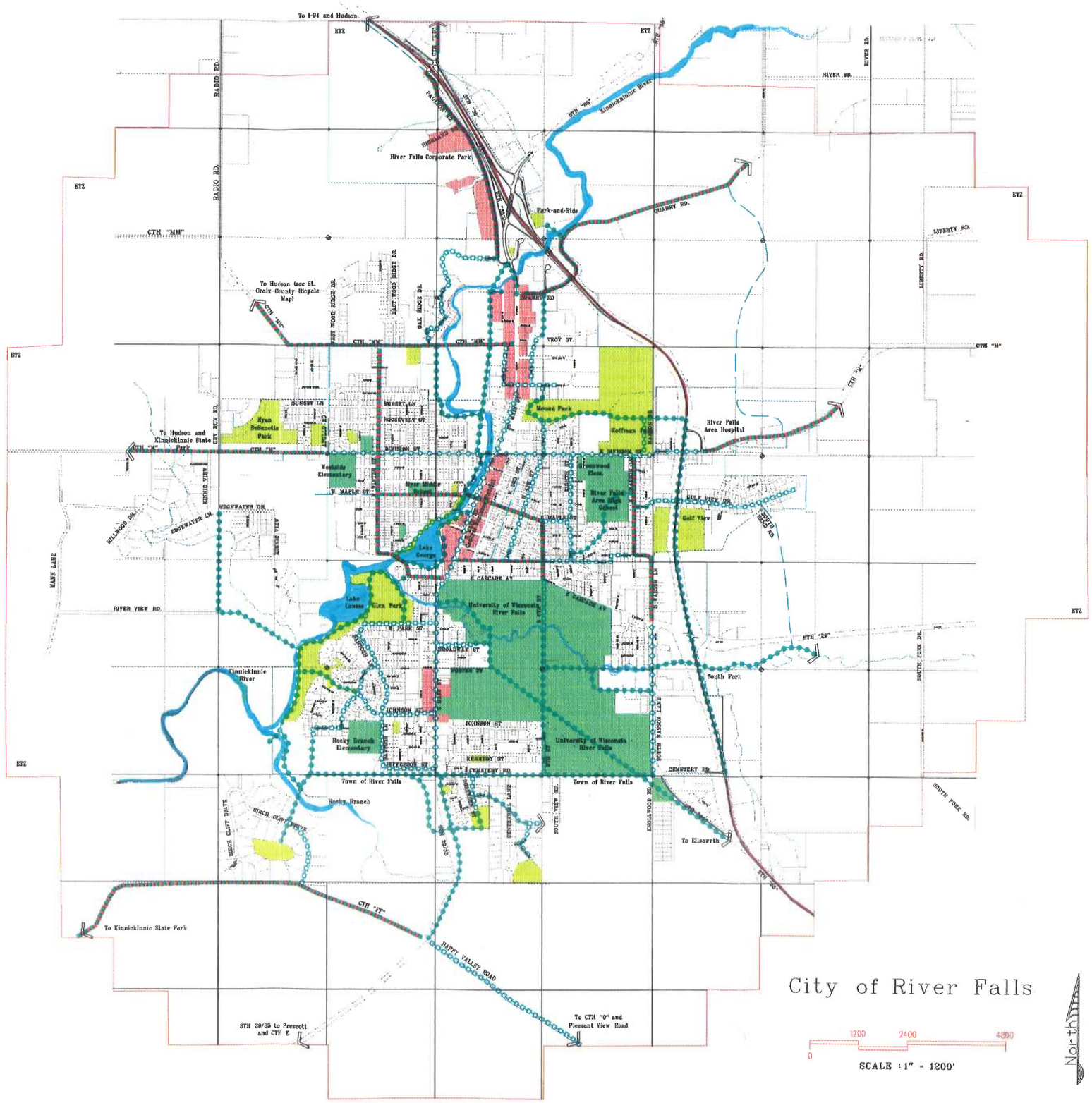

Table 5 - Urban Corridor Recommendations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Recommended bicycle facilities/ Improvements	Improvement costs per mile (Dollars)*	Estimated cost of improvement (Dollars)
BRIDGES									
CTH MM ST BRIDGE	NA	Light to Moderate Truck Traffic	36	30	Both sides	0.02	SHARED ROADWAY Sign	--	500
DIVISION ST BRIDGE	NA	Light to moderate truck traffic	44	25	Both sides	0.04	EXISTING WIDE CURB LANE Sign	--	500
MAPLE ST BRIDGE	NA	General	36	25	Both sides	0.04	EXISTING WIDE CURB LANE Sign	--	500
FALLS ST BRIDGE	NA	General	44	25	Both sides	0.08	EXISTING WIDE CURB LANE Sign	--	500
ROADWAYS									0.00
BARTOSH LANE Foster - Nicole	NA - Local	General	29'-32'	25	Both sides	0.11	SHARED ROADWAY Sign	2,500	275.00
BARTOSH LANE Park - Nicole	NA - Local	General	36'	25	Both sides	0.34	SHARED ROADWAY Sign	2,500	850.00
CASCADE AVE Main - Wasson	6,580	Moderate truck traffic	42'	25	Both sides	1.01	Pedestrian crossing improvements at 6th Street	LS	5,000

Table 5 - Urban Corridor Recommendations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Recommended bicycle facilities/ Improvements	Improvement costs per mile (Dollars)*	Estimated cost of improvement (Dollars)
CASCADE AVE Main - W End	2,400	General	54'	25	Both sides	1.01	None	0	0.00
Cemetery RD Emory - Corp Limits	2,210	General	22' rural	25	Both sides	1.3	SIDE PATH OR PAVED SHOULDERS Sign	See River Falls 1996 SMIP application	238,650
Cemetery RD Main - Emory	2,210	General	36' urban	25	Both sides	0.14	SIDE PATH OR SHARED ROADWAY	See River Falls 1997 ISTEA application	Same as above.
CLARK ST Cedar - Pine	NA - Local	General	35'	25	Both sides	0.07	SHARED ROADWAY Sign	2,500	175.00
CTH MM Main - Corp Limits	3,000	General	22' rural	25	Both sides	0.87	PAVED SHOULDERS Sign	22,500	19,575.00
DIVISION ST Jacqeline - Corp Limits	3,300	General	22' rural	25	Both sides	0.74	PAVED SHOULDERS and sidewalk to the Hospital, sign	22,500 w/o sidewalk	16,650.00
DIVISION ST 2nd St - Jacqueline	800	General	33'	25	Both sides	0.75	WIDE CURB LANES, remove parking, restripe and sign	7,500	5,625.00
DIVISION ST Main st - Second St.	2,300	General	50'	25	Both sides	0.07	WIDE CURB LANES, widen at time of reconstruction	75,000	5,250.00

Table 5 - Urban Corridor Recommendations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Recommended bicycle facilities/ Improvements	Improvement costs per mile (Dollars)*	Estimated cost of improvement (Dollars)
DIVISION ST Main - CTH M	810	General	31'	25	Both sides	1.55	WIDE CURB LANES, remove parking, restripe and sign	7,500	11,625.00
EIGHTH ST Division - Maple	490	General	34'	25	Both sides	0.32	SHARED ROADWAY Sign	2,500	800.00
FOURTH ST Maple - Spring	NA - Local	General	33'	25	Both sides	0.23	SHARED ROADWAY Sign	2,500	575.00
FOURTH ST Division - Pine	NA - Local	General	39'	25	Both sides	0.22	SHARED ROADWAY Sign	2,500	550.00
GOLF VIEW DR Wasson - South Bend	NA - Local	General	32'	25	Both sides	0.53	SHARED ROADWAY Sign	2,500	1,325.00
JEFFERSON ST End @ Wash. - Main	NA - Local	General	36'	25	Both sides	1.71	SHARED ROADWAY Sign	2,500	4,275.00
N MAIN ST Division - STH 65	16,810	Moderate truck traffic	48' w/o island 80' w/ island	25-35	Varies	0.93	ALTERNATE TO OFF-STREET PATH ALONG KINNI	50,000	46,500.00
N MAIN ST Cascade - Division	16,810	General	Varies	25	Both sides	1.15	BICYCLE LANES, Stripe and sign	7,500	8,625.00
S MAIN ST Cascade - Cemetery	400	General	40'	25	Both sides	0.93	BICYCLE LANES, remove parking, stripe and sign	7,500	6,975.00

Table 5 - Urban Corridor Recommendations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Recommended bicycle facilities/ Improvements	Improvement costs per mile (Dollars)*	Estimated cost of improvement (Dollars)
MAPLE ST 6th - 8th	NA - Local	General	31'	25	Both sides	0.12	SHARED ROADWAY Sign	2,500	300.00
MAPLE ST 2nd - 6th	980	General	39'	25	Both sides	0.25	SHARED ROADWAY Sign	2,500	625.00
MAPLE ST Bridge - 2nd	1,400	General	53' - 56'	25	Both sides	0.13	WIDE CURB LANES, restripe and sign	7,500	975.00
MAPLE ST Winter - Bridge	3,300	General	36' - 42'	25	Both sides	0.4	WIDE CURB LANES, remove one side parking, restripe and sign	7,500	3,000.00
PARK ST Main - Bartosh	NA - Local	General	35' - 37'	25	Both sides	0.33	SHARED ROADWAY Sign	2,500	825.00
PAULSON RD Main - STH 34	NA - Local	General	22' and 38' (12/16)	35	None	0.44	SHARED ROADWAY Sign	2,500	1,100.00
QUARRY RD Main - East	NA - Local	Moderate truck traffic	22' (rural)- 36' (urban)	25	Both sides	0.46	SHARED ROADWAY Sign	2,500	1,150.00
RIVERSIDE DR Paulson - CTH MM	NA - Local	General	22' -	25	Both sides	0.7	SHARED ROADWAY Sign	2,500	1,750.00

