



City of Oshkosh, Wisconsin Pedestrian and Bicycle Circulation Plan

September 2011

CITY OF OSHKOSH PEDESTRIAN AND BICYCLE CIRCULATION PLAN

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Approved by the Oshkosh Common Council
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EXECUTIVE SUMMARY

1.1 INTRODUCTION

The City of Oshkosh has prepared this 20-year Pedestrian and Bicycle Circulation Plan to develop sound strategies for improving pedestrian and bicycle transportation throughout the Oshkosh area. The planning area includes the City of Oshkosh with connection to surrounding extra-territorial areas.

Oversight on this project has been provided by the Pedestrian and Bicycle Plan Stakeholder/Steering Group, a working team formed of interested citizens, representatives from various organizations and city departments. The group was responsible for providing direction and review of plan components through an extensive series of workshop meetings. The process also included multiple public information Meetings and public hearings.

1.2 EXISTING CONDITIONS

The Oshkosh area consists primarily of a grid pattern street system that is altered by the area's waterways such as the Fox River and Lake Winnebago. As a result, bridges are a major concession for bicycle and pedestrian travel. The prevalent transportation pattern evident in Oshkosh is the use of all of the street width for motorized traffic on most major collectors and arterials. In many cases, the street is divided into four narrow travel lanes, with no terrace and with the sidewalk, if present, abutting the street.

The Oshkosh urbanized area is connected to the surrounding rural areas by a system of State and County highways. United States Highway (USH) 41 provides the primary north- south route through the area. Travel east to west is accommodated through Highways 21, Witzel Avenue, 9th Avenue, West 20th Avenue and South Park Avenue. Bicycle and pedestrian travel is prohibited on USH 41. Currently, bicycle and pedestrian accommodations on the bridges and underpasses of USH 41 are through the newly constructed or planned round-a- bout network but connections to these new facilities are inadequate, and in many cases not present.

Census 2000 indicates workers living in the Oshkosh area had an average commute time of 16 minutes. Connections between places of residence to place of employment are integral to increasing mode share. Providing safe and adequate facilities along these "commuter routes" creates opportunities for commuters who want to bike to work the opportunity to do so. Similarly, connections to area trails, such as the WIOUWASH State Trail and the USH 41 Lake Butte des Morts trail will increase comfort levels for bicyclists of all abilities.

Transportation systems and land use patterns have a well-documented reciprocal relationship. As Oshkosh has grown, the demands for transportation system

improvements have also grown. However, these transportation improvements have also provided more convenient access to land farther out, thus spurring outward growth. More than any other transportation system, it has been the road network and the prevalence of the automobile that has impacted land use patterns over the past half- century.

Notable land use patterns or issues for the City of Oshkosh and Winnebago County include:

- Water divides the urbanized area between north to south and to a lesser extent from east and west.
- Development is often not contiguous; in general, Oshkosh has its distinct areas of both residential and commercial development. In many cases, water, or undeveloped land separates Oshkosh from our neighboring communities.
- Development as it exists today directly corresponds to the freeway system.

Walking is often overlooked and undervalued as a transportation mode. Yet, in the Oshkosh area, 3.3 percent of commuters reported regularly walking to work. These percentages do not include other pedestrian activity, such as walking trips to schools and universities, commercial areas or for recreation. Many of these pedestrians are children, seniors and persons utilizing wheelchairs or mobility devices who require special consideration regarding facility design.

Areas where there are gaps in the bicycle and pedestrian system include any place there is a lack of biking or walking facilities, maintenance issues, or areas where bike paths and major routes should connect to other routes, recreational areas, residential areas, commercial centers or employment centers. Noteworthy gaps included the difficulty of bicycle travel under or over USH 41, on many collectors and arterials throughout the city and on the bridges that span the Fox River. A general comment from the public about these gaps includes the usability of these areas on a year-round basis. The quick and effective removal of snow can be an issue when not done with respect to crosswalk locations or curb lanes.

1.3 RECOMMENDATIONS AND IMPLEMENTATION

Recommendations were developed using an inventory and analysis of existing facilities, Ordinances, and plans as well as suggestions/comments from the public, city staff and the Pedestrian and Bicycle Plan Stakeholder/Steering Group. Recommendations include a principal or overriding recommendation to establish an official City of Oshkosh Bicycle and Pedestrian Commission, bicycle and pedestrian program recommendations, general facility improvements, route configuration, and implementation strategies, including a timetable for expansion of the bicycle network.

1.3.1 Bicycle and Pedestrian Commission Recommendations

The creation of an official Bicycle and Pedestrian Commission, functioning similar to other existing city boards/commissions, would hold regular meetings and be charged with the responsibility of reviewing, amending and implementing the recommendations and initiatives included within this plan.

1.3.2 Bicycle and Pedestrian Program Recommendations

Bicycle and pedestrian program recommendations include education, encouragement, and outreach programs; enforcement; facility maintenance and policy recommendations. Education, encouragement, and outreach programs were designed to foster a safe bicycling and walking environment and increase the prevalence and enjoyment of walking and bicycling. Successful encouragement and outreach efforts largely rest on a foundation of extensive and effective educational programs. Education programs include identifying safe routes for bicyclists and pedestrians, teaching bicycling techniques, disseminating information regarding regulations that govern bicyclists and pedestrians, and instructing bicyclists and pedestrians how to handle potentially dangerous situations. Encouragement activities are valuable because they promote biking and walking through incentives (such as rewards) or provisions (such as safe and convenient parking facilities). Outreach activities are among the easiest and least cost intensive initiatives that advance bicyclist and pedestrian safety. Consistent enforcement of traffic laws also plays an important role in advancing bicyclist and pedestrian safety. Likewise, maintenance is important for all types of transportation facilities. Periodic and consistent removal of debris and resurfacing/patching of deteriorated pavement are important procedures for ensuring that users are provided with safe and reliable transportation facilities.

1.3.3 General Facility Improvements

While useful to encourage and sustain walking and bicycling, operational programs and policies are futile without adequate facilities. Too often, facility planning is synonymous with planning separate trail systems. However, separated bike/pedestrian paths and bike lanes are the most costly of all facility improvements. Because of their costs and the amount of public right-of-way needed to accommodate these systems, separate bikeways seldom form a complete bicycle and pedestrian system. For the City of Oshkosh, it is most efficient and cost effective to make use of established transportation right-of-ways, especially within the older developed areas of the City. Trails and sidepaths are mainly utilized in newer areas of Oshkosh, at natural corridors and where physically and economically feasible.

Signing bike routes direct pedestrians and bicyclists to the preferred routes and also helps to direct visitors from outside the community to their desired destinations safely and efficiently. The routes also increase the likelihood that motorists will encounter bicyclists which may heighten driver attentiveness and bicyclist confidence. All bike routes within Oshkosh are recommended to be signed, whether they have bike lanes, sharrows, wide curb lanes, or are simply shared-use roadways.

As important as bicycle facilities are for increasing mobility, it is also critical to maintain a comprehensive vision for creating a “walkable” and “bikable” Oshkosh, which includes bike lanes, shared roadways, multi-use trails, sidepaths and sidewalks. Not only does this plan recommend specific facility improvements, it sets policy priorities and offers guidance and tools to help promote bicycling and pedestrian safety, efficiency and effectiveness.

The overriding principle for bicycle and pedestrian friendly streets is to create public right-of-ways that work effectively for and benefit all modes of transportation. Regardless of whether streets and roads are included in this plan's designated bicycle network, bicyclists will use all available roads. Therefore, the recommended bicycle network has been developed to formalize safe routes from "origins" to "destinations", eliminate gaps within the current network, continue the expansion of the existing off-road facilities utilizing natural and other areas of opportunity, and improve access and connectivity for the bicyclist within the Oshkosh community.

Best facility practices must be considered when any transportation network is developed, reconstructed or augmented. Policy and project priorities for pedestrians are much more programmatic while those for bicycles tend to be more physical in nature.

Pedestrian Facilities

Oshkosh's pedestrian framework is partially in place in that sidewalks or trails are required for new subdivisions and other development. Sidewalks form the backbone of the physical portion of our pedestrian transportation network, however, what constitutes a "pedestrian-friendly" or "walkable" community is much more than merely having sidewalk facilities in place. High quality, navigable, appropriately sized sidewalks certainly are one part of the equation; however, other elements and amenities such as crosswalks, signalization, traffic calming, pedestrian-scale lighting, street furniture, and space separating vehicle traffic lanes from sidewalks are also extremely important. Best facility practices for Oshkosh pedestrian facilities include three primary facility types:

- Sidewalks - paths located within a right-of-way along the side of a road and are normally separated from the vehicular section by a curb
- Sidepaths - segregated facilities located next to or alongside a roadway separated from motor vehicle traffic by a physical barrier and/or increased greenspace.
- Multi-use trails - segregated trails or paths located within their own right-of-way or easement area and are not closely associated with a roadway.

Bicycle Facilities

Suitably designed bikeways can be identified formally as "Bike Routes." These routes indicate a major route that most bicyclists will feel comfortable using.

This plan recommends a comprehensive and interconnected bicycle network by suggesting a facility type (bike lane, sharrow, multi-use trail) throughout the Oshkosh area. It is important to state that the design approach behind the recommended bicycle facility types and routes contained within this planning document was guided and shaped with a critical design consideration in mind.

Design approach

The fundamental design consideration behind route determination that must be described is what type of bicyclist is best served by the City's bicycle facility network. The Bicycle and Pedestrian Stakeholder/Steering Group made the

decision that all network route and facility choice decisions had to be made with the basic bicyclist in mind, not the novice or advanced rider. To this end, the design approach contained the principal of locating designated bicycle routes off unsafe, high traffic volume streets & truck routes, wherever possible. Furthermore, the group also focused on route placement as it related to existing traffic controlled intersections and the separation of bicycle travel from vehicular traffic such as the utilization of park properties, greenways and rail corridors

The proposed recommended improvement is delineated into three sections that correlate with facility recommendations:

- Signed and striped roadways - a portion of the roadway which has been designated by striping, signing and other pavement markings for the preferential or exclusive use by bicyclists.
- Signed and/or shareways - also known as stripeless bike lanes, do not have corridors reserved for bicyclists, but signs and pavement symbols indicate that they are bike routes and heavily used by bicyclists.
- Multi-use trail - segregated trails or paths located within their own right-of-way or easement area and are not closely associated with a roadway.

Short range (0-5 years) recommendation cost estimates are included in the plan but estimates for longer term recommendations (6+ years) are not as they would not be useful because their timeframes are too far out to be realistically calculated.

Recommendations within the plan are assigned a “Timeframe” based on the ability to develop in a timely manner and their importance in meeting plan goals and objectives. Priority for facilities was done with an assumption that they could be completed within the allotted timeframe, they create a connected network on the interim and that “funds were available”, as predictions on funding levels could not be accurately estimated. Facility development fall under two headings:

- Priority Facility Improvements: 0-5 years
- Future Facility Improvements: 6 or more years

Recommendations within the first five-year timeframe are viewed as the most vital for fulfilling the short-term goals of the Bicycle and Pedestrian Stakeholder/Steering Group and also represent existing planned projects that will soon be implemented. Future Facility Improvement recommendations are longer-term desires requiring a more sustained effort to implement.

As many of the recommendations within the plan require coordination with roadway reconstruction and potential property acquisition, especially in the case of bike lane and multi-use trail development, an interim solution to connect system facilities must be the temporary use of signed and/or shared facilities, especially if sign and striped facilities (bike Lanes) are included as part of the long-range/future facility improvement schedule. Therefore, flexibility in facility development, using a less intensive facility such as sharrows/signage or simply signage when bike lanes are determined to be unfeasible or are a longer timeframe out are recommended at the time a facility is being created. It is very

important that the City consider all facilities, such as automobile parking, bike lanes/sharrows, terrace, etc. to determine which are most important. The aim of this plan is to maintain a balance of transportation related needs in the community. It is not intended that the recommendations be implemented as a “winner takes all” scenario but a “win-win” between potentially competing interests.

The road diet concept (reducing the number of travel lanes located on a roadway) may be an appropriate and feasible technique to gain right-of-way area for bike facility installation and pedestrian safety. However, the Bicycle and Pedestrian Stakeholder/Steering Group has not formerly recommended road diets for any specific streets as they believe they need further study on an individual street-by-street basis during restriping or reconstruction.

1.3.4 Development and Maintenance Costs

Development cost estimates for on-street facility types within the plan were determined by using actual costs experienced by Sheboygan County, WI and are current in 2011. Trail cost estimates are based on the development of trails including the Badger State Trail (linking Madison to Fitchburg), which was completed in 2010.

Maintenance cost estimates were derived from various state and municipal sources with the assumption that restriping/resymbolization would be necessary every three years. Trail maintenance cost estimates are derived from the American Trails Partnership based on surveys of their membership.

1.4 FUNDING OPPORTUNITIES

The Plan recommends that the City of Oshkosh appropriate annual funds for bicycle and pedestrian improvements just as it does for other roadway projects. In addition, bicycle and pedestrian projects may be eligible for state or federal funding. Pedestrian improvements that benefit public health and safety should be funded through the general fund, supplemented by available state and federal grants, rather than through assessment.

1.5 APPENDICES

The plan is supplemented by seven appendices that are referenced within the document and help to provide information that is readily accessible and/or would potentially be “lost” within the body of the document. These appendices are described below:

Appendix A: City of Oshkosh Bicycle and Pedestrian Plan Survey Results- A survey to solicit information regarding biking and walking within Oshkosh by Oshkosh residents and visitors. Posted on the web as well as provided at bicycle and run/walk events.

Appendix B: Origins and Destination Maps- Origin and destination maps were derived from the initial public informational meeting identifying where interested parties are coming from and going to as well as areas of concern.

Appendix C: Proposed 41 Bicycle and Pedestrian Improvements - This appendix details improvements proposed by the Department of Transportation.

Appendix D: Pedestrian Hazard Areas- Areas and intersections identified as pedestrian hazard areas such as schools, parks, and commercial areas as well as long blocks that should be given special attention.

Appendix E: Recommended Bicycle Route/Improvement Maps- Depicts the recommended bicycle facility network including routes, facility types and areas of intersection improvements.

Appendix F: Priority Facility Improvement Map- Depicts the recommended bicycle facility considered to be “priority” and that can be developed within a five year period.

Appendix G: Supplemental Road Diet Information- Information, primarily articles and study’s, which describe the Road Diet concept.

Appendix H: Table of Suggestions/Comments for Consideration- Compilation of comments and suggested changes to the plan received during its formal review process.

2 INTRODUCTION

The City of Oshkosh has prepared this Comprehensive Pedestrian and Bicycle Circulation Plan to develop sound strategies for improving bicycle and pedestrian transportation throughout the Oshkosh area for users of varying abilities. The planning area includes the Oshkosh metro area and is illustrated in Appendix E.

This document incorporates recommendations set forth in a number of planning documents including the City of Oshkosh Comprehensive Plan 2005-2025, the Oshkosh Area Safe Routes to School Plan, the 2007 Oshkosh MPO Long-range Transportation/Land Use Plan and the City of Oshkosh 1998 Pedestrian and Bicycle Circulation Plan.

The recommendations set forth in this plan are designed to increase transportation safety for pedestrians, bicyclists and motorists. Infrastructure improvements such as sidewalks, marked crosswalks, bike lanes, paved shoulders, multi-use trails and traffic and informational signs are among the type of facilities recommended to improve conditions for the non-motoring public. Opportunities to educate bicyclists about safety and promote bicycling as a viable mode of transportation are discussed. Additionally, recommendations to improve enforcement and education regarding traffic laws affecting bicyclists and walkers are also presented.

2.1 WHY IS THIS PLAN IMPORTANT?

Before the 1900's, bicycling and walking were common modes of transportation in the United States. Transportation infrastructure and land use patterns reflected the need to accommodate these travel modes. Compact communities allowed people to walk to most destinations. Interestingly, early American urban roads were originally paved to help bicyclists reach their destinations. As the pace of the American lifestyle quickened and automobiles were made affordable to the population, bicycling and walking gradually dropped in priority as modes of transportation. Since the late 1940's, motor vehicles have been the dominant influence on transportation and land use patterns and subsequently, these land use patterns have changed behavior patterns. The convenience and flexibility of the automobile are easily recognized; however, automobiles are not the most efficient mode of travel for many types of trips. The benefits of alternative modes of travel such as bicycling and walking are particularly significant for short urban trips. Arguments for encouraging these modes of travel are both functional and philosophical:

- Bicycling and walking are two of the most cost efficient modes of transportation with regard to operation, development and maintenance of facilities.
- Bicycling and walking are two of the best forms of physical exercise and therefore can effectively enhance the health of the citizens of Oshkosh.

- Bike and pedestrian facilities developed for transportation purposes can simultaneously enhance recreation and tourism opportunities within Oshkosh.
- Bicycling and walking do not contribute to noise or air pollution and thus contribute to the health of our community. Off-road facilities developed for bicycling and walking can protect and enhance our natural resources.
- Bicycling and walking promote social interaction of families and community members.

The premise of “multi-modalism” is simple: to create a transportation system that offers not only choices among travel modes for specific trips, but more importantly, presents these options so that they are viable choices that meet the needs of individuals and the Oshkosh community as a whole.

As part of the federal initiative to encourage multi-modal transportation in general and bicycle transportation in particular, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires that long range planning of transportation systems include provisions for bicycling and walking. This legislation builds on the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) to supply funds and a programmatic framework for investments in transportation infrastructure. SAFETEA-LU also provided funding for all fifty states to initiate a Safe Routes to School program to enable and encourage school children (K-8) to walk and bicycle to school.

In Wisconsin, bicycling and walking have been promoted through WisDOT's TransLinks 21 Plan. This transportation initiative is a comprehensive, twenty-five year transportation plan that was developed through two years of planning and public involvement. The TransLinks plan calls for bicycle and pedestrian provisions on state highway projects, inclusion in Metropolitan Planning Organization's (MPO) plans and also recommends the development of a comprehensive State Bicycle Plan and Pedestrian Plan. While nearly eight million Americans enjoy bicycling and all are pedestrians, only 5.5% of all urban trips in the United States are by walking and 0.9% by bicycling. Safety, distance and traffic conditions are reasons often cited for the infrequent use of these travel modes. A 1990 Harris Poll suggests that twice as many people would walk or bicycle as a primary means of transportation if better facilities were available. In this fast-paced society, time and distance are perhaps the greatest impediments to non-motorized travel. Yet nearly 40% of trips made in the U.S. are less than two miles. Trips of this length are very easily accomplished by average bicyclists, and when compared to driving, require little additional time.

Walking and bicycling are underutilized modes of transportation in the Oshkosh area. While mean travel time to work in Oshkosh was under 16.5 minutes in 2006-2008, very few choose to commute by bicycle (0.2%) or by walking (3.8%) (US Census 2006-2008). The relatively small number of walking and bicycling trips can be attributed to impediments such as traffic conditions, safety concerns, transportation infrastructure and topography. This plan is designed to increase levels of bicycle use by making recommendations to reduce these impediments,

and to change the prevailing attitude that using an automobile is easier and more convenient than bicycling or walking.

2.2 HOW WAS THE PLAN DEVELOPED?

Development of this plan was administered by city planning staff with oversight from the Pedestrian and Bicycle Stakeholder/Steering Group. It was initially prepared by Schreiber/Anderson Associates, a consulting firm out of Madison, Wisconsin and had multiple portions rewritten using their draft as a base. The stakeholder/steering group included representatives from various organizations and reflected a broad cross-section of biking and walking interests. They provided guidance and met regularly over an 24 month time period to review the work to date. There were also two public informational meetings held during the planning process.

2.3 DEFINITION OF TERMS

The language used within this plan document is meant to be easy to read and understandable, however many of the terms used are not common place and are specific terms used primarily by engineers, planners, bicycle enthusiasts and pedestrian advocates. Although all the concepts within this plan are described and defined within the body of the text, below is an alphabetical list of terms with the definitions that may not be clearly or fully understood by the general public.

Bicycle Facility- A general term denoting improvements and provisions that accommodate and encourage bicycling, including but not limited to parking and storage facilities, and shared roadways not specifically defined for bicycle use.

Bike Box (Also known as an Advanced Stop Line)- Road markings at signalized road junctions allowing bikes a “head start” when the traffic signal changes from red to green.

Bike Lane - A portion of a roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and signs.

Bulbout/Bumpout (also known as curb extensions, chokers or neckdowns) – Extensions of the sidewalk or curb line out that reduce curb-to-curb effective roadway lane widths.

Chevron- A double directional arrow used with a bicycle symbol as pavement marking painted on the roadway to designate a sharrow and remind motorists and cyclists that they are sharing the roadway.

Chicane- Curb extensions that alternate from one side of the roadway to the other, forming S-shaped curves.

Choke (also known as Bulbout/Bumpout, curb extensions, or neckdowns) - Extensions of the sidewalk or curb line out that reduce curb-to-curb effective roadway lane widths.

Complete Streets- Roadways designed and operated to enable safe, attractive, and comfortable access and travel for all users, including pedestrians, bicyclists, motorists and public transport users of all ages and abilities.

Crosswalk- Any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by pavement marking lines on the surface, which might be supplemented by contrasting pavement texture, style, or color

Cul-de-sac- A dead end, closed, no through road/court. Street with only one inlet/outlet.

Curb Extension (also known as bump-outs/bulb-outs or neckdowns) - Extensions of the sidewalk or curb line out that reduce curb-to-curb effective roadway lane widths.

Designated Bicycle Route— A system of bikeways officially designated and including appropriate directional and informational route signs.

Diverter- Barriers placed diagonally across an intersection, blocking certain movements.

Easement- A certain right to use the real property of another without possessing it. Easements are helpful for providing pathways across two or more pieces of property

Gutter Pan- A depression which runs alongside a city street, usually at the curb and diverts rain and street-cleaning water away from the street and into a storm drain.

Intermodal- The use of more than one mode of transportation, including but not limited to automobile, mass transit, bicycling, walking.

Manual of Uniform Traffic Control Devices (MUTCD)- A document that defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic. The MUTCD is published by the Federal Highway Administration (FHWA).

Median- Area between two roadways measured from the edge of the travel way to the edge of the travel way.

Median Barrier- Raised islands located along the centerline of a roadway and continuing through an intersection to block cross traffic.

Motor vehicle- A vehicle whose propulsion is provided by an engine or motor. The internal combustion engine is the most common motor choice, although an electric motor, a combination of the two (hybrid electric vehicle), or other types are also included.

Multi-use trail- A travelway separated and distinct from facilities in the right-of-way which are physically separated from motorized vehicle traffic by an open space or barrier either within the right-of-way or within an independent area. Multi-Use paths are typically used exclusively by pedestrians, bicyclists, and other nonmotorized users.

Neckdown (also known as Bulbout/Bumpout, chokers or curb extensions) - Extensions of the sidewalk or curb line out that reduce curb-to-curb effective roadway lane widths.

Neighborhood Traffic Circles - Barriers placed in the middle of an intersection, directing all traffic in the same direction.

Nonmotorized Vehicle- A vehicle whose propulsion is provided by means other than an engine or motor. These include but are not limited to bicycles, skateboards, and animals.

Park-and-ride- A car park that allow drivers to leave their vehicles and transfer to other transportation choices such as walking, bicycling, mass transit, or carpooling. The vehicle is stored in the car park and retrieved when the owner returns

Pedestrian- A person on foot, in a wheelchair, on skates or on a skateboard.

Pedestrian Facilities- A general term denoting improvements and provisions made to accommodate and encourage walking.

Right-of-way- A portion of land that is granted, through dedication, easement or other mechanism, for public purposes including transportation purposes, such as for a trail, driveway, rail line or street. A public right of way is not restricted by land ownership and grants travel access to all.

Road Diet- A technique in transportation planning whereby a road is reduced in number of travel lanes and/or effective width in order to achieve systemic improvements. A typical road diet technique is to reduce the number of lanes on a roadway cross-section. One of the most common applications of a road diet is to improve safety or provide space for other users in the context of two-way streets with 2 lanes in each direction. The road diet reduces this to 1 travel lane in each direction. The freed-up space is then used to provide sidewalks, landscaping strips, bicycle lanes, wider lane widths on remaining traffic lanes, two-way turn lane or centre turn lane. Additional information is located in Appendix G.

Roundabout- A circular intersection with yield control at entry, which permits a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island.

Rumblestrip- a series of intermittent, traverse areas of rough textured, slightly raised, or depressed road surface typically located across travel lanes, on a roadway shoulder or centerline/islands to alert road users of unusual or special road conditions.

Safe Routes To School (SRTS)- The SRTS Program empowers communities to make walking and bicycling to school a safe and routine activity once again. The Program makes funding available for a wide variety of programs and projects, from building safer street crossings to establishing programs that encourage children and their parents to walk and bicycle safely to school

Shared Roadway- A roadway that is officially designated and marked as a bicycle route, but which is open to motor vehicle travel and upon which no bicycle lane is designated.

Sharrow (also known as stripeless bike lanes)- An arrow-like design painted on a roadway to mark a bicycling route. Sharrows are placed in the center of a travel lane to indicate that a bicyclist may use the full lane. The name "sharrow" is a contraction of "shared roadway marking.

Shoulder- The edge or border running on either side of a roadway. It can be dirt, grass, gravel or pavement typically intended for emergency stops. In most places there is a solid white line separating the shoulder and the road.

Sidepath- Segregated travel facilities located next to or alongside a roadway that are separated from the roadway and divided from motor vehicle traffic by a physical barrier and/or increased greenspace.

Sidewalk- That portion of the street between the curb line or lateral line of the roadway, and the adjacent property line or on easements of private property that is paved or otherwise improved and intended for use by pedestrians.

Speed Hump/Speed Bump- Rounded raised pavement devices placed across roadways to slow and/or discourage traffic.

Speed table- Flat topped speed humps often constructed with a brick or other textured material to slow traffic.

Traffic calming- a way to design streets, using physical measures, to encourage people to drive more slowly and is self-enforcing.

Trailhead- A point at which a trail begins, where the trail is often intended for hiking, biking, horseback riding, or off-road vehicles. Modern trailheads often contain rest rooms, maps, sign posts and distribution centers for informational brochures about the trail and its features, as well as parking areas for vehicles and trailers

Transit (Public)- A shared passenger transportation service which is available for use by the general public, as distinct from modes such as Taxicab, car pooling or hired busses which are not shared without private arrangement

Wisconsin Department of Transportation (WisDOT)- State Agency responsible for planning, building and maintaining Wisconsin's network of state highways and Interstate highway system. The department shares the costs of building and operating county and local transportation systems - from highways to public transit and other modes. WisDOT plans, promotes and financially supports statewide air, rail and water transportation, as well as bicycle and pedestrian facilities.

3 PLANNING PROCESS

The planning process began with the formation of a vision, goals and objectives that were the basis for evaluating and guiding the overall plan. Plan goals were refined through the planning process to suit the local conditions as determined by an inventory and analysis of existing data. Inventories of conditions included historical data, field observations (conducted by traveling the planning area), research of local and county planning documents and meetings with the public and municipal staff.

Planning and design criteria derived from Wisconsin Bicycle Planning Guidelines, Wisconsin Bicycle Facility Design Handbook, AASHTO Guidelines for Developing Bicycle Facilities, AASHTO Guidelines for the Planning, Design, and Operation Pedestrian Facilities, and The National Bicycling and Walking Study were used as general analysis criteria. Following the analysis of planning considerations, city staff, the Bicycle and Pedestrian Stakeholder/Steering Group and the public reviewed the interim plan.

The following sections describe the public process and summarize the results of these efforts.

3.1 BICYCLE AND PEDESTRIAN STAKEHOLDER/STEERING GROUP MEETINGS

The genesis for the development of this plan began with the formation of the City of Oshkosh Bicycle and Pedestrian Stakeholder/Steering group. Membership includes advocates, municipal representatives, recreation groups, and other members of the Oshkosh community. The steering group was the direct oversight authority over creation of this plan and shaped its vision, content and recommendations. They met approximately 18 times over a 24 month period and created the draft plan from beginning to finalization. It is recommended that a form of this body become formalized as an official City of Oshkosh commission/board and remain intact after adoption of this plan to act as a clearinghouse and resource for the City of Oshkosh to help grow bicycle and pedestrian mobility within the Oshkosh metro area.