Table 5 - Urban Corridor Recommendations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Recommended bicycle facilities/ Improvements	Improvement costs per mile (Dollars)*	Estimated cost of improvement (Dollars)
SIXTH ST Maple - Cul-de-sac @ UWRF	1,990	General	35' - 51'	25	Both sides	0,14	WIDE CURB LANES, remove one side parking or widen to 44', sign	7,500	105,000.00
SORENSEN ST Cemetery - Kari	NA - Local	General		25	One side	0.14	SHARED ROADWAY Sign	2,500	350.00
SPRING ST Main - 8th	NA - Local	General	28'	25	Both sides	0.4	SHARED ROADWAY Remove north side parking and stripe a restricted bike lane west bound	7,500	3,000.00
ST CROIX ST End - Pomeroy	NA - Local	General	37'	25	Both sides	0.05	ALTERNATE SHARED ROADWAY	--	0.00
ST CROIX ST Summit - CTH MM	NA - Local	General	36'	25	Both sides	0.19	ALTERNATE SHARED ROADWAY	--	0.00
THIRD ST Division - Spring	NA - Local	General	41'	25	Both sides	0.53	ALTERNATE SHARED ROADWAY alternate to 4th	--	0.00
WASSON LN (Boundary) Cascade - Cemetery	6,730	General		25	Both sides	0.72	WIDE CURB LANES / PAVED SHOULDERS Sign	22,500	16,200.00

Table 5 - Urban Corridor Recommendations - River Falls Urbanized Area

TRAVEL CORRIDOR	Average daily traffic	Traffic mix	Total surface width	Speed Limit	On-street parking	Length of corridor	Recommended bicycle facilities/ Improvements	Improvement costs per mile (Dollars)*	Estimated cost of improvement (Dollars)
WASSON LN Division - Cudd	1,900	General	32'	25	Both sides	0.13	WIDE CURB LANES, widen to 38' with one side parking and shift road alignment to allow for one side sidewalk	77,500 w/o sidewalk	10,075.00
WASSON LN Cudd -- Cascade	500	General	36'	25	Both sides	0.71	WIDE CURB LANES, remove one side parking, restripe and sign. Also construct one side sidewalk	7,500 w/o sidewalk	5,325.00
WINTER ST CTH MM - Pineridge	NA - Local	General	40'	25	Both sides	0.22	SHARED ROADWAY Sign	2,500	550.00
WINTER ST Pineridge - Spring	2,600	General	31' - 35'	25	Both sides	0.78	WIDE CURB LANES, remove one side parking, restripe and sign	7,500	5,850.00

OFF-STREET PATHS

Bicycle paths are proposed for all off-street corridors shown in Table 4. The cost of these facilities will vary greatly depending on topography, land acquisitions and design. In general, costs will range from $40,000 per mile to over $250,000 per mile. All bicycle paths should be two-way and therefore a minimum of 8' wide. See Appendix A for more information on bicycle path design criteria.

RIVER FALLS TOWNSHIP ROADS AND COUNTY CORRIDORS	Average Daily Traffic	Traffic Mix	Total Surface Width	Speed Limit	Percent yellow line	Length of corridor	Recommended bicycle facilities/ Improvements	Improvements cost per mile	Estimated cost of improvement
CTH E STH 29 - South	830	General rural	22'	55	**	NA	PAVED SHOULDERS Sign	$22,500.00	0.00
CTH F Entire	1300	General rural	22'-24' (3' paved sldr)	55	**	NA	PAVED SHOULDERS Sign	$22,500.00	0.00
CTH FF 1/2 mile E of QQ to new subdivision	340	General rural	20' 22' no shldr	35-45	40%	2.80	PAVED SHOULDERS Encourage county to pave shoulders	$22,500.00	63,000.00
CTH FF all other locations	340	General rural	24' (3' paved shldr)	35	50%	4.50	EXISTING PAVED SHOULDERS	$0.00	0.00
CTH M CPL - CTH F	1400	General rural	24' (4' paved shldr)	55	15%	4.30	EXISTING PAVED SHOULDERS Sign	$2,500.00	10,750.00
HAPPY VALLEY RD STH 29 - Pleasant View Rd	NA - Town RF	General rural	20' - 22'	35	50%	3.50	SHARED ROADWAY Provide 3' grvl shlds, sign	$5,500.00	19,250.00
PLEASANT VIEW RD Happy Valley Rd - CTH E	NA	General rural	20'	55	20% - 25%	3.30	SHARED ROADWAY Widen to 22' with 3'grvl shlds, sign	$12,500.00	41,250.00
STH 29 Side path	NA	Bike/ped	6'	20	**	1.10	BICYCLE PATH widen to 8', sign	$22,500.00	24,750.00

PEDESTRIAN FACILITY RECOMMENDATIONS

River Falls must provide its citizens with a safe pedestrian environment. As mentioned previously in this report, existing infrastructure in River Falls provides reasonable accommodation for pedestrians; however better facilities will help to mitigate some pedestrian/motor vehicle conflicts and generate increased pedestrian activity. Facilities contributing to the safety of pedestrians throughout River Falls include:

- Sidewalks: Types of sidewalks, width, surface, location and design.
- Street Crossings: Curb ramps, crosswalks, overpasses and signals.
- Street Furnishings: Lighting, seating and resting areas.

Sidewalks

Pedestrians who walk on the side of a street are endangered by motorists, particularly at night. This situation is one of the ten leading causes of fatal pedestrian accidents nationally. Pedestrians are forced into this hazardous situation when sidewalks or wide shoulders are unavailable to them.

Consistent subdivision ordinances are needed to ensure pedestrian facilities are planned into the initial infrastructure of large developments. Appendix D. Guidelines for Installing Sidewalks, was taken from Walk Alert: The National Pedestrian Safety Program Guide[7] and provides an example of guidelines for sidewalk provisions that could be used for River Falls.

Sidewalks are critical on urban arterial streets and collector streets, particularly those that serve schools, commercial districts, park and recreation sites, high density residential areas, and bus routes. River Fall lacks sidewalks to some of these urban destinations but has begun to retrofit sidewalks according to a "Five Year Sidewalk Improvements Plan".

Uniform sidewalk design criteria should be established for the city. Sidewalk width, curb ramp placement and surface materials should be consistent. Although six foot wide sidewalks are sufficient in many residential and industrial districts, additional widths should be considered near school zones, retail centers and recreational destinations. Furthermore, in areas with high pedestrian and motor vehicle traffic additional safety design treatments should be considered. The "Bump-out" or "Bulb-out" is one example of a sidewalk design that improves the safety of pedestrian by increasing driver visibility of street crossing pedestrians. Bump-out sidewalks are often developed at intersections and mid block pedestrian crossing locations that may have a high potential for pedestrian/vehicle conflicts. These sidewalks extend the width from the building face to the edge of curb lane (as seen in figure 10) and therefore, put the crossing pedestrian in a position free of visual obstructions. Bump-outs also:

- Effectively shorten the length of the crossing and therefore aid children and elderly walkers.
- Calm traffic by reducing curve radii and curb lane width.
- Control the location of parallel vehicular parking that often impedes sight-lines at intersection corners.

Although bump-outs can complicate drainage and snow removal they have been employed successfully and with little complications in Minnesota communities such as Minneapolis, and Duluth and in Wisconsin, Wausau and Kenosha

A consistent and uniform sidewalk design should accentuate the downtown streetscape. in this regard, bump-outs should be developed at all downtown Main Street intersections. However, field observation and accident data show that the intersection of Walnut Street and Maple Street would benefit most from increased safety measures.

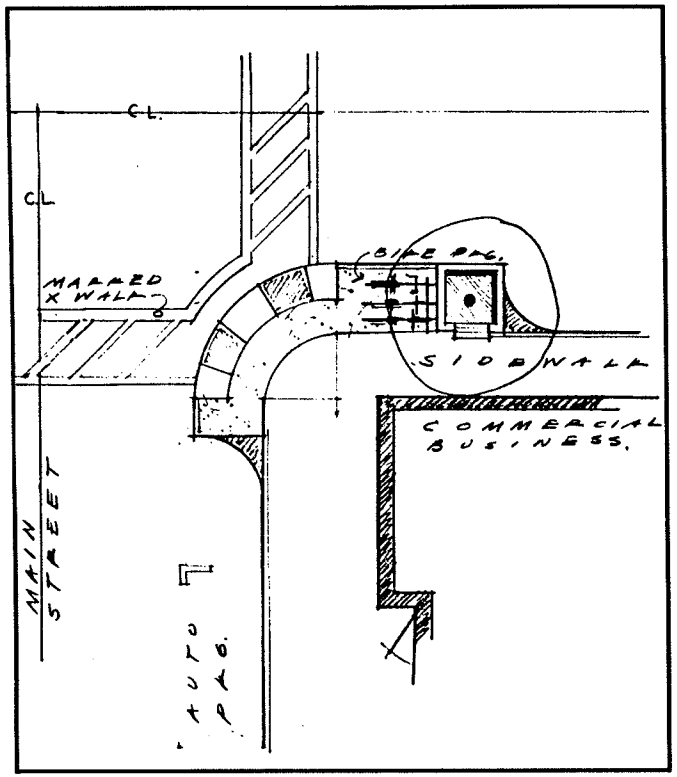

Figure 3. Plan view of typical bump-out sidewalk.

Subdivisions in the Town of River Falls generally lack sidewalks. The dispersed nature of the developments and the distances to destinations makes implementation of pedestrian facilities financially less feasible; however, pedestrian accommodations should be provided. Several cost effective methods of providing pedestrian accommodations include:

- Paved or gravel shoulders and/or sidewalks on arterial and collector streets.
- Provide path connectors linking cul de sacs or other isolated development patterns.

Planning implications from evaluation of sidewalk facilities include:

- ***Pedestrian activity in the downtown and along Cascade Avenue near the UWRF campus warrants the implementation of pedestrian safety facilities such as bump-outs. Although the downtown has bump-out sidewalks on the central islands along Main Street pedestrian crossing safety would be improved by bump-outs at intersection on the business sides of the street. These features would also allow additional space for pedestrian amenities such as benches, trash receptacles and community information kiosks. Accident data and field observations show that the intersections of Walnut Street and Main Street, and Maple Street and Main Street have the greatest need for additional safety improvements.***

- ***Sidewalks are often unfeasible in rural towns and counties because of dispersed land uses. In suburban areas of the River Falls Township where sidewalks are not provided paved and gravel shoulders should be located to help pedestrians travel safely. Shoulders should be a minimum of 4' wide, and mailboxes and other impediments should be set back at least 2 feet from the edge of shoulders.***

Street Crossings

Marked crosswalks, ramps and signals are important safety facilities at intersections, and occasionally mid-block street crossing locations. To maintain their effectiveness these features should be used discriminately at locations that have a potential for pedestrian/vehicular conflicts. Marked crosswalks should be located where pedestrians are highly visible and provide adequate stopping distances for motor vehicles. In general, marked crosswalks should be located:

- At all intersections with pedestrian signals
- At school crossings
- At or near locations with high volumes of pedestrian crossings

Traffic crosswalks and signals should conform to the Manual of Uniform Traffic Control Devises and WisDOT Facility Development Manual. Marked crossings should provide visual and textural cues to denote crossing locations. Install parallel striped (Ladder-type) or diagonal striped (Zebra) crossings to enhance color contrast at the most popular crossing locations. In

cases where pedestrian crossings are viewed as highly unsafe (such as crossing some principal arterial streets) overpasses or special traffic signals may be needed to accommodate pedestrians.