3.2 SURVEY

The public process used for the preparation of this plan includes multiple opportunities to gather stakeholder feedback. One opportunity was the creation of an online survey posted on the City Planning Department's website. Notification of the survey was provided via word of mouth, the Tour-de-Titan ride, the University of Wisconsin-Oshkosh website and various media outlets. Results from the survey are included in Appendix A.

3.3 PUBLIC MEETINGS

There are two public information meetings held during the planning process positioned to “bookend” the plan creation prior to review and recommendation by the interested/affected city boards/commissions and the City Council. The first public information meeting is an introductory Kick-Off meeting to outline the process and solicit input; the second is an unveiling of the draft plan to the public as an open house. Following the public information open house, the draft plan is brought before multiple city boards and commissions for formal review and recommendations. Once reviewed by individual commissions and boards, a workshop before the Common Council takes place for presentation of the plan in-depth discussion on its elements. Formal public hearing and adoption of the draft plan by the Common Council takes place following the Council workshop.

The schedule of public meetings and workshops as well as description of each are as follows:

Public Informational Meeting: Kick-Off

This meeting was held August 30, 2009 at City Hall, 215 Church Avenue, Oshkosh WI. It was attended by approximately 35-40 people. The purpose of this “open house” was to display maps (bicycle audit, etc.), draft goals and objectives, and to allow participants to discuss their preferences about biking and walking in the Oshkosh area. The meeting provided an informal opportunity for community members to discuss issues and aspirations with members of the Stakeholder/Steering group and the consultant. Some of the discussions included:



- Highway 41 as a barrier to safe access around and out of the city.
- Significant origin and destinations.
- Preferred routes (east/west and north/south connections).
- Safety of existing routes as major areas of concern.
- Connections to the WIOUWASH Trail.
- “Origins and Destinations” Maps are provided in Appendix B.

Additional information gathering took place through a Pedestrian and Bicycle Plan informational kiosk/display manned at the Tour De Titan, UWO Transportation Day, multiple running-walking events, special interest group presentations to groups such as the League of Women Voters, Winnebago County Healthy Recreational Opportunity Committee and the State of the City.

Government Body Workshop

A workshop/presentation to City of Oshkosh Boards and Commissions including a joint board/commission presentation and discussion sponsored by the Traffic Review Advisory Board and including members from the Sustainability Advisory Board, Advisory Parks Board, the Plan Commission and the Common Council on July 12, 2011 at City Hall, 215 Church Avenue, Oshkosh WI. It was attended by

a majority of individuals serving on the specific boards/commissions as well as six of the seven Common Council members. The primary purpose of the workshop was to introduce the key concepts and recommendations included in the draft plan well before it went to a public open house or the individual boards/commissions for formal review and recommendation. This meeting can be viewed online at: http://www.oshkoshcommunitymedia.org/traffic_review_stream.htm

Public Informational Meeting: Open House

A second public meeting to “unveil” the plan was held on August 11, 2011 at the Oshkosh Seniors Center, 200 North Campbell Road, Oshkosh, WI. It was attended by approximately 80-90 people, many of whom have followed the progress of the plans creation over the planning period. The open house included a presentation of the plan to the general public, discussion on the plan elements and recommendations and opportunity for community comment. Presentation materials included multiple sets of display boards detailing the Vision, Goals and Objectives, and Best Facility Practices for Pedestrians and Bicycles as well as maps depicting the proposed Bicycle Route System, the Five-Year Priority Facility Improvements and Pedestrian Hazard Areas. Questions were fielded by city staff and Stakeholder/Steering group members and comments and suggestions were provided by attendees, which were discussed at the individual board/commission meetings listed below and partially included in the suggestion/comments located in Appendix H.

Sustainability Advisory Board

A formal review of the plan was held by the Oshkosh Sustainability Advisory Board on August 1, 2011 during their regularly scheduled meeting at City Hall, 215 Church Avenue, Oshkosh WI. Questions were addressed and comments/suggestions provided with the result being a recommendation for approval being made by the Sustainability Advisory Board to the Common Council. This meeting can be viewed online at: http://www.oshkoshcommunitymedia.org/sustainability_advisory_board_stream.htm

Advisory Parks Board

A formal review of the plan was held by the Oshkosh Advisory Parks Board on August 8, 2011 during their regularly scheduled meeting at City Hall, 215 Church Avenue, Oshkosh WI. Questions were addressed and comments/suggestions provided with the result being a recommendation for approval being made by the Advisory Parks Board to the Common Council.

Traffic Review Advisory Board

A formal review of the plan was held by the Oshkosh Traffic Review Advisory Board on August 9, 2011 during their regularly scheduled meeting at City Hall, 215 Church Avenue, Oshkosh WI. Questions were addressed and comments/suggestions provided with the result being a recommendation for approval being made by the Traffic Review Advisory Board to the Common Council. This meeting can be viewed online at: http://www.oshkoshcommunitymedia.org/traffic_review_stream.htm

Plan Commission

A formal review of the plan was held by the Oshkosh Plan Commission on August 16, 2011 during their regularly scheduled meeting at City Hall, 215 Church Avenue, Oshkosh WI. Questions were addressed and comments/suggestions provided with the result being a recommendation for approval being made by the Plan Commission to the Common Council. This meeting can be viewed online at:

http://www.oshkoshcommunitymedia.org/planning_stream.htm

Common Council Workshop

A workshop/presentation of the plan was held by the Oshkosh Common Council on August 23, 2011 prior to their regularly scheduled meeting at City Hall, 215 Church Avenue, Oshkosh WI. All recommendations, comments and suggestions received by the general public and the individual boards/commissions were provided including the staff response to them. They are included in Appendix H. The workshop can be viewed online at:

http://www.oshkoshcommunitymedia.org/council_stream.htm

Common Council

Public Hearing and final Common Council review was held at the City of Oshkosh Common Council meeting on September 27, 2011 at City Hall, 215 Church Avenue, Oshkosh, WI. The Common Council approved the draft plan amending it to include the comments and suggestions received as a new appendix item. This meeting can be viewed online at:

http://www.oshkoshcommunitymedia.org/council_stream.htm

4

CURRENT CONDITIONS and INVENTORY

The inventory and analysis of factors affecting bicycle and pedestrian transportation in Oshkosh include an assessment of bicycle and pedestrian access, population and transportation patterns, existing bicycle and pedestrian facilities, destination identification, and a review of state and local ordinances and plans.

4.1 ASSESSMENT OF BICYCLE AND PEDESTRIAN FRIENDLINESS

4.1.1 BRIDGE ACCESS

The Oshkosh area consists primarily of a grid pattern street system that is traversed by the area's waterways and highways. As a result, bridges are a major concession for bicycle and pedestrian travel. There are 5 bridges that cross the Fox River and roughly divide the City between north and south. All of the following bridges are located within the planning area.

The major bridges along arterial and collector streets that have been assessed for active transportation include (from east to west):

1. USH 45 (Main Street Bridge): provides a raised, separated sidewalk for pedestrian accommodation. There are four travel lanes for motorized traffic and are wide enough to accommodate bicycles. However, the decking surfaces of all of the travel lanes on the bridges can be treacherous for bicyclists, and most riders prefer to use the sidewalk.
2. Jackson/Oregon Street Bridge: four traffic lanes are wide enough to accommodate bicycles.
3. Wisconsin Street Bridge: good pedestrian facilities, four travel lanes for motorized traffic with a bike lane on the deck with special bike friendly plates on the lift spans. The newly constructed bridge has wide sidewalks to accommodate both bicyclists and pedestrians but the transition areas from the bridge sidewalk to the adjacent streets are lacking.
4. Congress Avenue/Oshkosh Avenue/STH 21 Bridge: good pedestrian facilities, travel lanes are wide enough to accommodate bicycles.
5. USH 41 overpasses and underpasses: Recently reconstructed and current plans for reconstruction of USH 41 call for bicycle and pedestrian improvements on all overpasses and underpasses to varying degrees from wider outside lanes to bike entrance/exit ramps for sidewalk use. See Appendix C.

4.1.2 STREET AND HIGHWAY SYSTEM ACCESS

The Oshkosh urbanized area is connected to the surrounding suburban and rural areas by a system of State and County highways. USH 41 provides a north-south route through the area. Travel east to west is primarily accommodated through any number of county and state highways. Bicycle and pedestrian travel is prohibited on USH 41. The County Highway (CTH) system and state highway system (STH) is a primary linkage between extraterritorial areas and the Oshkosh urbanized area and provides limited bike facilities.

4.1.3 BICYCLE AND PEDESTRIAN SYSTEM ACCESS

This section includes a discussion on the importance of connectivity of transportation facilities, identifying origin/destination points, and understanding the function of bicycles and pedestrian facilities for both transportation and recreation.

Connectivity

The importance of connectivity cannot be overstated. If a segment of road, trail, or sidewalk does not link a user's origin with their intended/desired destination it may not be a viable transportation option for that trip. However, if linkages are available from this segment to other segments, facilities, or destinations, then the whole system is improved. For example, many bicycle commuters will use a series of on-road facilities (e.g. bike lanes), off-road facilities (multi-use trails), and other connections (local paths to buildings or structures) during a typical trip. Ensuring these facilities are "connected" in some way increases the likelihood they will be considered as a regular transportation option.

Within Oshkosh's urbanized area there are a few trails, such as the developing Riverfront Trail and the WIOUWASH State Recreation Trail, that provide important linkages between commercial centers, recreation areas, and environmental resources. Enhancing the usability of existing trails by increasing the number of connections to priority destinations is vital to creating a more bicycle and pedestrian friendly transportation system.

Intergovernmental linkages are just as important. Census 2000 indicates 82.4 percent of workers who reside within the county also work within the county and 69% of City of Oshkosh residents have less than a 20 minute drive to work. Connections between places of residence to place of employment are integral to increasing mode share. Often, bicycle commuters who reside in suburban or rural areas use county highways to access the urban transportation network. Providing safe and adequate facilities along these "urban escape routes" creates opportunities for commuters who want to bike to work the opportunity to do so. Similarly, connections to area trails, such as the WIOUWASH State Recreation Trail, can increase comfort levels for bicyclists of all abilities.

Transportation versus Recreation Function

In terms of funding federal transportation facilities, there is a restriction in 23 U.S.C. 217(i) that a bicycle project must be principally for transportation rather than recreation purposes. However, the restriction is only for bicycle projects, not for pedestrian projects or multiple use trail projects.

A facility serves a transportation purpose when it is used to get people from Point A to Point B, and could likely substitute for motor vehicle trips. The Stakeholder/Steering Group addresses this issue by linking bike routes to Oshkosh area destinations (such as commercial, religious, educational, recreational, places of employment and community buildings). Recreation trips also may occur on the same facility.

A facility is a recreation facility when the primary purpose is to use the facility itself. For example, a backcountry hiking trail is a recreational facility because its intent is not transportation. All of the trails, routes, and facilities in the Oshkosh area are transportation facilities that may also serve a recreation or tourism function.

Origins and Destinations

Generally, motorized and non-motorized transportation users share similar origins and destinations - but use different modes to accomplish their goal of arriving at a destination safely and efficiently. Arterial and collector roads that effectively deliver many motorists also provide the most direct and continuous routes for many bicyclists. These systems, however, are not always designed to accommodate the special needs of the average bicyclist. When roadway conditions are unsuitable for bicyclists, infrastructure design treatments may be used to improve the roadway or an alternative corridor may be selected. To reduce the potential of bicycle-vehicle conflicts where possible, the Stakeholder/Steering Group chose to use alternate street networks for the bicycle facility routes to improve overall safety and comfort of riders.

Potential use patterns are not always reflected by the existing transportation system, but can be estimated by locating trip generators (origins and destinations) and projecting areas of population growth and future land use patterns.

Generally speaking, people are less willing to commute to work by bicycling and walking if the travel time is more than 20 minutes. Directness of the route, physical condition of the bicyclist, number of stops and availability and proximity of bicycle parking facilities will affect how far one is able to cycle in 20 minutes. The average adult cyclist commonly travels 3 to 4 miles in 20 minutes. From a bicyclist's standpoint, this 3-4 mile trip defines the service area of each destination and helps to define commuting use patterns. Recreational riders will ride much farther in a day - trips of 30 to 40 miles are not unusual and tours of 80 to 100 miles are offered regularly during the biking season in Wisconsin. Fitness riders and bike racers will travel 30 to 50 miles in a typical training ride.

At the regional level, other communities and major recreational destinations are the prime trip generators. Within the urban and suburban areas, these destinations also include local shopping, employment, and government centers.

4.1.4 TRANSIT INTERFACE

The City of Oshkosh Transportation Department provides public transportation services in the Oshkosh area. Owned by the City of Oshkosh, limited service is also provided to the City of Neenah. Most transit users access the bus system on foot and rely on pedestrian facilities. Inadequate pedestrian facilities not only make it more difficult to use the bus, they can also pose safety hazards to riders. Increasing the number of shelters or street furniture for pedestrians waiting for buses may improve comfort levels for transit users. Transit users who access the bus system via bike must rely on the availability of an adequate location to lock their bike once arriving at the bus stop, or must bring their bicycle with them. Oshkosh has recently started retrofitting buses with front-end bicycle racks so users can transport their bicycles to their destination.

4.2 COMMUNITY AND USER CHARACTERISTICS

This section includes Census 2000 data related to walking and biking in the Oshkosh area. It should be noted that most of this data is derived from the "long-form" which was randomly distributed to 1 in 6 households and while this should not skew results, the time of enumeration may have an impact. The Census is recorded in March making conditions in north central Wisconsin less than ideal for biking and walking. The data should be used to establish a baseline of users in the planning area, to compare to other communities, and to reserve for evaluation against the next Census (2010).

4.2.1 SOCIOECONOMIC DATA (2000)

This analysis is based on the information gathered from the 2000 Census and the WI Demographic Services Center.

Population

In 2000, approximately 62,916 people and 25,420 households lived within the City of Oshkosh. 2008 estimates had a population of 65,920. The area has continued to grow over the last couple decades, increasing in population by eight percent between 1980 and 1990 and fifteen percent between 1990 and 2000. This anecdotal evidence is substantiated by WI Demographic Services Center. The estimates show Winnebago County has increased from 64,721 units in 2000 to 71,736 in 2008 which represents an 11% increase.