The areas around the UWRF campus are most in need of a reevaluation of crossing facilities and locations. It is noted that although pedestrian safety is of the highest priority along Cascade Avenue, motor-vehicle flow is also a consideration because of the street's classification as part of STH 29. Currently, the following marked crossing are found on Cascade Avenue:

- Oak Street - Both sides.
- Spruce Street - None
- 3rd Street - Both sides
- 4th Street - Flashing yellow signal light and marked crossings on East side
- 5th Street - None
- 6th Street - East side

Accident data shows that several pedestrian/motor vehicle conflicts have taken place at the intersection of Cascade Avenue/6th Street. Field observations suggest that the large-radius, free-flow right turn on the NE corner may be contributing to these accidents. Free-flow, right turn intersections and intersections with large curb radii are particular problems for crossing pedestrians because they allow higher speed turning movements for motorists. This condition is evident at the intersection of 6th Street and Cascade Avenue and should be mitigated.

Pedestrians that are most at risk of being involved in street crossing accidents are children, older adults and people with disabilities. Engineering techniques that will contribute to the safety of these pedestrians include:

- Create special crossings at streets with a high potential for pedestrian and motor vehicle conflicts. High contrast markers, textural clues and safety islands may be useful.
- Reduce crossing length with bump-out sidewalks.
- Change signals to increase crossing time: Typically, 12-14 seconds is sufficient to cross a two lane road (assuming an 40 foot road width and an average walking speed of 4 feet per second), however older adults and people with disabilities may require 16-18 seconds.

Planning implications from evaluation of street crossing facilities:

- ***River Falls should limit use of free-flow right turns and large radius turns at intersections, particularly around school zones and in downtowns.***
- ***The radius of the NE corner of 6th and Cascade Avenue should be reduced and crossing pavement markers relocated closer to the intersection.***
- ***The intersection of Johnson Street and S Main Street is used by many neighborhood children. Orange cones should be placed within the crossing by crossing gaurds.***
- ***The pedestrian crossing distances at the newly constructed intersection of Main Street and Cascade Avenue are long and difficult to cross with turning motor vehicular traffic - particularly for the very young and older pedestrians. All way red stop signals should be evaluated at this location.***

Street Furnishings

Lighting, benches, trash receptacles, trees, information kiosks and other street furnishings can improve the security and convenience of pedestrians. Creating rest locations and places to enjoy aesthetic features of the community will help to create a pleasant pedestrian environment. The design of these elements should reflect the context of the neighborhood or region and should be located away from intersections and other important sightliness. Site furnishings should provide a sense of order and continuity to the travel corridor and should not interfere with pedestrian traffic. Pocket parks like the Veterans Park and extended bump-outs along side streets can

provide the needed space for these amenities.

Pedestrian activity and circulation is particularly important to the two distinct types of commercial areas in River Falls. The Downtown Business District, in the tradition of Main Street America, is compact, with storefronts located next to sidewalks and zero-lot-lines. Wide sidewalks, high densities, pocket parks, and canopy trees are among the design features that lend to the attractiveness of this environment to pedestrian shoppers. By contrast, the retail zones on the north and south ends of Main Street are linearly dispersed with buildings setback from the street and separated by parking lots. Store-to-store shopping distances are not convenient and frequent drive entries reduce pedestrian safety by increasing potential conflicts with motor vehicles. Recommended activities to improve the comfort and safety of pedestrians in these newer retail regions include:

- Consolidating utilities and signage to improve sightlines.
- Provide canopy trees and other vegetative treatments between parking lots and sidewalks (to maintain good sightlines trees should not be placed in the terrace between the street and sidewalk near intersections).
- Provide strong pedestrian oriented corridors along streets perpendicular to Main Street.
- Limit vehicular drive entries onto Main Street by requiring shared entries and parking lots.
- Develop occasional landscaped seating areas along sidewalk for the comfort of pedestrians.
- Require sidewalks on all streets in commercial zones.

PLAN PRIORITIES

Implementation priorities were established for River Falls after considering the factors that affect walking and bicycling safety and facility costs. The first priority was given to facilities that would mitigate existing safety problems, and facilities that would provide the most immediate benefit. The City Planning Department and Bicycle and Pedestrian Trails Ad Hoc Committee established the following general order of priorities:

1. Mitigate immediate safety problems.
2. Support the established "Five Year Sidewalk Improvements Plan".
3. Provide minor improvements and bikeway signing on streets that are considered suitable for bicycling.
4. Expand the White Kinni Trail System and capture opportunities to acquire additional linear open spaces.
5. Provide *Wide Curb Lanes* and *Bicycle Lanes* on arterial and collector streets by removing one or both side parking or by widening the street at the time of reconstruction.
6. Provide site furnishing and pedestrian amenities in the retail zones.

Priorities also include new street construction improvements projects and cost effective facilities improvements such as bicycle parking. These general priorities were applied to the projects recommended throughout this plan for the development of a five year Capital Improvements Program (CIP). The following CIP table is developed as a supplement to the existing five year sidewalk improvements plan that has already been approved by the city. Projects for the city of River Falls and the Town of River Falls are included in this CIP.

Table 6 - Bicycle and Pedestrian Capital Improvements Plan		
Year	***Proposed Projects***	***Estimated Cost***
1995	Begin Design of the Cemetery Road Project.	$12,900 (see SMIP application, 1996)
	Establish full funding for existing "Five Year Sidewalk Improvements Plan".	$50,000 annually to complete established yearly projects.
1996	Complete and construct the sign system design and install signs on all designated ***shared roadways.***	Design development and construction documents: $1,500 Construction and installation: 6.75 miles @ $2,500/M = $16,875
	Provide 5 bike racks, eight bikes each, in the downtown near intersections of side streets like Walnut Street, Maple Street and Pine Street, and/or in motor vehicle parking stalls (See bicycle parking facilities).	5 @ $600 installed = $3,000
	Prepare designs for completion of the White Kinni Trail around Lake George.	Est. $12,000
	Complete Cemetery Rd. Project: Federal SMIP funds may provide $190,920 towards project.	$225,750
	Provide bicycle lanes on Main Street from Division St. south to Cemetery Rd.	$15,600
	Encourage completion of paved shoulders along CTH FF. The Town of River Falls should facilitate this construction through the County.	Time and administration
1997	Construct White Kinni Trail around Lake George. Possible source of funding: ADLP, LAWCON, SMIP "Enhancements Program" 1997	.56 miles @ 300,000/M with lighting plus $40,000 for bridge $208,000

1997	Remove parking from Division Street, restripe appropriate areas and provide bicycle signing This work should include the completion of bicycle and pedestrian connections to the Hospital.	$22,000
	Town: Widen existing path along STH 29 to meet AASHTO guidelines and sign. Add 5' to asphalt surface. Possible source of funding: SMIP 1998	$24,750
1998	Design and construct path and bridge from the existing park-and-ride parking lot to Quarry Road and remove parking from the urban section of Quarry Road. Possible source of funding: WisDNR Stewardship Funds.	$50,000 for bridge plus .14 mile @ $100,000 plus $1,000 for signs = $65,000
	Provide shoulder on CTH MM, remove all parking and sign for bikeway	$20,000
	Town: Provide signs and shoulder improvements on Happy Valley Road. Possible source of funding: SMIP "Discretionary Program" 1999	3.5 miles @ $5,500/m = $19,250
	Facilitate the WisDOT intersection reconstruction at Cascade Ave. and 6th S., provide pedestrian crossing pavement markings and other pedestrian improvements.	$5,000 pavement markings
1999	Provide 8' sidepath along N Main Street from Division St to Summit St. Possible source of funds: SMIP "Discretionary Program" 2000.	.6 miles @ $100,000/M $60,000
	Provide asphalt path from Troy Street to Quarry Rd, sign Troy Street, Summit Street and new path. Possible source of funding SMIP 2000	.22 miles @ $150,000/mile plus $3,000 for signs = $36,000
	Town: Provide signs, widen road and provide gravel shoulders on Pleasant View Road.	3.3 miles @ $12,500/m = $41,250

WisDNR Stewardship Funding may be available for the completion of the White Kinni Trail and the proposed path from the park-and-ride across the Kinnickinnic River. The most likely source of funding for other projects in the C.I.P. is the WisDOT (see appendix H)

FUNDING STRATEGIES

The city of River Falls, the UWRF and surrounding towns and counties should appropriate annual funds for bicycle and pedestrian improvements, just as they do for other roadway projects. In addition to Capital Improvements Program established here (Table 6), special projects may be eligible for state or federal funding.

As part of the state and federal initiatives to enhance bicycle and pedestrian transportation modes several grants and funding sources are available to River Falls for planning, facility development and land acquisition. Although some grants may be available for improving on-street facilities, opportunities to fund off-street facilities (such as bicycle paths) are substantial - particularly if the facility is intended to provide both utilitarian and recreational benefits (See Appendix A for a complete discussion of "Grants and Aids Opportunities").

The Federal ISTEA Program has helped fund many bicycle and pedestrian transportation activities throughout the United States. Similarly, Wisconsin has approved the funding of many community projects. A Wisconsin component of ISTEA, the State-wide Multi-modal Improvements Program (SMIP) is intended to encourage multi-modal projects that are "up and beyond" the current transportation activities. In 1996, Wisconsin appropriated its last projects for the existing Federal ISTEA program. Future funding will depend on a new federal act or similar state appropriations.

One objective of this plan is to consider facilities that have overlapping recreation and transportation value. For these recommended bicycle and pedestrian improvements the Wisconsin Department of Natural Resources' Stewardship Program may be an appropriate source of funding. These are typically 50/50 matching funds programs. The White Kinni Trail extension and other paths along the Kinnickinnic and its tributaries are examples of projects that may use WisDNR stewardship funds.

Alternate funding strategies through private interests should also be considered. Local private interests will benefit from an improved transportation system that offers transportation choices. Private agencies that share River Falls's vision for a bicycle and pedestrian system may be willing to invest in development or maintenance of facilities. Special business tax districts such as Business Incremental Districts (BIDs) and Tax Incremental Finance Districts (TIFs) may provide support funds for non-motorized transportation improvements. Furthermore large local employers may individually provide financial or assistance.

Planning implications derived from evaluation of funding strategies include:

An entity within the City should be assigned to annually review the availability of bicycle and pedestrian funding sources. It is recommended that a special committee be established to review multi-modal transportation funding opportunities (see policy recommendations).

References

1. Wisconsin Department of Transportation, TransLinks 21 Newsletter. February 1995

2. Growth estimates were derived from the July 1987, River Falls Master Plan Report, A Policy Guide for Growth, pp 27. More accurate estimates may be determined from the revised Master Plan currently being prepared by the City.

3. The National Bicycling and Walking Study: Transportation Choices for a Changing America indicates that 21.6% of all daily trips are for the purpose of "earning a living".

4. Average statewide costs of bicycle facilities compiled by Wisconsin State Bicycle Coordinator, 1994.

5. Dietrich, Norman L., (1993). Kerr's Cost Data for Landscape Construction: Unit Prices for Site Development, 12th Edition: Van Nostrand Reinhold, New York.

6. Federal Highway Administration, National Advisory Committee on Uniform Traffic Control Devices (1988). Manual of Uniform Traffic Control Devises, Washington D.C.: U.S. Government Printing Office.

7. Federal Highway Administration, National Traffic Safety Administration, and the American Automobile Association (1994). Walk Alert: The National Pedestrian
Safety Program Guide: National Highway Traffic Safety Administration, Washington D.C.

OPERATIONAL RECOMMENDATIONS

The development of facilities as outlined above is only one component of enhancing bicycling and walking. Operational procedures such as education, maintenance of facilities, enforcement of vehicle codes, land use planning and promotional activities are critical for elevating the level of safety and convenience of bicyclists and pedestrians.

EDUCATION AND ENFORCEMENT

Bicycle and pedestrian safety should be the highest multi-modal transportation priority for River Falls. Although the improvement of facilities is one means toward this end, education and enforcement are perhaps the most effective safety measures. The following recommendations outline bicycle and pedestrian educational procedures.

Bicycling Education and Enforcement of Vehicle Codes

Bicycles are unique and efficient vehicles that can be operated safely in a variety of conditions. An experienced bicyclist is capable of interacting safely with pedestrians, other bicycles and motor vehicles; on arterial highways and over rough terrain.

How are the skills that are needed to operate a bicycle in varied conditions learned? The rules of the road that apply to bicyclist, the same as motorists, can be learned through basic drivers education courses. However, these courses are not prerequisites for bicycling nor do these courses typically teach skills that are unique to operating a bicycle. Aptitude for interacting with other vehicles and pedestrians is assumed to be learned through experiences derived from operating other vehicles or from experiences gained on the bicycle. However, experience is <u>not</u> the best teacher for bicycling because safety of the operator is in jeopardy. Furthermore, simply knowing how to operate a motor vehicle neglects the unique characteristics of effective bicycling. Indeed, the lack of uniform, mandatory education procedures compromises bicycling safety as well as opportunities to promote bicycle transportation.

It is the recommendation of this plan that safety programs for River Falls should focus on the following groups:

- Child bicyclist
- Average adult bicyclist
- Motor vehicle operator

Educating Child Bicyclists

Bicycling and walking are the primary means of getting around for children. The child cyclist is most responsive to learning, but also has several unique characteristics that complicate education initiatives. For example, child cyclists do not typically know the rules of the road under which they need to operate. Furthermore, children under the age of ten have limited peripheral vision and ability to judge speeds and distances. Educational programs need to recognize these characteristics of child bicyclist.

School based educational programs are perhaps the most effective means of increasing a child's cycling abilities[1]. Hands-on training curriculums designed for elementary school students such as *The Basics of Bicycling* developed by Bicycle Federation of America are typically aimed at fourth and fifth grade students and are designed to teach basic bicycling skills.

School based educational curriculums are not consistently offered in River Falls schools. These programs are generally recognized as highly effective for elementary aged students, and therefore, River Falls should encourage schools to instate bicycle and pedestrian educational programs for the 4th and/or 5th grades.

Although area schools do not currently offer standard bicycling or pedestrian curriculums, safety programs have been taught by local law enforcement officers and through the volunteer efforts of local bicyclists. These programs vary slightly, however they generally

teach 1st and 2nd grade children bicycling techniques, rules-of-the-road, bicycle maintenance as well as pedestrian safety. For more information on these programs contact

- **Roger Leque, Chief of Police**
  River Falls Police Department

- **Lee Swenson**
  The Bike Shop

Community safety events such as *safety fairs* and *bike rodeos* are another means of educating young cyclists and promoting bicycling. The involvement of sponsoring community organizations reinforces development of community bicycling activities. Furthermore, promotional activities such as "Bike-to-Work Days" can complement these educational activities as well as other community bicycling events.

Bike Rodeos have been offered in River Falls for several years, typically attracting 60 to 100 students per year on average. It is recommended that the City and Town of River Falls cooperatively promote bicycle safety events such as "Bike Rodeos" by helping to locate private sponsors for these programs and by integrating Bike Rodeos into community promotion activities such as, summer Bike-to-Work-Days.

It is also recommended that educational activities throughout the county create bicycle and pedestrian educational programs that are designed to address the special needs of handicapped youth such as the developmentally disabled.

Child educational curricula and events are most effective when supplemented with enforcement and parental support and, therefore, adult bicycling education has increased importance. Adult audiences that should be targeted are the high school aged group and the older adult bicyclists and motorists.

Educating High School Aged Youth

Teen aged youth are often caught up in driving, or learning to drive, motor vehicles and are typically less interested in how to bicycle effectively. Several programs may be utilized to capture the attention of this audience:

1. **Include a bicycle safety component in existing drivers education program**. Available videos and instruction materials on bicycling should complement motor vehicle driving instruction.

2. **Create an *Effective Bicycling*[2] program that includes techniques of off-road bicycling.** Mountain biking is popular activity among young adults, and therefore, a short course including mountain biking techniques may be more attractive to this audience.

3. **Enforce vehicle codes.** Enforcement programs are often effective means to educate adult vehicle operators. Bicyclist and pedestrians share rights and responsibilities with other transportation users. As vehicular operators, bicyclists must also be held accountable for their actions.

Educating Adult Cyclists and Motorists

Enforcement of traffic laws, promotional information, and public relations campaigns are methods of educating adult bicyclists and motorists. A number of publications are available from the WisDOT that are designed to assist in the education of these adults. The distribution of educational materials to parents and other adults may be made a part of existing school bicycling curricula. Brochures and videos should also be made available through the local public libraries, the motor vehicle registration office, bike shops, the Chamber of Commerce office and recreation centers. "Community events announcements" in local newspapers and radio broadcasts may also help to promote safe bicycling and bicycle related events.

The Cops-on-Bikes Program, established in River Falls in 1994, is an effective and efficient method of community policing that also reinforces the validity of bicycling for transportation purposes. **The Cops-on-Bikes program is a useful tool for the enforcement and promotion**

(snow removal) and economic factors, but the following estimated costs were derived from various state and city sources:

Bike Lanes and Wide Curb Lanes: $1,500, including signs, striping, stencils, and street sweeping. (Arizona Highway Dept.)

Paved Paths: $600 - $900, including barriers, spot repairs, vandalism, striping stencils, clean-up and shoulder blading. (MinDOT and Madison DOT)

Gravel Paths: $1,200 - $1,500, depreciation and spot repairs, signs, litter clean-up and mowing medians. (WisDNR)

Shared Roadways: Negligible costs (Less than 1% of the routine street costs), including sign repair, vegetation pruning and extra litter clean-up.

These per-mile costs are generalized and do not include the amaturization costs of reconstruction or the costs of snow removal activities.

These costs of maintenance can be offset through cooperative agreements with private agencies. Adopt-a Bikeway programs and others can provide reliable routine clean-up and repair activities.

POLICY ISSUES

City policies need to regulate the use and development of all infrastructure improvements that affect bicycling and walking. Although the facilities that have been proposed in this plan will accommodate many of the areas bicycling and walking needs, these facilities are only part of the system that will ultimately be used. In fact, most of the city's streets and sidewalks will be used on occasion for various kinds of human transportation. Designated facilities cannot be planned for all city streets, but undesignated streets can provide minimal levels of accommodation to help connect individuals to the designated transportation system. The following policy approaches are recommended to improve the safety of all streets and travel corridors for bicyclists and pedestrians:

- Require, by ordinance, all new collector and arterial street widths to meet AASHTO Guidelines for Bicycle Facilities, 1991.
- Planning documents such as the "land use plan" and "park and open space plan" should incorporate recommendations for enhancing bicycling and walking.
- All pedestrian facilities must be barrier free and in compliance with the Americans with Disabilities Act.
- Require, by ordinance, adequate bicycle parking in the downtown and at destinations such as schools, recreation sites, employment centers and government facilities. (See Appendix item "Bicycle Parking Provisions)
- Establish a schedule and capital improvements program to maintain paths and streets.
- Replace parallel drainage grates with bicycle safe models at the time of reconstruction.
- Incorporate some level of bicycle and pedestrian accommodations on all new transportation infrastructure projects.
- Continually enforce vehicle operating rules and regulations for bicyclists and motorists.
- Make the following changes to city ordinances:
  Sec 12.06(1)(i) Pedestrian. Any person afoot. **(ADD "or using means of assisted movement")** *Disabled Pedestrians should be included in this definition.*
  Sec 12.06(13) RIDING ON SIDEWALKS. (Rep. & recr. #1990-12) (a) Bicyclist and operators of other **(Strike "other")** play vehicles.... *Bicycles are considered vehicles in Wisconsin and should not be confused with "play" items.*
  Sec 12.06(13)(c) Whenever a usable bicycle path has been provided adjacent to a roadway, bicycle drivers shall use such path and shall not use the roadway. **(Strike entire section)** *Bicycles should be recognized as vehicles and users should have all of the rights and responsibilities that motorists have. Furthermore, paths that have become popular for recreational use can be ineffective for utilitarian uses.*
- As a matter of policy the city should also consider the formation of a committee that would review multi-modal transportation issues in the community. Responsibilities of the proposed committee may include implementation of bicycle and pedestrian facilities, soliciting private support for events and capital improvements, coordination with local agencies and plan updates. The basic function of this committee would be to act as a

clearinghouse of information regarding transportation related issues in River Falls.