Households

In Oshkosh, the average household size in 2000 was 2.2 persons per household. However, average household size can vary significantly by neighborhood. Household size can also change over time. Over the last several decades, average household size has decreased dramatically, due to people having fewer children, people waiting longer to have children, more single-parent families, more older people living alone, and rising incomes which allow persons to afford to live alone.

4.2.2 TRAVEL TO WORK

Means of Travel

The table below reflects how workers aged 16 years or older in the City of Oshkosh get to work on a daily basis compared to state and national figures for the same. This data shows that essentially the same number of City of Oshkosh workers drove alone (79.9%) in 2000 to get to work as did others in the state (79.5%), both slightly higher than the nation (76%). Many of these trips for the citizens of Oshkosh (over 54%) took less than 15 minutes. A higher percentage of City of Oshkosh workers walked or biked to work than in the state or nation.

Table 4-2-2: Means of Travel to Work for Workers 16 Years or Older (2000)

2000 Bureau of Census Data	United States		Wisconsin		City of Oshkosh	
	Number	Percent	Number	Percent	Number	Percent
Total Population 16 and over	128,279,228		2,690,704		31,839	
Drove Alone	97,102,050	75.7	2,138,832	79.5	25,449	79.9
Bicycled	488,497	0.4	11,635	0.4	230	0.7
Walked	3,758,982	2.9	100,301	3.7	1771	5.7
Travel Time to Work (mode of travel not specified)						
Less than 10 Minutes	17,868,011	14.4	533,891	20.7	8,917	29.0
10 to 14 Minutes	18,618,305	15	476,569	18.4	7,941	25.8

4.2.3 LAND USE

The importance between land use and transportation should also not be underestimated. Land use patterns and development decisions are often seen as controlled solely by market forces, leaving public agencies to respond to the transportation demand created in their wake. However, public land use policies directly affect private land use decisions such as zoning regulations and minimum parking requirements. Therefore, land use policies need to be considered in relation to the impact of transportation just as transportation policies need to be considered in relation to land use.

Transportation systems and land use patterns have a well-documented reciprocal relationship. As communities have grown, the demands for transportation system improvements have also grown. However, these transportation improvements have also provided more convenient access to undeveloped land farther out, thus spurring further growth. More than any other transportation system, it has been the road network and the prevalence of the automobile that has impacted land use patterns over the past half-century.

Notable land use patterns or issues for the City of Oshkosh include:

- Water divides the urbanized area significantly.
- The majority of city arterials are four lane with no on-street parking and immediately adjacent sidewalks.
- Development as it exists today directly corresponds to the freeway system.

4.3 INVENTORY AND ASSESSMENT OF EXISTING FACILITIES

4.3.1 BIKING CONDITIONS

An analysis of the walking and bicycling conditions within the Oshkosh planning area was performed by SAA staff. The analysis included a review and confirmation of the conditions recorded by the information solicited at the Public Informational Meeting on August 20th, 2009. The assessment was performed with special attention toward identifying key destinations within the community as well as key links, or “urban escape routes”, between the country and the urbanized area. Often, the conditions in these critical areas determine the usability of the entire route. Limitations include volume and type of traffic (cars, trucks), high speeds, and limited roadway space for accommodation.

Minor arterials and collectors were evaluated throughout the planning area. Local urban roads were thought to be bikeable unless otherwise identified. The listing below separates observations into north and south of the Fox River.

Observations/inventory was based on logical east/west and north/south routes and suggestions/comments solicited at the public informational meetings.

Existing conditions of note for bicyclists (esp. minor arterials and collectors, local roads where identified):

North/West of the Fox River

North of W. Snell Road between Lake Butte des Morts and Lake Winnebago

- County Road A: no bicycle or pedestrian accommodations – 4 travel lanes, no shoulder
- Jackson Street: no bicycle accommodations – 4 travel lanes with an intermittent TWLTL; sidewalks on portions of the road

South of Snell Road, north of W. Nevada Avenue

- Bowen Street: no bicycle accommodations, 2 travel lanes, parking lane; sidewalks on both sides of street
- Harrison Street: wide street with parking lane, suitable as is for cycling; sidewalk on one side of street
- East Murdock Street: no bicycle accommodations, 4 narrow travel lanes, TWLTL on one stretch of street, pedestrian refuges separate from crosswalks; sidewalks on both sides of street
- West Smith Avenue: wide with parking lane; sidewalks on both sides
- Vinland Street: wide with parking lane; sidewalks on both sides
- West Bent Avenue: two travel lanes; room to accommodate bikes; sidewalks on both sides
- Algoma Boulevard (45): four narrow travel lanes, no accommodations north of campus; on campus 4' bike lane; sidewalks on both sides



North of W. 14th Avenue and south of W. Bent Avenue

- Bowen Street: two travel lanes and parking lane; sidewalks on both sides
- East/West Irving Street: two travel lanes; sidewalks on both sides
- Washington Avenue: two travel lanes; sidewalks on both sides
- Broad Street: two travel lanes separated by railroad tracks; sidewalks on both sides
- Wisconsin Street: two travel lanes with parking; sidewalks on both sides
- Algoma Boulevard: two travel lanes; bike lane only through campus; intermittent parking lane; sidewalks on both sides
- High Avenue: two travel lanes; bike lane only through campus; intermittent parking lane; sidewalks on both sides

South/East of the Fox River

South of STH 21 and north of West 20th Avenue

- Omro Road: north of 21, paved, striped shoulder, no sidewalk
- 21 to Omro Road: no accommodations, no sidewalks
- N. Westhaven Road: wide travel lanes, intersection at 21 needs improvement, sidewalks both sides
- Witzel Avenue: transitions from rural: paved 2' striped shoulder to urban: 4 narrow travel lanes, no bicycle accommodations, sidewalks on both sides
- Havenwood Drive: wide travel lanes; sidewalks on both sides

South of Lake Butte des Morts, north of Omro Road

- Leonard Point Rd: gravel shoulder, no stripe; no sidewalks
- Oakwood Road: gravel shoulder; no sidewalk

4.3.2 WALKING CONDITIONS

Walking as Transportation

Walking is often overlooked and undervalued as a transportation mode. Yet, in the Oshkosh planning area, 2.3 percent of commuters reported regularly walking to work. Pedestrian commuting percentages are even higher within the City of Oshkosh's older neighborhoods near downtown. These percentages do not include other pedestrian activity, such as walking trips to school, to shopping, or for recreation. Many of these pedestrians are children and seniors who require special consideration regarding facility design. Pedestrians also include persons using wheelchairs or mobility devices.

Everyone is a pedestrian at some point in his or her trip, whether it is walking to the parking lot, a bus stop, or to work from home. The most common pedestrian facilities people think of are sidewalks. Other facilities include pedestrian ramps, pedestrian islands (i.e. road medians), crosswalks and pedestrian signals. Where sidewalks are not available, roads and/or road shoulders provide the public right-of-way for pedestrians. However, what constitutes a "pedestrian-friendly" or "walkable" neighborhood or business district is much more than merely having the aforementioned facilities in place.

A "walkable" or pedestrian-friendly community is one that provides a comfortable and safe environment for pedestrians. Having sidewalks certainly is one major part of the equation; however, other amenities such as street trees, pedestrian-scale lighting, street furniture and terrace space separating vehicle traffic lanes from sidewalks are also important. In the Oshkosh area snow and its effective removal are another important considerations.

The quick and effective removal of snow on sidewalks and multi-use trails has a major effect on the usability of those facilities. In Oshkosh, all sidewalks are required to be cleared within a certain timeframe from the incidence snowfall (24 hours), however the maintenance of many of these facilities is the responsibility of the homeowner and work schedules, vacations, and the physical abilities of the resident can make for inconsistent snow removal. Multi-use facilities are maintained in selected areas as budgets dictate.

Another important element of "walkable" communities is having something to walk to. Destinations, such as commercial areas, parks, churches, and schools need to be within walking distance and accessible if walking is going to be a serious transportation alternative. The scale and interest of buildings can add or detract from the pedestrian experience. Studies have also found that pedestrians like company and seeing other pedestrians increases one's comfort level and sense of safety and security.

Requirements for pedestrian facilities within the Oshkosh planning area include those for crosswalks and sidewalks. Specifically, for new subdivisions:

- Sidewalks shall be required on both sides of the street.
- Sidewalks are not required on cul-de-sacs or dead end streets less than one hundred fifty (150) feet in length, unless it is required by the Common Council.
- Sidewalks shall be a minimum of five (5) feet wide
- Construction of said sidewalks to be in conformance with requirements set forth in Chapter 25 of the City of Oshkosh Municipal Code.
- The requirement for sidewalks may be waived or modified by the Common Council if the subdivider submits an alternative plan to effectively serve pedestrian needs. An alternative plan may involve the development of a trail system serving all lots within the subdivision, linking the trail system to other trails or sidewalks in adjacent areas.

Neighborhoods constructed prior to World War II generally included sidewalks. Post war era neighborhoods tended to be built without sidewalks. Retrofitting areas with sidewalks is often controversial given cost and funding issues (i.e. who should pay) but is the common procedure within Oshkosh and should continue in order to have complete and comprehensive pedestrian infrastructure.

Safe Routes to School

Safe Routes to School planning is necessitated by a number of factors. Chief among them are health and safety concerns for children. The National Highway Traffic Safety Administration (NHTSA) determined in 1998 that motor vehicle injury is the leading cause of death for children aged two to eighteen. Recent studies also report the incidence of childhood asthma continue to escalate due in part to exacerbated air pollutants caused by a number of sources including automobile emissions. Childhood obesity rates are also increasing and today one in four kids are over weight and at higher risk for chronic conditions such as diabetes.

In response to these and other health conditions and statistics, the Safe Routes To School model has been developed to increase the number of kids walking and biking to school safely. Doing so also provides noteworthy ancillary benefits. For one, increasing the number of children who walk or ride bikes to school lessens the amount of traffic congestion placed on local roadways. A recent NHTSA statistic reports between 20-25 percent of morning rush-hour traffic may be parents driving kids to school. At the same time, school districts are facing decreased budgets and rising gas prices. In fact, the National Center for Education Statistics reports school bus transportation is frequently the second largest budget item for school districts after salaries. In light of these and other conditions, Safe Routes To School planning makes good sense in any community working to increase the livability and sustainability of their neighborhoods.

The Safe Routes To School initiative is comprised of five core areas, called “The Five E’s”. They include Engineering, Enforcement, Education, Encouragement, and Evaluation.

- Engineering is a broad concept used to describe the design, implementation, operation, and maintenance of traffic control devices or physical measures. It is one of the complementary strategies of SRTS, because engineering alone cannot produce safer routes to school.

- Enforcement includes policies that address safety issues such as speeding or illegal turning, but also includes getting community members to work together to promote safe walking, bicycling, and driving.
- Education includes identifying safe routes, teaching students to look both ways at intersections, and how to handle potentially dangerous situations. This strategy is closely tied to Encouragement strategies.
- Encouragement combines the results of the other “E’s” to improve knowledge, facilities and enforcement to encourage more students to walk or ride safely to school. Most importantly, encouragement activities build interest and enthusiasm. Programs may include “Walk to School Days” or “Mileage Clubs and Contests” with awards to motivate students.
- Evaluation involves monitoring outcomes and documenting trends through data collection before and after SRTS activities. Surveys and audits can help provide quantitative support for improvements brought about through SRTS programming.

The Wisconsin Department of Transportation administers a federal grant program (SAFETEA-LU) to qualified communities that demonstrate a need for funding and have developed bicycle and pedestrian safety improvement plans. The Oshkosh Area Safe Routes to School Plan was prepared by the East Central Wisconsin Regional Planning Commission in November 2008 and includes twelve area schools. A PDF of the document can be found at:

http://www.eastcentralrpc.org/OshkoshSRTS/docs/plan/Oshkosh_Area_Safe_Routes_Final.pdf

Engineering recommendations listed in the plan are school specific but directly relate to bicycling and walking conditions in the Oshkosh area. Where feasible, those recommendations should be implemented.

4.4 BICYCLE AND PEDESTRIAN STATUTES AND ORDINANCES

In the 1960's, the national Institute of Transportation Engineers produced a publication titled -- *Recommended Practice for Subdivision Streets*. This publication contained a set of recommended standards for residential street design. These included: a 60 foot ROW; 32-34 feet of pavement; a 6-7 foot planting strip; and a 5 foot sidewalk on both sides of the street. Typical front yard setbacks were set at 40-60 feet. These standards have been widely used as the basis for many of today's subdivision regulations and are reflected in some of the local codes.

Many modern subdivisions continue to build the right-of-way for motorized transportation at the expense of walking or biking. Wide, curvilinear streets are thought to be appealing by many developers engaged in designing new housing projects and sidewalks are included as an afterthought, if at all. Unfortunately, it isn't until after these neighborhoods are built that residents begin to question street width and speeding that comes wide lanes, and the lack of pedestrian facilities such as sidewalks.

In response to traffic congestion and neighborhood concerns, many planners and engineers are looking to the past for answers. A key component of neo-traditional neighborhoods is creating neighborhoods that people enjoy walking around in. The minimum requirement is to provide sidewalks and safe street crossings. However, providing shade trees, planter strips, landscaping, benches, and other amenities can make an enormous qualitative difference in the pedestrian environment. Similarly, bicycle facilities can greatly enhance the usability of a transportation network. The best strategy for accommodating bicycle trips is to provide adequate bicycle lanes and to educate the driving public on the need to share the road with bicyclists.

Wisconsin Statutes

The State of Wisconsin does not require municipalities to provide sidewalk facilities, but does require clearing of sidewalks after snow conditions. Statutes are written to provide guidance for the use and enforcement of rules governing pedestrian activities and facilities. Likewise, rules for bicycles regulate the proper use of facilities including roadways. Local communities are provided a great deal of discretion in the placement and usage of bicycle and pedestrian facilities under state law.

City of Oshkosh Municipal Code

The City of Oshkosh Subdivision Ordinance (Chapter 30) includes regulations for the development of sidewalk facilities or multi-use paths. Chapter 25 deals with street and sidewalk regulations, including snow removal. Residents are expected to remove snow and ice within 24 hours of the cessation of the snowfall event. If found in violation of the ordinance, property owners can be assessed fines that range from \$20 to \$100 per day. Chapter 30 is the Zoning Ordinance, which addresses required private property walkways connecting businesses and multiple-family developments to pedestrian networks and also includes slight incentive of reducing required automobile parking for providing bicycle parking.