LAND-USE AND SITE PLANNING

River Falls currently enjoys a relatively compact urban structure that is essential to the continued success of enhancing multi-modal transportation activities. The viability of human transportation modes will be drastically affected by densities and location of future land-use developments. The transportation infrastructure planned into new subdivisions, commercial developments, industrial parks and planned unit developments must address the circulation of pedestrians and cyclists and provide viable transportation choices that supplement motor-vehicle travel. **To ensure that future developments enhance the quality of living in River Falls and maintain an environment that is conducive to bicycling and walking, development plans should be reviewed by the City Planning Department and Township Planning Department.**

Review of large land developments should consider these factors that affect bicycle and pedestrian circulation:

- If the development includes cul de sacs, does the sidewalk and street pattern prevent direct bicycle and pedestrian connections to local and regional destinations? Although cul de sacs are often relatively safe for children's play they can create awkward pedestrian circulation patterns. **Recommend connection of cul de sacs to one another or to other public corridors. Connections should be 25' wide to accommodate paths, utilities and rights-of-way.**

- Do residential land use types and densities prevent realistic walking and bicycling opportunities? **Provide a balance of higher densities and mixed-use developments to allow non-motorized transportation options.**

- Are planned commercial developments accommodating to pedestrians and bicyclists? **Recommend commercial locations, circulation patterns and facilities that accommodate human-powered transportation in conjunction with accommodations for motorists.**

A component of the City's land-use plan should include the evaluation and eventual acquisition of additional public open space along the Kinnickinnic River, its tributaries and other linear open spaces. As public open spaces these riverfronts can effectively benefit many aspects of the community[4]. These environmental corridors can be developed to:

- Provide transportation and recreation related activities.
- Protect and enhance water quality.
- Provide wildlife corridors in and around the community.
- Enhance the aesthetics of the community.
- Enhance property values and tax revenue.

It is apparent that these benefits have been recognized in River Falls. The city, however, should continue to assess additional riverfront locations to seize future opportunities. From the standpoint of bicycle and pedestrian transportation it is important to provide contiguous linear public spaces to allow for the development of off-street paths. In this regard the linkage of public spaces along riverfront and drainage ways should be evaluated within city and town comprehensive planning efforts. The riverfront from Division Street to Paulson Street is a example of scenic urban corridor that offers abundant recreational and transportation amenities that could benefit the city..

Planning Implication derived from evaluation of issues concerning land use and site planning include:

- ***Plans for all plats and Certified Survey Maps should be reviewed by the appropriate planning agencies to ensure proper connections to planned bicycle and pedestrian circulation systems.***

- ***Include linear open spaces in parkland dedication policies of new developments***

Making the Plan Work: An Implementation Action Plan

The success of this plan is largely dependent on the actions and support of local people. The multi-modal transportation committee proposed earlier in this report would be a clearinghouse for information and an advocate group for improving bicycling and walking in the community. However, the implementation of facilities and programs is the responsibility of local individuals, businesses, the City, the Town, the County and the State. The following matrix proposes a plan for how local interests can get involved to enhance bicycling and walking activities in River Falls:

An Implementation Action Plan for Local Interests	
Local Interest	***Action Plan - How to Improve Local Bicycling and Walking Opportunities***
Individuals	• Increase the frequency of bicycling or walking trips per week and then encourage other family members to do the same. • Wear a helmet when bicycling and respect the rules-of-the-road. • Talk to employers about providing incentives and bicycle parking facilities. • Form a local based bicycle and pedestrian focus group. The purpose of this group would be to influence local policies and capital improvement projects.
Businesses	• Encourage employees to bicycle and walk to work by offering incentives and by providing needed facilities at the workplace such as bicycle parking. • Sponsor city-wide bicycling and walking promotional activities like "Bike Rodeos", "Bike-to-Work Days" and "Walk-to-Work Days". • Adopt or sponsor a local bikeway or pedestrianway. • Survey employees to determine methods to increase bicycling and walking activities.
Educational Institutions	• Offer bicycling and pedestrian educational curriculums. • Survey students to determine methods to increase bicycling and walking activities.
The City of River Falls	• Integrate bicycling and walking into overall transportation and land-use plans. • Promote bicycling and walking by forming a Multi-Modal Transportation Committee. • Maintain a Cops-on-Bikes program for local law enforcement. • Improve facilities for bicyclists and pedestrians and integrate improvements into the CIP. • Provide mapping and signing that will help bicyclists and pedestrians get around the community.

River Falls Multi-Modal Transportation Committee	• Act as a "Clearinghouse" for bicycle and pedestrian related information. • Annually monitor the progress of projects and evaluate existing facilities, new developments and funding sources.
Towns and Counties	• Integrate bicycling and walking transportation enhancements into city and county transportation, recreation and land-use plans. • Provide bike/ped facilities that will connect communities and regional destinations. • Provide mapping and signing for all designated bicycle and pedestrian facilities.
State	• Respond to the needs of local bicyclists and pedestrians by providing appropriate accommodations on State Trunk Highways. • Provide technical information to local units of government.

SUMMARY

Until recently in the United States bicycling and walking have been neglected from serious consideration as transportation modes. This neglect has evolved with the development of sprawling land use patterns and transportation facilities that are predominately designed for motor vehicles. Increasingly the benefits of developing multi-modal systems that afford greater transportation choices are being appraised and the advantages of bicycling and walking are being recognized beyond their recreational values, as viable, healthy, cost efficient and environmentally benign means of travel. Implementation of this plan will build upon the city's greatest opportunities to enhance bicycling and walking and will:

Expand the White Kinnickinnic Trail around Lake George and to the north. The City Planning Department has prepared several concepts for a recreational trail around Lake George. Properly developed, this trail system could serve transportation functions.

Increase multi-modal transportation possibilities by providing bicycle and pedestrian facilities to the *Park and Ride* site located north of the city. Another *Park and Ride* location was identified to serve the city's commuting motorists.

Strengthen the City's plan to provide sidewalks on city streets. The five year plan that has been approved should be integrated into the *Capital Improvements Program* and fully funded.

Provide better bicycle and pedestrian linkages to the University from residential zones that house many students and/or employees.

Improve regional linkages for commuting and recreational cyclists. Several important regional connections include CTH MM, CTH M, Quarry Road, the abandoned railroad line south of the city, and the path along STH 29 in the town of River Falls.

Improve non motorized transportation facilities in newer commercial districts along the north and south ends of Main Street. Sidewalks and bicycling facilities are generally lacking from these regions of the community and thereby limiting business activities.

Provide signing and support facilities on streets that are currently suitable to bicyclists. Suitable existing roadways include, but not limited to: N Wasson Lane, portions of Maple Street, Fourth Street, Park Street Eighth Street and Bartosh Lane.

Identify and improve crossing locations along Cascade Avenue for the safety of bicyclists and pedestrians.

Provide facilities that will enable children to safely walk or bike to school.

Provide alternative facilities that will keep bicyclists off of sidewalk - particularly in the downtown business district.

Protect and enhance greenway corridors through the development of bicycle and pedestrian paths.

By capturing these and other opportunities, River Falls is in a position to develop the bicycle and pedestrian transportation system recommended in this plan as a means toward enhancing the quality of living and providing better mobility to its residents.

References

1. Wisconsin Bicycle Planning Guidelines (1993)

2. *Effective Cycling* is a program of the League of American Wheelman, a bicycling advocacy group.

3. From Walk Alert, 1993

4. AASHTO Guide for Developing Bicycle Facilities, 1991.

5. Sorton, Alex. Program of Instruction for the Bicycle Planning and Facilities Workshop October 18-19, 1994.

APPENDIX ITEMS:

A. Bicycle Facility Definitions

B. Urban Corridor Facility Development Guidelines

C. Bicycle Parking Provisions

D. Guidelines for Installing Sidewalks

E. WisDOT Cost Sharing Policy

F. Characteristics of Different Types of Bicyclists

G. Typical Bicycle Signing on Roadways

H. Bicycle and Pedestrian Funding Sources

I. Summary of Recommendations for the Town of River Falls

APPENDIX A. Bicycle Facility Definitions

Facilities to accommodate bicyclists are defined as follows:

Bicycle facilities - A general term denoting improvements and provisions made by public agencies to accommodate bicycling, including parking facilities, mapping all bikeways, and shared roadways not specifically designated for bicycle use (American Association of Sate Highway and transportation Officials (AASHTO) definition).

Bikeway - Any road, path or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for exclusive use of bicycles or are to be shared with other transportation modes (AASHTO definition).

Bicycle Route - A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without specific bicycle route number (AASHTO definition).

Shared Roadway - Any roadway upon which a bicycle lane is not designated and which may be legally used by bicyclist regardless of whether such facility is specifically designated as a bikeway (AASHTO definition).

Shared roadways (Figure 3) are often effective and efficient facilities that provide common bicycle accommodation within travel lanes shared by motorist. In general, shared roadways are undesignated because of their narrow usable road's surface width that the bicyclist shares with motor vehicles. Nonetheless, roadways with low motor vehicle traffic levels (urban roads below 2000 ADT and below 500 ADT on rural roads) can be designated. Low traffic volumes, in the case of many residential streets, and low speed in some downtown regions can be suitable for bicycling. Whether shared roadways are designated or not, they are an integral part of the bicycle transportation system and provide basic accommodation by providing access to the designated bikeway system.

Wide Curb Lanes - A right of way shared by motor vehicles and bicycles; wide enough to allow motor vehicles to overtake the bicyclist without changing lanes (Wisconsin Bicycle Planning Guidance, 1993).

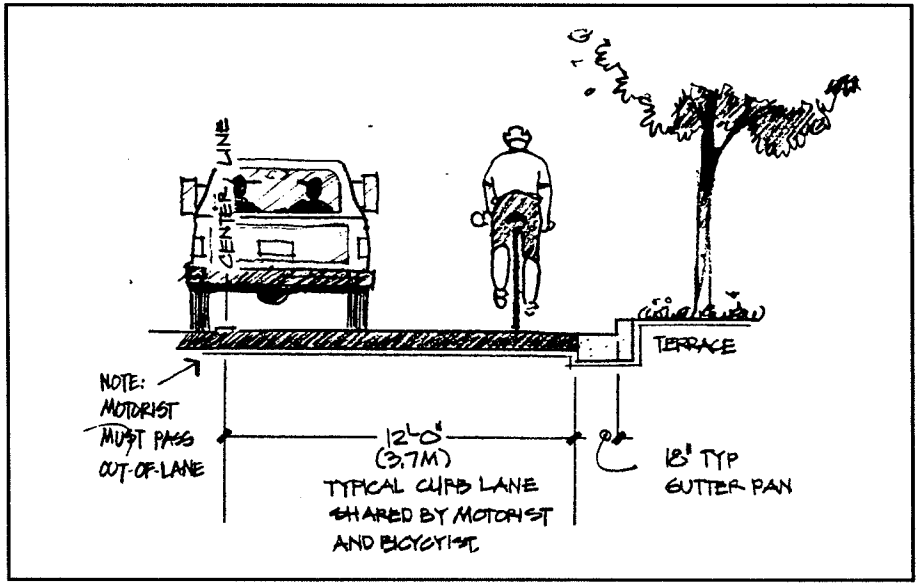

Figure 4. Typical Section of Shared Roadway

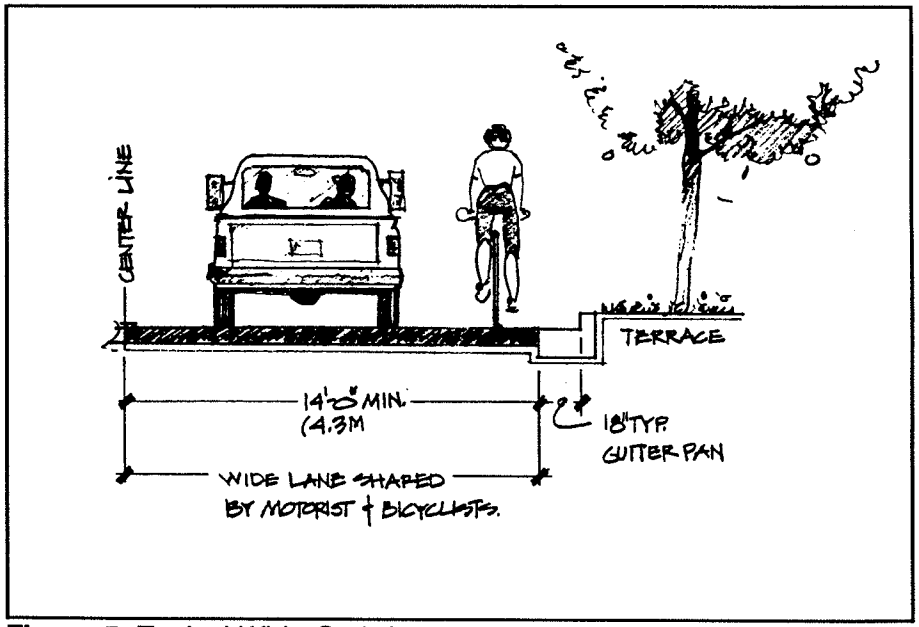

Figure 5. Typical Wide Curb Lane

Widened curb lanes (Figure 4) provide a width that will generally allow bicyclists and motor vehicle drivers to share the roadway while minimizing conflicts. Generally, 14 feet of usable width is necessary to allow motorists to overtake bicyclists[4]. On-street, without parking the usable width should be measured from edge of gutter pan to prevent encounters with drainage grates and curbs. Usable width on-street that includes parking should be a minimum of 22 feet from edge of gutter pan to lane stripe.

Bicycle Lane - A portion of roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicycles (AASHTO definition).

Bicycle lanes (Figure 5) are delineated in available road space by bicycle lane markings and are intended to give preferential use for respective modes of transportation within a roadway. Properly designed bicycle lanes have been shown to increase the real and perceived safety of bicyclists.[5] Bicycle lanes should carry one-way traffic in the same direction as adjacent motor vehicle traffic and be a minimum of 5 feet wide from curb face or parked motor vehicles.

Paved Shoulders - Not exclusively designated for bicycling but outside of the roadway travel lane (See Wisconsin Bicycle Planning Guidance, 1993). Although paved shoulders (Figure 6) are not exclusive rights-of-way for bicyclists they provide some of the same benefits as bicycle lanes and allow a usable riding space outside of the driving lanes of motor vehicles. To best accommodate bicyclists, shoulder widths should be a minimum of 4 feet without rumble strips. Rural settings are most appropriate for paved shoulders which generally benefit all vehicles.

Bicycle Path - A bikeway physically separated from motor vehicular traffic by an open space barrier and either within the highway right of way or within and independent right of way (AASHTO definition).

Bicycle paths (Figure 7) may be exclusive to bicycling or may accommodate pedestrian travel. Paths should be isolated from motor vehicle traffic and therefore provide pleasurable utilitarian and recreational riding opportunities. The recommended minimum surface width of two-way paths is 8 feet, with an additional 2 foot clear zone, free from obstructions, on each side. A width of ten feet is highly recommended especially in highly used urban corridors where many skaters and walkers can also be expected.

Both the Wisconsin Bicycle Planning Guidance and the AASHTO Guidelines for Developing Bicycle Facilities, 1991 provide discussion on other design criteria relating to bicycle paths.

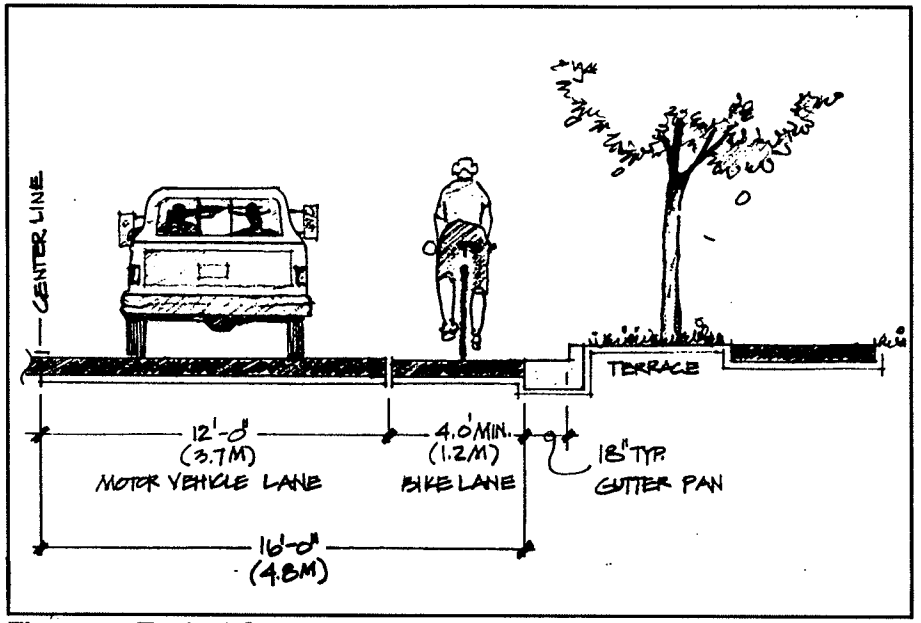

Figure 6. Typical Section of Bicycle Lane

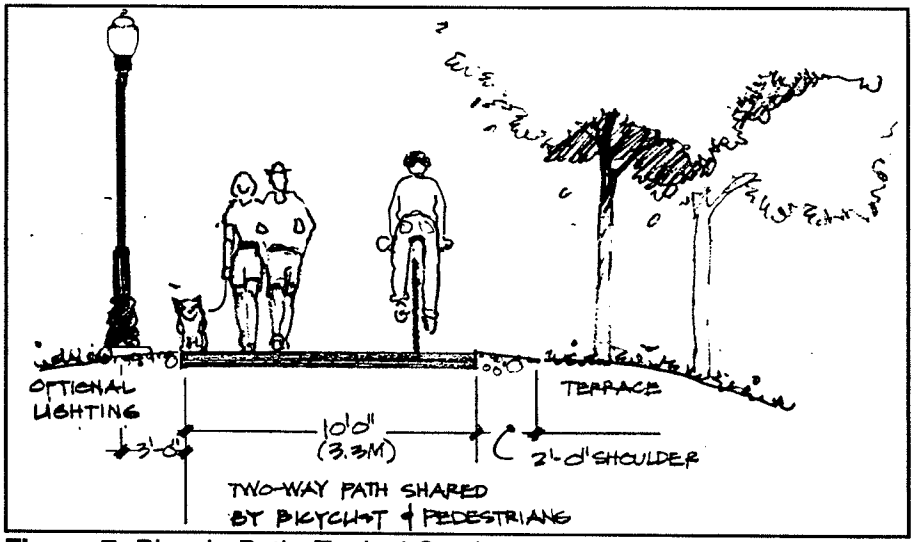

Figure 7. Bicycle Path, Typical Section

Appendix B
Urban Corridor Facility Development

Group B Bicyclists • Urban Section

average motor vehicle operating speed	annual average daily traffic volume (AADT)											
	less than 2,000				2,000 – 10,000				over 10,000			
	adequate sight distance		inadequate sight distance		adequate sight distance		inadequate sight distance		adequate sight distance		inadequate sight distance	
		truck, bus, rv				truck, bus, rv				truck, bus, rv		
20–30 mi/h	wc 14	wc 14	wc 14	wc 14	wc 14	wc 14	wc 14	wc 14	bl 5	bl 5	bl 5	bl 5
30–40 mi/h	bl 5	bl 5	bl 5	bl 5	bl 5	bl 6	bl 6	bl 5	bl 5	bl 6	bl 6	bl 5
40–50 mi/h	bl 5	bl 6	bl 6	bl 5	bl 5	bl 6	bl 6	bl 5	bl 6	bl 6	bl 6	bl 6
over 50 mi/h	bl 6	bl 6	bl 6	bl 6	bl 6	bl 6	bl 6	bl 6	bl 6	bl 6	bl 6	bl 6