4.5 EXISTING PLANS

City of Oshkosh Comprehensive Plan 2005-2025

Chapter Five of the Comprehensive Plan, Transportation Element, briefly touches on bicycle and pedestrian circulation and accommodations within the city of Oshkosh. The Transportation element lays out policies, goals and maps to guide future development of the transportation system. The recommendations put forth in this plan should supersede those of the comprehensive plan, as they are bicycle and pedestrian specific.

Winnebago County Comprehensive Plan 2006

Chapter six of the Winnebago County Comprehensive Plan is the Transportation Plan Element. It addresses overall county and locality specific bicycle, pedestrian and trail elements with the goal “To create a physical and cultural environment which encourages travel by foot or bicycle by making these modes of transportation safe, convenient, and attractive alternatives to motorized travel through the provision of adequate accommodations, education and enforcement, and more compact land use patterns”. The Transportation plan element lays out specific goals and policies to guide future development of the transportation system.

University of Wisconsin Oshkosh Campus Plan 2010(draft update)

UWO Master Plan summarizes various planning documents into one concise reference. Supporting documents include Campus Development Plan, Long Range Maintenance Plan, Campus Parking Plan, Residence Life Master Plan and Space-Use Plan. Specific attention is given to the transportation and parking conditions and needs which identify potential changes to campus for vehicle parking, bike parking, bus service, pedestrian facilities and programs/policies on campus user's transportation choices.

Oshkosh Area Safe Routes to School Plan 2008

The Oshkosh SRTS plan developed recommendations using the five E's: Engineering, Education, Encouragement, Enforcement and Evaluation. The recommendations of the plan not only include crosswalk and traffic calming elements but also address a number of educational and encouragement activities to provide incentive for walking and bicycling to school.

Wisconsin Pedestrian Policy Plan 2020 –WisDOT published the *Wisconsin Pedestrian Policy Plan 2020* in March 2002. The plan outlines statewide and local measures to increase walking and to promote pedestrian safety. The plan establishes state goals and objectives and identifies action steps for WisDOT to take toward achieving these goals and objectives. The plan does provide some pedestrian planning guidance for municipalities and recommends that government set specific pedestrian objectives, develop sidewalk inventories, review existing ordinances regarding the installation and retrofitting of sidewalks. Other planning elements to consider included reviewing cost assessment practices for financing pedestrian projects, analyzing pedestrian crashes, reviewing snow removal issues relating to pedestrian travel, and developing pedestrian improvement recommendations.

Wisconsin Bicycle Transportation Plan 2020 – WisDOT acknowledges the importance of bicycling as a legitimate transportation mode and clarifies its role in encouraging bicycling in the *Wisconsin Bicycle Transportation Plan 2020*. This plan presents a blueprint for improving bicycling conditions and encouraging bicycling in the state and calls for the implementation of metropolitan area bicycle plans prepared by Metropolitan Planning Organizations or local governments.

Wisconsin Bicycle Planning Guidance& Wisconsin Bicycle Facility Design Handbook – WisDOT has published two recent documents relating to bicycle planning and bicycle facility design. *Wisconsin Bicycle Planning Guidance* was published in June 2003 and provides guidelines for metropolitan planning organizations and communities in planning bicycle facilities. The document is available on the Internet at:

<http://www.dot.wisconsin.gov/projects/state/docs/bikeguidance.pdf>

The *Wisconsin Bicycle Facility Design Handbook* was published in January 2004 and provides a wealth of detailed information for designing a range of bike facilities, from on-road bike routes to dedicated trails.

5

GOALS AND OBJECTIVES

5.1 VISION STATEMENT

Develop and maintain a pedestrian and bicycle friendly transportation system that is safe, increases physical activity and recreational options, and is an economic asset to the community.

5.2 GOALS AND OBJECTIVES

Goals are statements that describe a desired condition or outcome. Objectives state the rationale for achieving a goal.

Goals and Objectives (numerical listing for reference purposes only, ordering does not suggest order of importance)

- 5.2.1 Create a permanent Bicycle and Pedestrian Committee within the City of Oshkosh governmental structure.
 - a. Oversee implementation of the Bicycle and Pedestrian Plan.
 - b. Encourage widespread, safe, and responsible use of walking and bicycling as forms of transportation.
 - c. Have an ongoing, working relationship with City Departments and other committees.
 - d. Act as a liaison for Oshkosh in regard to pedestrian and bicycle issues with outside agencies and government bodies.

- 5.2.2 Develop a well-connected bicycle route system that links a variety of facilities together into a cohesive transportation system (both on and off-road).
 - a. Promote safe bicycle and pedestrian travel modes by linking pedestrian and bicycle systems throughout Oshkosh.
 - b. Capitalize on the availability of easements and access corridors to enhance the existing linear trail network throughout and beyond the city limits.
 - c. Improve the overall quality of life for both residents of and visitors to the City of Oshkosh by providing a variety of opportunities for safe walking and biking.
 - d. Ensure adequate bicycle parking and intermodal coordination and connectivity.

- 5.2.3 Increase the utilization and availability of funding for bicycle and pedestrian improvements.
 - a. Target resources for bicycle and pedestrian improvements to areas of greatest transportation need.
 - b. Use this plan as a project guide when applying for all funding sources.
 - c. Promote public-private partnerships to compete for funding sources for which Oshkosh is not eligible.



5.2.4 Design roads to be compatible with surrounding uses and be pedestrian, bicycle and transit friendly.

- a. Integrate the trail system into a bicycle and pedestrian transportation network which supports linkages to mass transit facilities.
- b. Identify priority origins and destinations and increase access to these locations by bicycle and pedestrian travel modes.
- c. Minimize the number and severity of vehicle-bicycle and vehicle-pedestrian conflicts.
- d. Ensure sufficient road capacity for areas with high amounts of pedestrian and bicycle traffic.



5.2.5 Provide adequate education, encouragement, evaluation, and enforcement programs.

- a. Increase educational opportunities to educate pedestrians, bicyclists, and motorists about rights and responsibilities on roadways and shared-use facilities.
- b. Promote incentives for walking or biking.
- c. Increase the usability of transportation facilities by placing additional emphasis on enforcing speed limits, rights of way, etc. along pedestrian and bicycle corridors.
- d. Promote and provide dedicated facilities for public and private developments such as connecting walkways, transit stops and bicycle parking.



5.2.6 Enhance intergovernmental cooperation and coordination for improving multimodal transportation.

- a. Engage elected officials and residents in development and utilization of bicycle and pedestrian facilities.
- B Work cooperatively in developing grant-writing workshops, maintenance seminars, and training sessions.
- c. Guide outside agencies such as Winnebago County, the State of Wisconsin, metropolitan planning agencies, etc. to utilize and adopt this plan's elements in their projects.

5.2.7 Develop shared-use transportation standards to include in the development review process for developments planning.

- a. Ensure "complete streets" are constructed or reconstructed to prevent costly future retrofitting.
- b. Promote connectivity to destinations and promote alternative methods of transportation within neighborhoods.
- c. Interconnect all areas in the community, especially neighborhoods to the transportation network throughout Oshkosh.



6

BEST FACILITY PRACTICES

6.1 ALTERNATIVES FOR IMPROVED BICYCLE AND PEDESTRIAN FACILITIES

It is generally understood that bicycle and pedestrian facilities greatly enhance the usability of an entire transportation network. Unfortunately, for decades transportation engineering trends focused on designing roadways and transportation networks for four wheels and the provision of facilities for bicycles and pedestrians have taken such a backseat as to be minimal or nonexistent, often to the extent that public walkways and bicycle facilities were not being provided at all within some communities.

Bicyclists and pedestrians must be included as a matter of course in the planning and design of roadway plans and facility selection of transportation networks. This includes reconstruction, repaving, and retrofits of existing streets. Only by integrating bicycle, pedestrian, transit, and motor vehicle facilities comprehensively will the transportation system work in totality for our community.

Some elements of roadway design pertain specifically to bicycles, such as bike lanes and bike parking while others may pertain almost exclusively to pedestrians, such as sidewalks and crosswalks. However, the overall design and operational elements of the roadway are just as important. Designers, planners and engineers have a diverse array of design elements and ever-developing technologies at their disposal. This chapter is a source of information on design, engineering tools and facility alternatives that promote “walkability” and “bikeability”.

To enable safe and efficient bicycle and pedestrian movement throughout the Oshkosh area; on-street, off-street and other infrastructure improvements are addressed in this chapter. The transportation network and physical improvement recommendations included within this planning document are broken into bicycle facilities and pedestrian facilities. They include signed and striped roadways, signed and/or shared roadways and multi-use trails as well as additional facility considerations associated with each.

Rationale behind choosing the best facility alternatives for any of the network recommendations within the plan must be done on a case-by-case basis, factoring in such things as location, right-of-way width, number of lanes, traffic speed, presence of on-street parking, traffic volumes, pedestrian volumes, pedestrians with disabilities, snow removal, etc. It is important to understand that the facilities chosen for any given segment of the overall network is not static and therefore open to debate and discussion because what may be feasible and desirable in one instance may not be in all instances.

6.2 BICYCLE FACILITIES

The best strategy for accommodating bicycle trips is to provide adequate on-street bicycle lanes and to educate the public on the need to share the road with bicyclists. Some corridors within the City of Oshkosh are presently suitable for bicycling and require little or no improvement (e.g. most local residential streets), while other corridors pose significant hazards to would-be bicyclists and pedestrians (e.g. Parts of Murdock, Jackson and 9th Streets). Signage and shared roadways are the foundation of the recommended bicycle network in this plan; with the use of pavement markings added to further enhance the functionality of the system and to increase awareness thereby increasing safety. Best facility practices for Oshkosh bicycle facilities include three primary facility alternatives that are designed to provide a safer and more attractive infrastructure for bicycling: Signed and striped bike lanes, signed and shared roadways, and off-road facilities. Other infrastructure initiatives such as bicycle parking will also assist to facilitate safe bicycle travel.

This “Complete Street” section enables safe access for all users. Pedestrians, bicyclists, and motorists are all accommodated.



SIGNED AND SHARED ROADWAYS

Signed and shared roadways are those that have been identified as designated bike routes within the City of Oshkosh bicycle network. Regardless of what facility improvement (bike lanes, sharrow, paved shoulder, etc.) is utilized, the inclusion of signage and pavement markings must be considered as an essential element of best facility practice and must be incorporated in the City of Oshkosh Pedestrian and Bicycle Circulation Plan. There are many reasons for signing designated bike routes:

- The route provides continuity to other facilities such as bike lanes, sharrows and trails
- The road is a common route for bicyclists through high demand corridor(s)
- In rural type areas, the route is preferred due to low vehicle traffic or paved shoulder
- The route extends along local neighborhood and collector streets that lead to internal neighborhood destination such as parks, schools or commercial districts
- Signing on shared roadways indicates the particular advantage and suitability of the route that lead to desired destinations in the City of Oshkosh.

Signage

Signage on bicycle routes should take two forms – the wayfinding or directional sign and the traffic regulation sign. While signs are extremely important along on-street facilities, they should also be present on off-street trails/paths to inform users about potential conflicts, regulatory information, destinations, etc.

Wayfinding/directional signs are used along routes to help bicyclists find the preferred (safest and most convenient) route to their destinations and are extremely helpful to out-of-the-area cyclists looking for a place to eat, shop or play. Signage of this type is best if coordinated between the City and interested community boosters such as the Convention and Visitors Bureau, UWO or the Business Improvement District in order to develop custom directional signs specific to Oshkosh.



Traffic regulation signs are used to inform road users of selected traffic laws and indicate the applicability of a regulation to the specific situation such as “share the road” or “walk your bike”. In urban areas, bicycle route signs should be placed approximately every 1/4 mile and at every turn at all signalized intersection. The placement of all other bicycle regulatory signs and their use should be



guided by the Manual on Uniform Traffic Control Devices (MUTCD), which provides comprehensive guidance for the use of signs, pavement markings and traffic signals on both roadways and off-road facilities. These regulatory signs indicate to drivers that there is a good possibility that bicycles may be sharing the road and also inform bicyclists to physical conditions of the route and where routes may be in a potential conflict area like an intersection with a busy street.

Pavement Markings

Whenever possible, pavement markings should be used to designate bicycle lanes, delineated paved shoulders and other infrastructure improvements such as “bike boxes”. Pavement markings give motorists the feeling of a narrower traffic lane and thereby slow traffic speeds. Pavement markings give bicyclists information about traffic direction, merging and turning which reduce sign clutter near intersections.



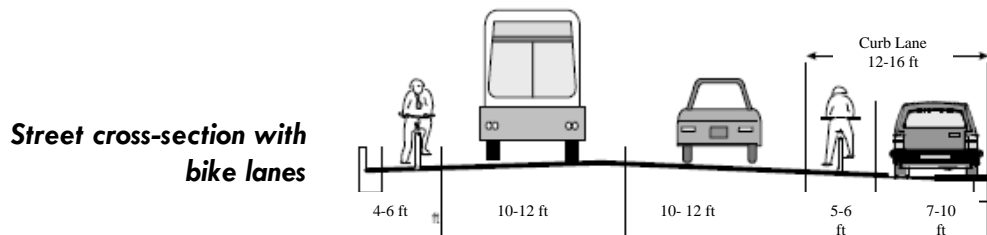
Because these pavement markings indicate restricted and shared right-of-ways, they must be consistent with all traffic patterns. The Manual of Traffic Control Devices (MUTCD), the Wisconsin Bicycle Facility Design Handbook and the Wisconsin Department of Transportation Facilities Development Manual (FDM) are all sources for designing pavement marking systems.

SIGNED AND SHARED ROADWAYS - STRIPED BIKE LANES

Bike lanes are defined as "a portion of the roadway which has been designated by striping, signing and other pavement markings for the preferential or exclusive use by bicyclists". Bicycle lanes make the movements of both motorists and bicyclists more predictable and as with other bicycle facilities there are advantages to all road users in striping them on the roadway.

Bicycle lanes in the roadways are reserved solely for bicyclists and are marked off on the pavement. Bicycle lanes are the most effective way to encourage bicycle travel on urban streets. They should be considered when it is desirable to delineate available road space for preferential use by bicyclists and provide for more predictable movements of both bicyclists and motorists. Bicycle lane markings increase a bicyclist's confidence that motorists will not stray into his/her path of travel. Bicycle lanes are delineated by a combination of painted lane markings and signage and are one-way facilities.