Key: wc = wide curb lane bl = bike lane

From: WisDOT, Wisconsin Bicycle Planning Guidance, 1993

Appendix C

Bicycle Parking Facility Recommendations

Land-use of Development Type	*Number of Bicycle Parking Spaces Recommended*	*Type of Bicycle Parking Recommended*
Primary or Secondary School	*10% of the number of students*	*Rack to lock bike frame and one wheel, should secure bike position.*
College or University	*8% of the number of students*	*Rack to secure whole bike, lighting essential.*
Shopping Mall/Retail Stores	*1 space for every 20 motor vehicle spaces*	*Rack to lock bike frame and one wheel.*
Commercial Street/Downtown	*5 spaces per block of storefront*	*Rack to lock bike frame and wheel. In downtown areas with more than 1000 employees provide bike lockers or enclosures.*
Recreation Center/Parks	*1 spaces per 10 motor vehicle spaces, 5 spaces minimum*	*Rack to lock bike frame and wheel. Lighting essential.*
Office Work Place	*1 space per 20 motor vehicle spaces*	*Racks to secure whole bike. Offices with more than 200 people should provide indoor or enclosed spaces.*
Industrial Work Place	*1 space per 30 motor vehicle spaces*	*Racks to lock bike frame and one wheel.*
Library/Gallery/Zoo	*1 space per 15 motor vehicle spaces, 5 spaces minimum*	

Prepared by: Schreiber/Anderson Associates, 1994

Appendix D

Guidelines for Installing Sidewalks

From: Walk Alert: National Pedestrian Safety Program Guide

Types of areas (land-use, roadway functional classification, or dwelling units)	**Where do you need sidewalks . . .**	
	. . . with new urban and suburban streets?	*. . . with existing urban and suburban streets?*
Commercial and industrial — all streets.	On both sides of these streets.	On both sides of these streets — make every effort to add them and to complete missing links.
Residential — major arterials.	On both sides of these streets.	On both sides of these streets.
Residential — collectors.	On both sides of these streets.	*For multi-family dwelling* — on both sides of these streets. *For single-family dwellings* — on at least one side of these streets.
Residential — local streets with more than 4 units per acre.	On both sides of these streets.	Preferred on both sides, but required for at least one side.
Residential — local streets with 1-4 units per acre.	Required on one side, but preferred on both sides.	Preferred on at least one side. At least 4-foot shoulder required on both sides.
Residential — local streets with less than 1 unit per acre.	On one side of these streets preferred, but shoulder on both sides required.	Preferred on at least one side. At least 4-foot shoulder required on both sides.

Notes:

1. You must have a sidewalk on at least one side of any local street that is within two blocks of a school and that is a walking route to that school.
2. You may omit a sidewalk on one side of any new street when that side of the street clearly cannot be developed and when there are no uses or planned uses for that side of the street that would encourage people to walk there.
3. When a main road has a service road, you may eliminate the sidewalk next to a main road if you replace it with a sidewalk on the far side of the service road.
4. When you have a rural road that is not likely to serve development, you must provide a shoulder at least 4 feet in width. If the road serves as a primary highway, the shoulder should be 8 feet wide. The shoulder should be made of a material that provides a stable, mud-free walking surface.

6.2.3 Cost of Conditioning and Maintenance -

The cost for conditioning and maintenance of a designated detour route(s) (Wis. Stats., 84.02(10)) is not eligible.

6.2.4 Payment For/Or Repair of Damages -

Payment for/or repair of damages to roads or streets caused because of their use in hauling materials incident to the improvement (Wis. Stats., 84.20) are not eligible.

6.2.5 Resurfacing -

Resurfacing is considered an improvement and therefore WisDOT's responsibility if the mat is continuous and more than 2 inches deep. Intermittent mats and mats of 2 inches or less are considered maintenance and the responsibility of the local jurisdiction.

6.2.6 Project Costs -

Other project costs not specifically listed above are eligible at the same rate as if the items were on a State Trunk Highway project.

6.3.0 PROJECT COSTS ELIGIBLE FOR STATE FUNDING

Some project costs are eligible for state or federal funding on urban non-freeway projects for a State Trunk Highway. Eligible for funding means that only certain costs qualify for state or federal monies. Urban means the project has an urban cross section where urban type development exists or a section where urban type development is planned, or may reasonably be expected. Local agreements are required for all projects that involve participation.

6.3.1 Street Construction -

All usual items of street construction (grading, paving, etc.) which are an integral part of a construction project are eligible.

6.3.2 Preconstruction Engineering -

All preconstruction engineering costs which are necessary for the construction project are eligible except as noted in 6.2.1.

6.3.3 Right-of-Way -

The acquisition of the necessary right-of-way in order to construct the project is eligible.

6.3.4 Sidewalks -

Replacement sidewalks necessitated by street/road construction are eligible if the local jurisdiction agrees to accept responsibility for sidewalk repair, maintenance, and replacement (other than that caused by future highway projects).

Where sidewalks do not already exist, provision will be made for sidewalks as part of the project design for all reconstruction and recondition type projects at state expense. Provision for new sidewalk consists of purchasing the right-of-way and grading a berm so that a sidewalk may be installed.

6.3.5. Driveways -

When replacement driveways are necessitated by street or road construction and there is a sidewalk, concrete from curb to sidewalk and replacement in kind beyond the sidewalk is eligible. When there is no sidewalk, replacement in kind beyond the curb is eligible. New driveways are not eligible.

6.3.6 Storm Sewer-

Laterals are eligible. Trunk line sewers needed to accommodate surface water naturally flowing to the street are fully eligible in the ratio that the estimated cost of the sewer needed to accommodate the water naturally flowing from the street bears to the total estimated cost of the sewer to be constructed.

6.3.7 Street Lighting-

Replacement street lighting necessitated by the street or road construction is eligible if the affected jurisdiction(s) agree to accept responsibility for energy, operation, maintenance, and replacement of the lighting system (including associated costs). In urban areas, provided the affected jurisdiction(s) accept responsibility for the energy, operation, maintenance and replacement of the lighting system (including associated costs), new continuous street lighting designed to national standards adopted by WisDOT is 50 percent eligible.

WisDOT will participate in the cost of new continuous street lighting only if they are installed at the time of project construction, except as it may qualify under special funding programs specifically for lighting. Where an alternate design acceptable to WisDOT is installed, 50 percent of the cost equivalent to lighting meeting WisDOT standards is eligible, not to exceed 50 percent of actual cost.

6.3.8 Landscaping -

Landscaping is 75 percent eligible when placement is in the right-of-way or when local jurisdiction arranges for placement on private property in cases where there is insufficient space in the right-of-way.

Landscaping will be consistent with the adopted WisDOT standards (limited to trees and shrubs as appropriate). It shall be designed as part of all urban projects provided the local jurisdiction or property owner accepts responsibility for the maintenance of the landscaping items.

Where possible, landscaping design should be consistent with the community's landscaping practices.

6.3.9 Traffic Signals -

Traffic signals necessary and warranted for the safety and efficient flow of traffic within the construction project limits are eligible.

6.3.10 Street Signs, Parking Meters and other Items Not Essential for Service to Moving Traffic -

Any item not necessary for the safe and efficient movement of traffic are not eligible for state or federal funding.

6.3.11 Installations -

New installations of or alteration of sanitary sewers and connections, water, gas, electric, telephone, telegraph, fire or police alarm facilities, parking meters, and similar utilities are not eligible.

Appendix F. Generalized characteristics of different types of bicyclists

Variables	Experienced Cyclists, Type A	Average Adult Cyclists, Type B	Child Cyclists, Type C
Percent of all cyclists[1]	6%	52%	42%
Maximum average speed[2]	15 miles per hour	8-10 miles per hour	5 miles per hour
Maximum average trip length[3]	20 minutes or 5 miles	20 minutes or 2.4 miles	10 minutes or 1 mile
Common type of trip/Geographic topology	Utilitarian and some recreational/ Subregional, regional, neighborhood	Recreational and some utilitarian/ Regional - non destinational, neighborhood	Largely recreational however may make utilitarian trips to school/ neighborhood
Preferred facilities	Arterial and collector streets	Bikeways such as bike lanes, routes and paths; also residential streets	Sidewalks, bicycle paths and residential streets
Common concerns	Curb width, number of stops and directness of route.	Motor vehicle traffic	Motor vehicle traffic
Common accident types[4]	Overtaking	Crossing patterns	Drive-outs
Education and Experience	Knows the rules of the road and generally obeys them. Knows methods to avoid accident situations.	Knows the rules of the road but often disregards them. Often unfamiliar with proper methods of avoiding accidents.	Generally unfamiliar with the rules of the road.
Physical ability	Generally physically fit.	Varies widely	Physical disabilities such as poor peripheral vision and poor judgment of traffic speed, traffic gaps, and direction of sounds.
Environmental effects	Accustomed to different terrain, weather and other environmental conditions.	Generally affected by steep terrain and poor weather or road conditions.	Affected by environmental conditions.

[1] Bicycle manufacturer's Sales Data, 1980

[2] Average Speeds for level terrain. Bicyclist speed may vary according to purpose of trip, condition or location of bikeway, environmental conditions and ability of individual cyclists.

[3] Several studies have shown that 20 minutes is the average high travel distance for adult cyclists traveling for utilitarian purposes. Pennsylvania and Tennessee studies showed average trip length to work to be 2.55 miles.

[4] General analysis of Cross-Fisher Study

Prepared by Schreiber/Anderson Associates

G. Typical Bicycle Signing on Roadways

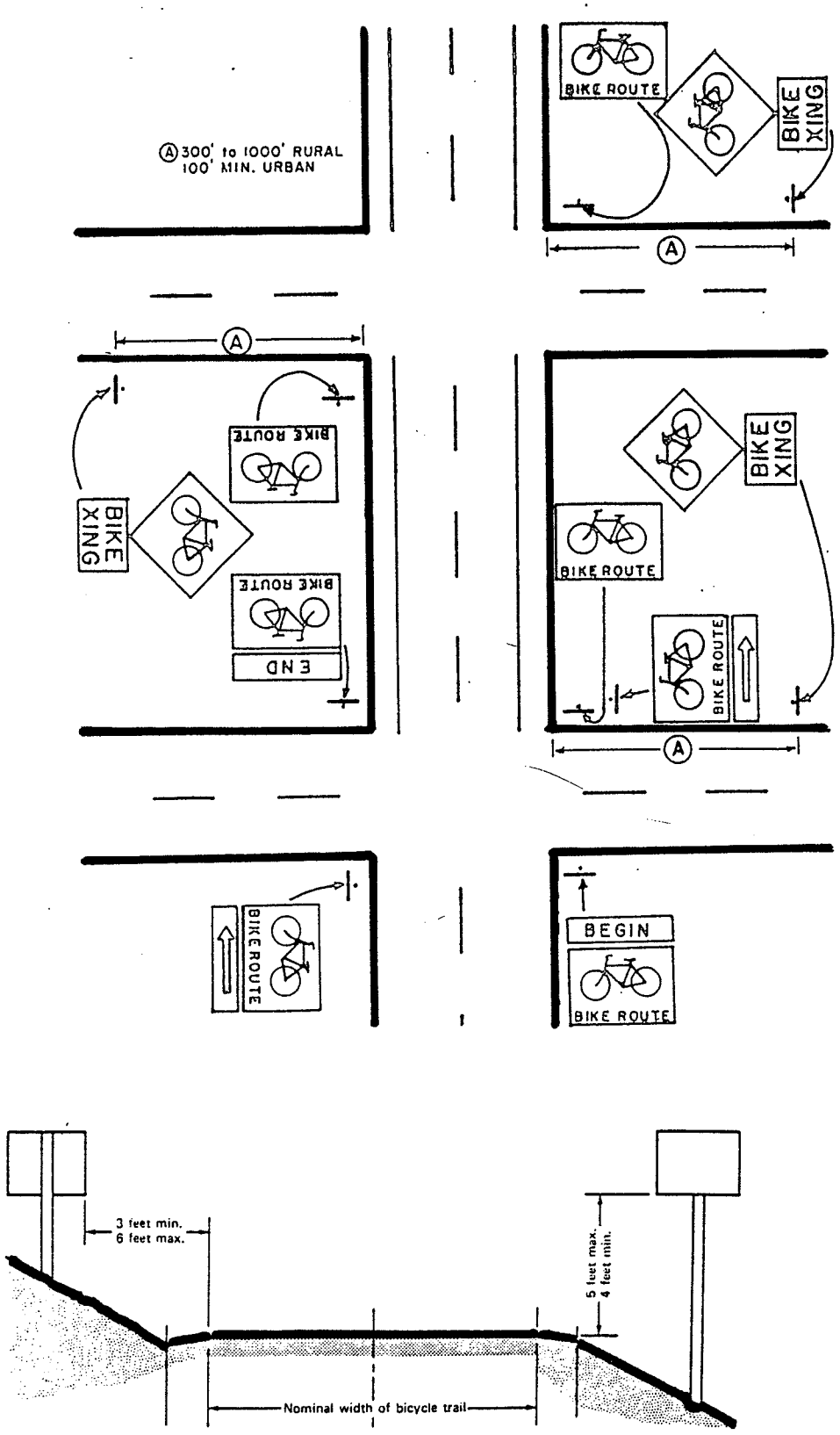

Figure 9-1. Bicycle sign placement on a trail.

APPENDIX H.

BICYCLE AND PEDESTRIAN FUNDING SOURCES

WISCONSIN DEPARTMENT OF TRANSPORTATION ADMINISTERED PROGRAMS

Congestion Mitigation and Air Quality Improvement (CMAQ) Program Funds

A broad program intended to improve air quality by reducing single occupant motor vehicle trips through activities like developing bicycle and pedestrian facilities or improving combined bus/bike/pedestrian transportation choices. These 80 percent matching grants may also fund programs ranging from construction and development projects to education and enforcement.

Federal Lands Highway Funds (Section 1032)

This program matches 80 percent of the costs to construct bicycle and pedestrian transportation facilities on roads, highways and parkways through public lands and Indian reservations. The program is administer by WisDOT and each MPO. Wisconsin will distribute funds in the Forest Highways portion of this program.

National Highways System (NHS) Fund (Section 1006)

This Federal/State program is administered by the DOT and MPO. It provides 80 percent grant assistance to local governments for the construction of bicycle and pedestrian transportation related facilities adjacent to any highway on the National Highway System (Other than the Interstate System). Facilities must be pursuant of an overall plan approved by each MPO and State.

Scenic Byways Program Funds (section 1047)

The program assists construction of bicycle and pedestrian related facilities along scenic highways.

Surface Transportation Program (STP) (section 1007)

Ten percent of the State's annual STP funds are available for Transportation Enhancement Activities (TEAs). In Wisconsin these enhancements are grouped under the Statewide Multimodal Improvements Program (SMIP). Two of the ten different activities eligible for funding under SMIP are specifically for the enhancement of bicycle and pedestrian facilities: one for the conversion and use of railway corridors and the other specifically for improved bicycle and pedestrian facilities. Bicycle and pedestrian projects must have a utilitarian transportation emphasis. SMIP funds will match 80% of the cost of projects.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES ADMINISTERED PROGRAMS

Aids for the Acquisition and Development of Local Parks (Section 23.09(20)

As the name implies this WDNR administered program provides 50 percent matching funds for acquisition and development of public outdoor recreation areas. Local governments must have an approved Comprehensive Outdoor Recreation Plan.

LAWCON (Public Law 88-578 (1964)

A State/Federal program administered by the WDNR provides 50 percent matching grant assistance to local governments for the acquisition of land for public outdoor recreation. Projects must be consistent with the state outdoor recreation plan.

Urban Rivers Grant Program

A State program that provides local government units 50 percent grant assistance for improving access and public recreation opportunities along urban riverfront.

Urban Greenspace (Section 23.09(19))

Objectives of the Urban Greenspace Program are to provide natural or noncommercial gardening space in urban areas and to protect scenic ecological or natural values from urban development. As part of the State's Stewardship initiative 50% funding is contingent on having an approved Comprehensive Outdoor Recreation Plan.

National Recreation Trails Fund (Section 1302)

The intent of this program is to assist in the development of various recreational trail facilities. The WDNR administers this program that provides 50 percent grant assistance to local governments for non-motorized and motorized trail use projects that are consistent with the Statewide Comprehensive Outdoor Recreation Plan.

OTHER RELATED GRANTS AND PROVISIONS

Wisconsin Department of Transportation provisions for bicycle and pedestrian accommodation

The policy of the Wisconsin DOT is to accommodate bicycle uses on any state trunk highways that carry an average of more than 1000 motor vehicle trips per day and carrying two-way bicycle traffic of more than 25 bicycles per day during normal bicycling season.

Bicycle and pedestrian accommodation on bridges (Section 1033)

When a highway bridge deck is built or replaced using Federal funds and where bicycles are not restricted from that highway the bridge must provide accommodations if the Secretary of Transportation determines that bicycles can be safely accommodated at a reasonable cost.

Section 402 Funding

Under Title II, Section 2002 of ISTEA, pedestrian and bicycle safety are priorities for highway safety program funding. This safety grant program sets priority status for bicycle and pedestrian safety.

Federal Transit Funding

Title III section 25 of ISTEA provides funding for improving bicycle and pedestrian access to transit.

MISC.

Heritage Tourism Projects
Local Roads Improvement Program
Joint-Use Corridor Developments (ie Sharing costs of acquisition and development with utility companies)
Board of Commissioners of Public Lands
Business Improvement Districts (BIDs)
Rails-to-Trails Conservancy

Summary Recommendations for the Town of River Falls

Like in the City of River Falls, the Town is being transformed by urbanization and increased traffic. While the growth offers economic opportunities it can also diminish the security and rural quality that are fundamental to the lifestyles of many Town residents.

This plan seeks to improve opportunities to safely bicycle and walk to destinations throughout the region. In this regard, the plan intends to enhance transportation and recreation activities by building on the improvements already begun with the proposed Cemetery Road sidepath and the STH 29 sidepath. Recommendations to improve bicycling and walking in the Town are practical and cost effective. Furthermore, the bikeways, pedestrianways and support facilities that are proposed are tied into a regional system designed for the entire urbanized area.

This document was prepared by the firm of Schreiber/Anderson Associates, together with input from Louis Campbell, Town Chairman and member of the River Falls Bicycle and Pedestrian Trails Ad Hoc Committee. The information and criteria set forth in the overall Bicycle and Pedestrian Plan for the River Falls Urbanized Area are the foundation for town recommendations. The following is a summary of facilities and policies being proposed for the Town of River Falls:

- Coordinate with the City to delegate a representative to sit on the proposed Multi-modal Transportation Committee

- Widen sidepath along STH 29 to eight feet to meet AASHTO Guideline for Bicycle Facilities, 1991. Also provide bikeway signage

- Sign all designated bicycle and pedestrian facilities. Coordinate with the City and County on signage system design.

- Coordinate with the City on the development of a Park-and-Ride parking lot to be located near the intersection of S. Wasson Lane and Cemetery Road. This parking area should be developed as a trail-head facility and public park.

- Provide paved or gravel shoulders on arterial and collector roads without sidewalks to accommodate non motorized modes of transportation.

- Encourage the County to complete paved shoulders on CTH FF, CTH E and eventually CTH O.

- Support the implementation of area educational and promotional activities that are aimed at enhancing bicycle and pedestrian transportation.

- Integrate Town bicycle and pedestrian transportation systems into area Park and Open Space Plans, Land Use Plans and Transportation Plans

- Develop new bicycle and pedestrian facilities such as:

  Happy Valley Road: Provide four feet of gravel shoulder on each side and designate as a bicycle route by signing.

  Pleasant View Road: Widen roadway to at least 22', provide three feet of gravel shoulder on each side and designate by signing.

  Cooperatively work with the city to develop a limestone bicycle and pedestrian path from Cemetery Road to the Rocky Branch Creek and to Birch Cliff Drive.

  See Urban Corridor Recommendations - River Falls Urbanized Area for more detailed descriptions of facility recommendations.

In addition to these specific recommendations the body of the report makes many general recommendations that apply uniformly throughout the River Falls urbanized area. The multi-jurisdictional approach proposed in this plan will help the Town of River Falls develop a coordinated bicycle and pedestrian system that will enhance regional transportation opportunities.

GENERAL REFERENCES

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