Striped bike lanes are a minimum of 4 feet wide excluding the gutter pan, (5-6 foot wide is recommended), and should be located on both sides of the street. The Pedestrian and Bicycle Stakeholder/Steering Group strongly feel that a 5 foot bike lane is safe and should be used in all circumstances and the reduced lane should only be incorporated in the situations where no alternative is available. If parking is permitted, the bike lane is placed between the parking lane and the travel lane. If the parking lane and the bike lane share a curb lane, a minimum 12-foot width is required. To increase safety, wider bike lanes should be considered on roads with high traffic speeds.



General design standards for the appropriate design of bicycle lanes include:

- Lane should be one-way and flow with traffic.
- If on a one-way street, lane should be on the right side.
- If parking is permitted, bike lane should always be between parking area and auto travel lane.
- Bike lane should always be delineated from the auto lane and parking lane with a 6 inch white line.
- 4-6 foot bike lane width is recommended (3-4 ft ride lane, 1-2 ft gutter)
- Surface must be smooth and relatively free of obstacles – maintain clear area and use flush utility covers and appropriate drain grates.



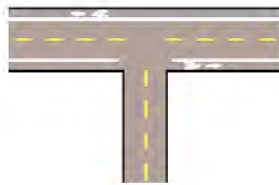
Appropriate Bicyclist's Operating Space

Design considerations at intersections include:

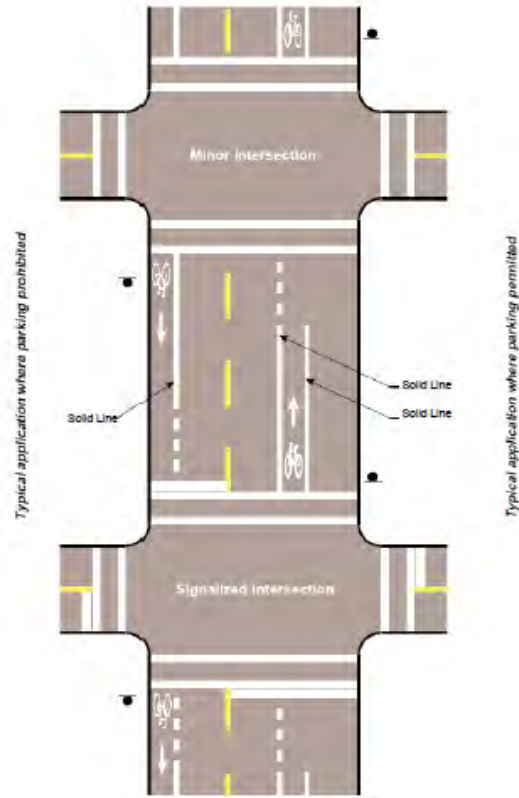
- Lane striping not be installed across pedestrian crosswalks nor continue through intersections.
- When there are bus stops or high right-turn volumes, the use of a dashed line is advised.
- At “T”-intersections without crosswalks, bike lane striping should continue through the intersection with no break.
- With crosswalks, striping should be discontinued only at crosswalks, and then dotted.



T-Intersection with
With Painted Crosswalks
With and without bus stop



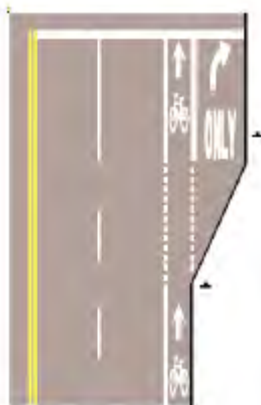
T-Intersection with
Without Painted Crosswalks



Standards at Intersections

Design considerations at right-turn-only lanes include:

- Striping and signage is located well in advance of the intersection.
- Where throat widening has reduced available pavement width for bike lanes, it is recommended that the bike lane striping be discontinued (with signage) and bicyclists be directed to merge with the auto lane to cross the intersection.



Right-Turn Only



Right-Turn Only with Parking Lane



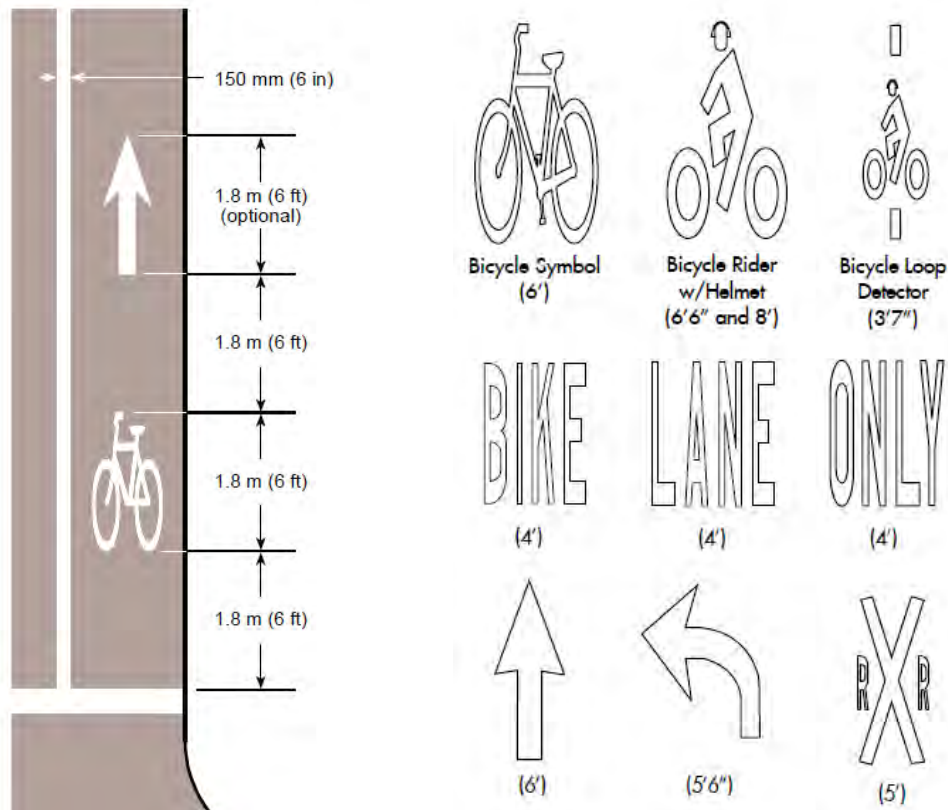
Right-Turn/Straight and Right-Turn Only

Standards at Right-Turn Only

Bicycle Lane Symbols and Markings:

A bike lane should be separated from the automobile travel lane by a 6 inch wide line to provide visual separation between the two types of travel lanes. The lane itself should be marked/stenciled with standard pavement symbols to inform bicyclists and motorists of the presence of the bike lane. The standard pavement symbols are one of two bicycle symbols and/or the words “BIKE LANE” with an optional directional Arrow. Given the lack of bike lanes and the relatively small number of bicyclists on the street, Oshkosh should be encouraged to use directional arrows extensively in the early stages of plan implementation. Other optional symbolization like “Railroad Crossing” or “Uneven Roadway” is also important information providing symbols creating a more user friendly and safe environment.

Regardless of the symbolization used, all pavement markings are to be white and reflective with the Bicycle or “BIKE LANE” identifier being painted on the far side of each intersection, with additional stencils placed on long uninterrupted sections of roadway where deemed appropriate based on conditions. The lane symbols should be approximately 6 feet in length and “BIKE LANE” wording should be approximately 4 feet in length (each word). The lane symbol markings and “BIKE LANE” wording should be placed approximately 6 feet from each other and other pavement markings.



Bike Lane Symbols and Markings

The Preferential Lane Symbol (“Diamond”) previously used as a pavement markings and on directional signs are no longer to be used for bicycles due to the confusion with the use of the diamond for High Occupant Vehicle (HOV) lanes as well as the misinterpretation of the diamond being a two-way arrow. Any existing diamond marks in Oshkosh should be removed.

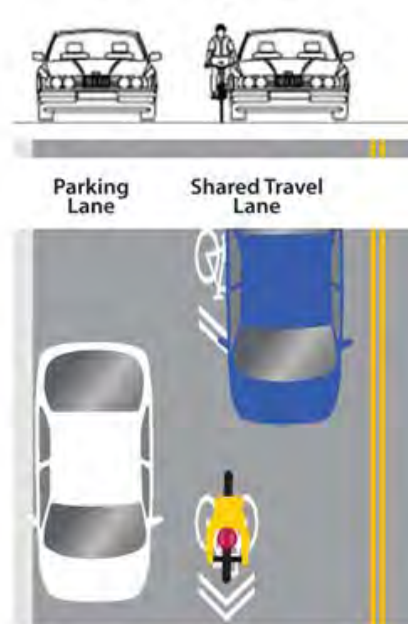
SIGNED AND SHARED ROADWAYS - SHARROWS

Sharrows, also known as stripeless bike lanes, do not have corridors reserved for bicyclists, but signs indicate that they are bike routes and heavily used by bicyclists. Additionally, bicycle and chevron symbols are painted on the roadway to remind motorists and cyclists that they are sharing the roadway. Sharrows are often described as “a compromise” by complete street advocates and are used to show motorists that cyclists may



“take the lane”. Also, they help to show cyclists good lane positioning, especially where lanes are too narrow to be shared safely. Bike lanes are preferred facilities over sharrows but, due to conditions such as roadway width restrictions, widening rights-of-way to accommodate bike lanes is often difficult or impossible as they may take away parking or terrace/sidewalk space, especially in the built-up urban areas where parking is already in high demand so that sharrows should be considered as an acceptable bicycle facility. More specifically, sharrows:

- Are on-street legends that reinforce the existing rules of the road in regard to the rights of both automobile and bicycle multiple transportation modes.
- Are not separate bike lanes: a motorist can still drive over the sharrows.
- Are expected to be seen by motorists and indicate that they share the lane with bicyclists.
- Indicate to bicyclists the best place to ride within the lane.
- Are typically used in locations where the roadway width is not adequate to provide dedicated bike facilities.



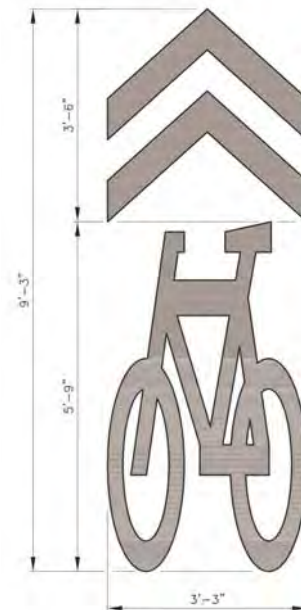
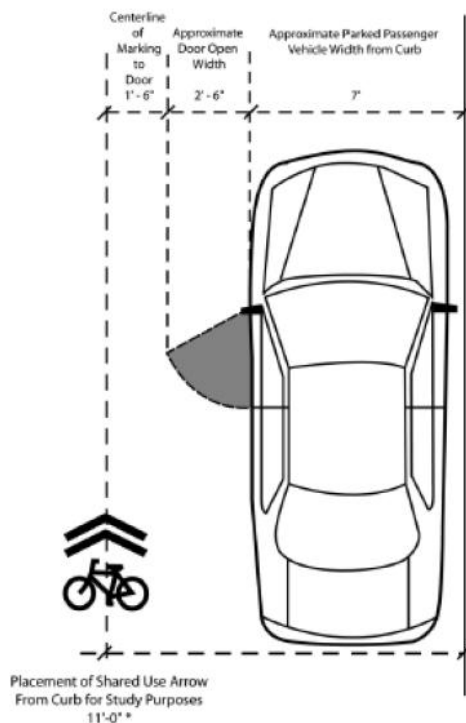
Overview of Sharrow

Design considerations for sharrows include:

- It is desirable to have 14 foot wide travel lanes when possible, but not necessary.
- At corners with turn lanes, bikes should be directed to merge into the full travel lane.
- Sharrows should include a bicycle symbol and a chevron (double directional arrow). Standard stencil sizing is approximately 3 feet 3 inches wide by 9 feet 3 inches long.
- Where parking is permitted, stencils for sharrows should be at least 11 feet from the curb or 4 feet from on-street parking (5 feet preferred) so they do not encourage bicyclists to travel in the “door zone”.
- The optimal location for the symbol is the center of the lane so they can be easily seen by motorists.
- Not placed at the approach of intersections, lest they direct cyclists to the wrong location on the road.



Sharrow in Use



Sharrow Symbols and Markings

Signed and Shared Roadways – Wide Curb Lanes

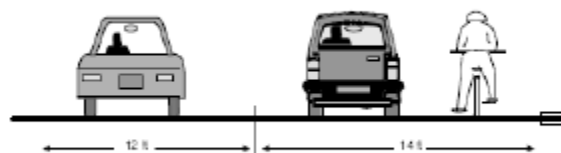
A wide curb lane is a right hand or curb side lane that is wider than a typical travel lane, oversized to better accommodate both bicycle and motor vehicle travel in the same travel lane. The wide curb lane allows motorists to pass bicyclists without changing lanes and has a positive impact on motor vehicle capacity whether bikes are present or not. In addition, a wider curb lane provides more negotiation room for motorists entering the travel lane from driveways or areas with limited site distance. Wide curb lanes are not striped or marked but are often needed to help accommodate bicycle travel on major urban streets. Bike lanes or sharrows should be considered if the street is to be designated an official bicycle routes.



In general, 14-15 feet of usable lane width is the recommended width for shared use in a wide curb lane. It is not advisable to install lanes wider than 15 feet for continuous distances as this has been shown to increase vehicle speeds and compels drivers to operate two vehicles in one lane.

Design considerations for wide curb lanes include:

- Right hand curb lane should have a minimum of 14 feet of usable width but not exceed 15 feet.
- If parking is present, calculate the width from the curb face and include the gutter.
- If parking is not present, do not include the gutter in the width calculation.



Street Cross-Section with Wide Curb Lane

Signed and Shared Roadways – Paved Shoulders

In rural areas or on sections of road that are rural roads or rural highways or areas without curb and gutter, adding or improving paved shoulders is often the best way to accommodate bicyclists. Paved Shoulders allow cyclists to share the road with motorists. Road shoulders should be marked off with a white line, and cyclists travel on them in the same direction as other traffic. Signage is used to indicate to motorists that cyclists may be using the paved shoulder of the road and to inform cyclists that the area of the paved shoulder will be flat, clear of debris and otherwise designed for bicycle travel.

Paved shoulders are a popular method to accommodate bicycle transportation, especially on rural highways. The proper width of the paved shoulders varies depending on a number of factors including the type of highway, the amount of daily automobile traffic, automobile speeds, sight lines and number of curves, and the amount of expected bicycle traffic. On rural two-lane state trunk highways the DOT recommends employing a roadway evaluation method that would safely allow one bicycle and one motor vehicle traveling in the same direction and one motor vehicle in the oncoming travel lane to occupy the same lateral road section at the same time. Local discussions indicate paved shoulders at least 4 feet wide are preferable by bicyclists in Winnebago County.

Design considerations for paved shoulders include:

- 4 feet minimum width to accommodate bicycle travel (useable width and NOT including any gutter pan or any area treated with rumble strips)
- 5 feet or more minimum width recommended from the face of a guardrail, curb or other barrier.
- Widths should be increased if there are higher levels of bicycle usage, motor vehicle speeds are above 45 mph, or there is a higher percentage of truck and bus traffic.
- Paved shoulder area should always be delineated from the auto lane with a 6 inch white line.



Photograph depicting a paved shoulder

Signed and Shared Roadways – Shared-Use Roadway

A shared-use roadway is typically a local neighborhood street where traffic volume and speeds are low and motorists and bicyclists feel comfortable sharing the road as designed. Shared-use roadway facilities are commonly residential streets, narrow town roads and County Trunk Highways.



On a shared roadway, bicyclists and motorists are accommodated in the same travel lane and no additional improvement is necessary to make the road “bicycle-friendly”. Because of narrow widths or parked vehicles, motorists may find it necessary to switch into the oncoming travel lane. This plans recommendations define all Oshkosh residential neighborhood streets to be an acceptable part of the Oshkosh bicycle network, though they may need to be identified as specific routes.

Shared roadways are an extremely common form of bicycle accommodation. It is important that the shared-use roadway facilities that are part of a formal or established bicycle route system or network be identified through the use of wayfinding and regulatory signage as well as be included in any route maps.



Street Cross-Section of a Shared-Use Roadway

OFF-ROAD FACILITIES

Off-road facilities are those that have been identified as designated bike routes within the City of Oshkosh coordinated bicycle network. Off-road facilities within this plan include two facility type; Multi-Use Trails and Sidepaths. These two off-road facility types are specifically designed for pedestrians and cyclists and are physically separated from any motor vehicle traffic. They are sometimes reserved for bicyclists only but more often they are open to all non-motorized road users, such as pedestrians, bicyclists, rollerbladers and skateboarders.

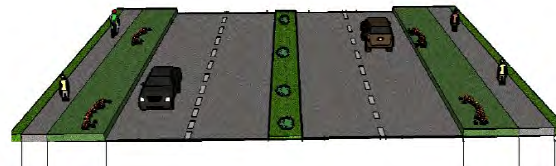


Regardless of the fact they are separated from the streets, off-road facilities should include signage similar to those used for on-street systems. When possible, pavement or ground markings should also be utilized.

OFF-ROAD FACILITIES - SIDEPATHS

Sidepaths are segregated facilities located next to or alongside a roadway. They are generally located within the right-of-way but can be on private property via easements. These facilities are separated from the roadway and divided from motor vehicle traffic by a physical barrier and/or increased greenspace. A sidepath is similar to a sidewalk in that it can support two-way traffic but is generally wider to facilitate multiple use movements. They are most often utilized in areas where a sidewalk is deemed to be undesirable, unsafe or unfeasible such as rural highways or in urban areas with limited right-of-way or difficult design considerations.

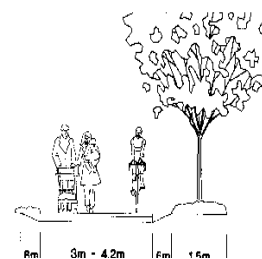
Sidepaths are not generally recommended in areas with a lot of driveways or road crossings as they can cause conflicts, especially for sidepath users traveling in the opposite direction of the traffic on the roadway. Sidepaths are currently being utilized as pedestrian/bicycle facilities by the Town of Algoma.



Street Cross-Section of Sidepaths

Design considerations for sidepaths include:

- Install on one or both sides of the street, depending on anticipated level of use and available area.
- May be located within the right-of-way, easement area of private property or combination
- Minimum of 8 feet wide for bicycle only travel. Minimum range of 10-14 feet for multiple-use with 12 feet being desirable.



Street Cross-Section of Sidepath

- A separation from the road of greater than 5 ft.
- Sidepath material must be firm, stable, and slip-resistant - concrete, asphalt, bricks/pavers. Crushed stone could be considered on a case-by-case basis.

OFF-ROAD FACILITIES – MULTI-USE TRAILS

In the last decade of the 20th Century, multi-use trails for bicyclists and walkers sprang up in communities across the nation. There are more than 11,000 miles of paths on former railroad corridors and thousands more alongside canals, rivers, and highways and running through parks and recreation areas. Multi-Use Trails are segregated trails or paths located within their own right-of-way or easement area and are not closely associated with a roadway. Multi-use trails offer exceptional bicycle mobility, especially when truly isolated from motor vehicles such as along rivers and creeks, greenways, railroad corridors and dedicated connections between cul-de-sacs and subdivisions to other bicycle facilities. A multi-use trail is similar to a sidepath in function as it supports two-way traffic and is generally wider but differs in that it has



a much greater physical and psychological barrier from motor vehicle transportation facilities. Multi-use trails provide many valuable benefits including transportation links, recreation areas, habitat corridors, economic development attractors and outdoor fitness centers. They may range in length from a mile or two in a downtown, to a regional commuter route of 15 miles or more, right up to a cross-state or interstate path covering hundreds of miles, and the level of use on a trail may vary from a few thousand people a year to several million per year.

Off-road or multi-use trails have a variety of different types and design considerations. In our plan, trail type recommendations include Rail Trails, Rails with Trails and Waterway/Greenway Trails. These facility types are detailed further below.

Rail Trails

Rail trails are multi-purpose public paths created from former railroad corridors most often flat or following a gentle grade. Ideal for many uses, such as bicycling, walking, inline skating, cross-country skiing, equestrian and wheelchair use, rail-trails are extremely popular as recreation and transportation corridors, such as Oshkosh’s WIOUWASH Trail.



Rail-trails create healthier places for healthier people. They serve as wildlife conservation and historical preservation corridors, stimulate local economies by increasing tourism and promoting local business, offer safe and accessible routes for work and school commuting, and promote active lifestyles for all ages.

Use of former railroad corridors is a great option for the installation of a multiple-use trail system as the widths of the former rail right-of-way is typically sufficient for construction of the trail with buffer and the network is already established. However, issues include difficulty in acquisition of old rail lines and railbanking, easements are often necessary on former railways that are now used for specific public use or in private control and the myriad of environmental concerns from the former railroad uses.

Rails with Trails

A rail-with-trail is a public path that runs parallel to a still-active rail line. There are more than 115 rail-with-trails facilities in the United States. In this case, the relationship between the trail and the rail is all the more significant. Rail-with-trails are operating under a wide variety of conditions. The rail and trail share an easement/railroad right-of-way and are sometimes separated by extensive landscaping, barriers and fencing. Rail-with-trails can also provide a unique opportunity for connecting non-motorized transportation with other transportation.



The placement of trails within active rail right-of-way is a logical use of unutilized land. Issues include difficulty in acquisition or obtaining easements/rights to be within the rail corridor, trail location in relation to bicyclist or pedestrian safety, difficulty associated with rail crossings, the necessary physical separation by grade or barrier and trespass onto railroad property.

Waterway/Greenway Trails

Waterway/greenway trails are typically multi-purpose public trails that are placed alongside or near environmentally sensitive areas such as navigable waterways, wetlands, river and creek banks, and areas with steep slope as most environmentally sensitive areas are ideal for multi-use trails. Trails provide people alternative transportation routes that can reduce automobile use and provide alternatives to driving. Waterway/greenway trails also provide a unique facility to serve a diverse population that may otherwise have limited opportunities to access natural areas as most of the lands associated with waterway/greenway trails is left in a natural state, providing habitat for birds and other wildlife as well as diverse plant communities and the corridors created



by waterway/greenway trails may be important as wildlife passageways. A local example is the lakefront trail at Menominee Park.



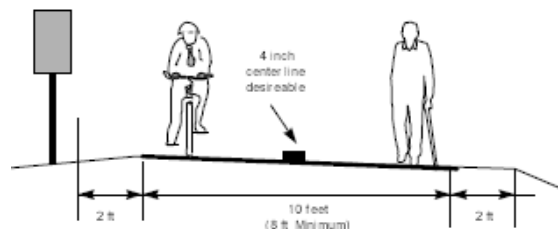
Waterway/greenway trails have been shown to increase the values of properties adjacent, especially through residential neighborhoods. The National Association of Homebuilders cites trails as the second and third most important amenity that would influence people to move to a new location. Additionally, quality of life is an increasingly important factor in attracting and retaining businesses in a community and

trails are important contributors to the quality of life. Waterway/greenway trails can also help to provide a sense of place and be a source of community pride. When integrated with features such as historic sites, commercial and residential areas, schools and parks, they can improve the overall character of a region.

Waterway/greenway trails should be officially mapped to not only protect the integrity of trail/bicycle route system by securing future trail placement through easement or acquisition but also to allow property owners, trail users and the public to know intention of utilizing the environmental area from transportation purposes. Items that must be addressed include approval of Army Corps and DNR, easements on private property, difficult engineering issues, environmental and naturalist concerns and security/liability

Design considerations for multi-use trails include:

- All paths and trails should be two-way and separated with a painted line or with a physical barrier, such as a centerline “curb”.
- May be located within its own right-of-way, easement area of private property, or both.
- Minimum paved width of two-way trail 10-14 feet with 12 feet being preferred.
- If excess space is available, a separated bicycle lane could be utilized.
- Graded area of 2’ with a maximum slope of 1:6 should be maintained on both sides. When adjacent to river/creek banks, ditches, & other slopes steeper than 1:3, a wider separation should be considered.



Street Cross-Section of Trail with Separations

- A physical barrier, such as plantings, shrubbery, railing, or relatively open fence should be considered to be provided. This barrier should be at least 3.5' high to prevent toppling over it while not impairing sight (especially at corners) or be a hazard.
- A snow removal program be incorporated with the trail development.
- Multi-use trail material must be firm, stable, and slip-resistant - concrete, asphalt, etc. to provide an accessible environment. Other materials could be considered on a case-by-case basis.

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— BICYCLE PARKING

It is estimated that over 1.5 million bicycles are stolen every year in the United States, and fear of bicycle theft is recognized as a significant deterrent to bicycle use. The availability of safe and convenient parking is as critical to bicyclists as it is for motorists and yet it is frequently overlooked in the design and operation private and public transportation and parking facilities. A lack of sufficient bicycle parking can lead to bikes being chained to trees, street lights, fences and other structures with potential for damage. Providing sufficient bicycle parking that is going to be used and useful is not as simple as leaving a "fence" or "grid" style rack in the rear of a shopping plaza or school and expecting cyclists to find and use it.



Locating Bicycle Parking

Bicycle parking needs to be visible, accessible, easy to use, convenient, and plentiful. The most common form of bicycle parking, and that which is recommended in this plan, is the bike rack, however alternative bicycle parking facilities such as bicycle lockers are also common in bike friendly venues. Parking should preferably be coordinated with the installation of other street amenities like benches and trash receptacles. It should be well lit and in plain view without being in the way of pedestrians or motor vehicles. Wherever possible, bicycle parking should be covered to protect the bike from rain, snow and other elements. Covered parking areas should have at least six or seven feet of clearance, but not so high as to allow rain and snow to easily blow under the roof. Also, Bicycle parking areas should be well identified with wayfinder signage.

Bicycle racks need to be sited and installed appropriately for them to be well used. They need to be clearly visible and accessible, yet shouldn't interfere with pedestrians or other street furniture. When possible, racks should be installed in a public space, preferably on a wide sidewalk with five or more feet of clear sidewalk space remaining. When no public space is available and racks are required to be placed on private property, bicycle racks should be located in a convenient and visible location no farther from a destination (like school entrance)

than the closest automobile space. For either case, bicycle racks should be placed to avoid conflicts with pedestrians. They are usually installed near the curb and away from building entrances and crosswalks. Bicycle racks can be installed in bus stops or loading zones but only if they do not interfere with boarding or loading patterns and there are no alternative sites.

Bicycle Rack design

The Inverted U type bike rack is currently the industry standard bicycle parking rack, although there are many other racks out on the market. Regardless of the bicycle rack that may be provided, they should meet certain performance requirements. Racks should:

- Support the frame of the bicycle and not just one wheel. There should be at least two points of contact between the bike and the rack.
- Allow the frame and one wheel to be locked to the rack when both wheels are left on the bike or allow the frame and both wheels to be locked to the rack if the front wheel is removed.
- Allow the use of either a cable or U-shaped lock.
- Be securely anchored.
- Be usable by bikes with no kickstand and/or with water bottle cages.
- Be usable by a wide variety of sizes and types of bicycle.
- Have a non-marring surface to protect the bicycle.



Set of Inverted U Racks

Short-Term versus Long-Term Parking

Short-term bicycle parking is defined as being two hours or less, such as might be necessary outside a store or for visitors to an office building, park, or government service center. Critical factors for short-term parking include:

- Recommend racks be within 50 feet of the main entrance to the building, or entrances that are frequently used by cyclists.
- Be well distributed (i.e., it's likely better to have four or five racks spread out along one city block rather than a group of four or five racks mid-block).
- Be visible to the cyclist.
- Located in areas of high pedestrian activity, to discourage would-be thieves.



Example of a Bicycle Parking Locker

- Long term parking suggests that the bicyclist is leaving the bike all day, or overnight, or for an even longer duration. The level of security and protection from the elements needs to be greater and the immediate convenience of the parking facility is not as important. Long-term parking options include:
 - Lockers, individual lockers for one or two bicycles.
 - Racks in an enclosed, lockable building or room of a building.
 - Racks in an area that is monitored by security cameras or guards (within 100 feet).
 - Racks or lockers in an area always visible to employees.

Amount of Parking

Oshkosh currently does not require bicycle parking but allows a reduction of auto spaces if bicycle parking is included. However, an increasing number of communities are adopting bicycle parking ordinances that specify a minimum level of bicycle parking for different building types and land uses. While these usually relate to new developments, the level of provision required can be used as a guide to retrofit communities also. It is recommended that the city revise its codes to require bicycle parking with all new development or redevelopment (including parking lot reconstruction).

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— ADVANCE STOP LINE/BICYCLE BOXES

Bike boxes or advanced stop lines are common features of bicycle networks in other countries; however they are only just being experimented with in the United States. The bike box enables bicyclists to get to the front of traffic at signalized intersections so that they may better clear the intersection and make left turns than they might otherwise be able. They also have the added benefit of distancing motorists from crosswalks, thus providing a more pleasant crossing place for pedestrians. These facilities should be considered as a concept as they may provide improved safety at high bicycle volume intersections however this plan does not recommend any locations for such facilities.



Diagram and Example of a Bicycle Box

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS– BICYCLE SIGNAL HEADS

Bicycle signal heads are alterations to intersection signals that provide bicycle only phases giving precedent to bicycle over vehicular movements. The City of Davis, Calif., has pioneered the use of bicycle signal heads at signalized intersections providing bicycle only phases and movements. This type of signal head has yet to be approved for inclusion in the national MUTCD, although they have been approved for use by individual states such as California. As with bike boxes, these facility improvements should be considered as a concept as they may provide improved safety at high bicycle volume intersections, however this plan does not recommend the use at any locations.



Bicycle Signal Head

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS– DRAINAGE GRATES & UTILITY COVERS

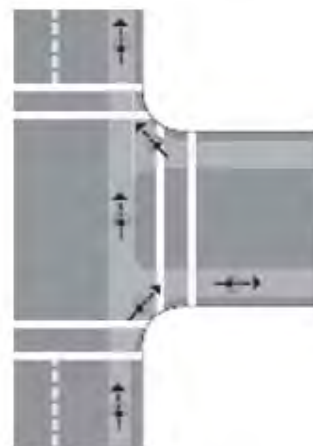
Drainage grates and utility covers can be hazards for bicyclists because grate slots trap or divert bike wheels, slippery utility covers or grate surfaces are common, surfaces may not be flush with the road and debris and water collects. Drainage grates with bars that are parallel to the direction of travel can catch bicycle tires and cause the bicyclist to fall. Utility covers that are not flush with the surrounding pavement can be hazardous to bicyclists as well.



WisDOT Approved Grates

should avoid drainage grates wherever possible.

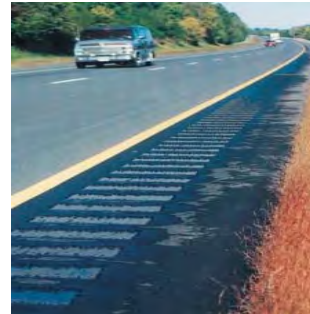
Solutions recommended to address the drainage grate issues include using Wisconsin Department of Transportation grates (Types A, H, HM, R, and Z) as these are bike friendly if installed and maintained flush and perpendicular to the street, keeping grates and covers out of a bicycles typical travel path by keeping them close to the curb/in the gutter pan, offset the curb. It is recommended that the replacement of inconsistent grates and utility covers should be done as soon as possible on designated bicycle routes and in a timely manner elsewhere.



Bicycle Travel Path

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— RUMBLE STRIPS

Rumble strips are typically found on rural roads as one approach a stop sign or along the road’s edge to alert errant drivers. In the case of rumble strips used for a stop sign approach, the bicycle must enter the opposing traffic lane to avoid a rumble strip that extends from the center line to the pavement edge. When used on the paved shoulder, the strips lessen the amount of usable pavement. If continuous, rumble strips restrict a bicyclist's ability to make left-hand turns. To prevent these issues, rumble strips in paved shoulder areas should be avoided, if possible, or installed in a non-continuous pattern.



Shoulder rumble strips are not suitable as a riding surface and present a potential hazard for bicyclists. In Wisconsin, they are commonly used on freeways and expressways, but rarely on two-lane roadways. The WisDOT only provides for their use on limited access highways.



Rumble Strips

Perpendicular style rumble strips are more common on two-lane roadways and are found on state, county and town road systems. If they are required at intersection approaches, they should not continue across the paved shoulder. If a paved shoulder is not present, the right most 4 feet of pavement should be left open so bicyclists may pass safely.

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— COLORED BIKE LANES

Colored bike lanes have been a feature of bicycle infrastructure in the Netherlands (red), Denmark (blue), France (green) and many other countries for many years. In the United Kingdom, both red and green pigments are used to delineate bike lanes and bike boxes. However, in this country their use has been limited to a few experiments in just a handful of locations. One of the issues to be determined before colored bike lanes are accepted in the MUTCD will be the choice of color. Blue, probably the most visible of the colors, is often associated with facilities for people with disabilities while green and red are less visible, especially in the rain or at dusk. Controversy over the continuous maintenance of ever fading colored pavement has retarded their implementation. Additionally, in cold weather climates like Wisconsin, the operation of snow removal make the use of colored bike lanes impractical as they are affected by plow blades. These facilities should be considered as a concept however this plan does not recommend their use at this time.

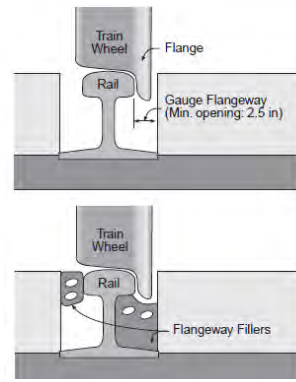


ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— RAILROAD CROSSINGS

Special care should be taken wherever a bicycle route or trail crosses railroad tracks. Numerous bicycle crashes have resulted from dangerous crossings and therefore require special consideration. Namely, the bikeway should cross railroad tracks at or near a right angle (90 degrees). This minimizes the potential for a bicyclist's front wheel to become caught by the tracks, causing a loss of steering control. If the crossing angle is less than 45 degrees, consider widening the outside lane, shoulder or bicycle lane to allow the bicyclists to improve the angle of approach without moving into traffic.



The use of compressible flangeway fillers, which are rubber or polymer fillers placed in the rail gaps, is discussed as an enhancement to bicycle operation over tracks but has been debated as their effectiveness and durability have been questioned. This type of rail improvement should not be completely discounted as the fillers effectively eliminate the gap between the rail and roadway and also keep out water and debris.



Flangeway Fillers



Railroad Warning Sign

Regardless of the angle of crossing or size of gap, it is recommended that abandoned tracks be removed in timely fashion to eliminate an unnecessary danger for bicyclists. Where hazards cannot be avoided, appropriate warning signs and markings should be installed in accordance with MUTCD.

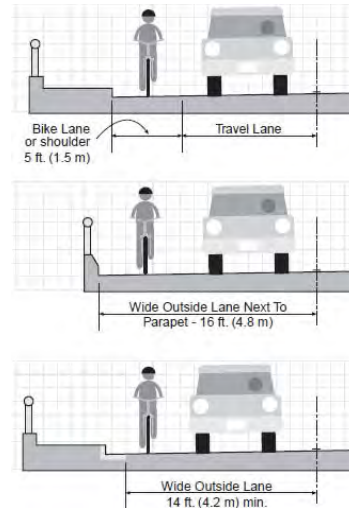
ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— BRIDGES

Oshkosh's four bridges maintained by Oshkosh provide critical links over the Fox River for all travel modes, including bicycles. Since they are expensive to build or modify, structures tend to be replaced less often than the connecting sections of roadways. As a result, bridge structures typically form "bottlenecks" on the overall bicycle route system. However, they are the only way over the river and are necessary connecting points for bicycle facilities at either end. Improving a bridge structures or considering the needs of bicyclists when reconstructing/renovating can provide significant benefits for bicycle users. Additionally, lesser bridges (such as those on Sawyer, South Main, Eagle, etc) may also be needed over creeks, rails, and possibly highways to complete a roadway or a multi-use trail system.

Improving a bridge for bicycle use involves analyzing three major areas of concern: (1) width constraints; (2) bridge railings; and (3) surface problems.

Width constraints can be addressed several ways:

- A 4-5' strip (marked or unmarked) should be included in basic bridge designs for bike lane use.
- A wide outside lane of 14-15 feet be incorporated to allow a safe shared travel lane.
- If on a low volume bridge (under 2000 average daily trips) such as those crossing creeks or railroad tracks, the use of the standard vehicle travel lane is acceptable.



Bridge railings should be used on bridges designed to carry bicycle traffic and on bridges where specific protection of bicyclists is deemed necessary. Guardrails on bridge approaches should be designed with bicycles in mind and as a general rule should be placed as far from the travel way as possible. Bicycle friendly bridge rails should be designed and used as follows:

- Highway bridges with full length shoulders that are not designated as a bicycle route should have the standard 32" railing/parapet.
- Bridges signed or marked as bikeways with bikes operating next to the rail should have increased rail/parapet height to minimum of 3.5 feet.
- In cases where existing bridge railings are lower than desired, consideration should be given to retrofitting it, bringing the height to the desired 3.5 feet.



On all bridge deck surfaces, special care should be taken to ensure conditions are bicycle friendly and safe. The bridge deck itself should not pose a hazard to bicyclists as steel decking on draw and swing bridges can cause steering difficulties. Options for bridge surface safety include:

- The use of bike-safe expansion joints, which are rubberized joint filler or skid-resistant steel plates attached to one side of the joint for uneven joints.
- Filling voids on steel decks with lightweight concrete at least on the right sides near the edges of the roadways while also providing warning signage.

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— ROUNDABOUTS

Over 1,000 roundabouts are operational in the United States and, according to the Federal Highway Administration, 150-200 new roundabouts are being constructed each year. Roundabouts are becoming increasingly common in the State of Wisconsin and have recently been included at multiple locations in the City of Oshkosh, including the Jackson Street/Murdock Avenue intersection and the overpasses of Highway 41. Roundabouts can move traffic safely through an intersection because they reduce the speeds of vehicles and reduce the number of conflict points. Studies by the Insurance Institute for Highway Safety have shown

that roundabouts reduce fatal crashes by 90 percent, injury crashes by 76 percent, pedestrian crashes by 30-40 percent, and bicycle crashes by 10 percent. A majority of crashes at roundabouts involve entering vehicles and circulating bicycles. This fact reinforces the need to reduce entering speeds by providing ample maneuvering space, maintaining good visibility and enforcing yield conditions of entering traffic.

Generally there are two ways to accommodate bicyclists in roundabouts: in mixed flow with vehicle traffic and along a separated sidepath or sidewalk.

In low speed two-lane and single lane roundabouts, few negative effects are associated with mixing in the traffic stream. Basically, the bicyclist takes the lane and rides like an automobile. When bike lanes lead to a low speed two-lane and single lane roundabout, the lane should be discontinued approximately 35-65 feet prior to the roundabout, rather than continuing them through.



Bicycle safety tends to deteriorate at higher speed multiple lane configurations and at flared entries. Design considerations for higher speed multiple lane roundabouts include a separated shared use sidepath/sidewalk. In this instance the bicyclist dismounts and becomes a pedestrian, using the crosswalks at each leg where a street enters. Alternatively, diverting bicycle traffic through other non-roundabout intersections is recommended but is generally impractical, especially for those at highway overpasses.

Sometimes two or more roundabouts are placed one after the other, often when they are used on either side of a highway interchange. Witzel Avenue near Highway 41 is an example where two roundabouts (one on either side of the highway) are used and 9th Avenue near Highway 41 is an example where four roundabouts are used (two on either side of a Highway). If the spacing is close, on a case by case basis, the bike lane/facility should not resume until after the last roundabout but if there is an extended distance between them, the bike lane/facility should resume in between each roundabout.

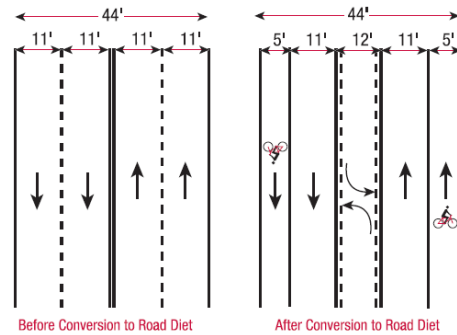


Oshkosh Roundabouts over Highway 41

ADDITIONAL BICYCLE FACILITY CONSIDERATIONS— ROAD DIETS

Road diets are a technique in transportation planning whereby a road is reduced in number of travel lanes and/or effective width in order to achieve systemic improvements. Road diets are most often conversions of four-lane undivided roads into three lanes (two through lanes and a center turn lane). The fourth lane may be converted to bicycle lanes, sidewalks, terrace greenspace and/or on-street parking. In other words, existing space is reallocated; the overall area remains the same.

Under most average daily traffic (ADT) conditions tested, road diets have minimal effects on vehicle capacity, because left-turning vehicles are moved into a common two-way left-turn lane. However, for road diets with ADTs above approximately 20,000 vehicles, there is a greater likelihood that traffic congestion will increase to the point of diverting traffic to alternate routes.



Road diets can offer potential benefits to both vehicles and pedestrians. On a four-lane street, drivers change lanes to pass slower vehicles (such as vehicles stopped in the left lane waiting to make a left turn). In contrast, drivers' speeds on two-lane streets are limited by the speed of the lead vehicle. Thus, road diets may reduce vehicle speeds and vehicle interactions during lane changes, which potentially could reduce the number and severity of vehicle-to-vehicle crashes. Pedestrians benefit because they have fewer lanes of traffic to cross, and because motor vehicles are likely to be moving more slowly. The Federal Highway Administration (FHWA) report Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations found that pedestrian crash risk was reduced when pedestrians crossed two- and three-lane roads, compared to roads with four or more lanes.

Additional information on road diets is located in Appendix G.

6.3 PEDESTRIAN FACILITIES

As a general rule, pedestrian facilities should be installed where people live, work, go to school, or walk to accomplish errands or visit neighbors and friends but they should also be placed to facilitate recreational walking. The overriding principle in providing for pedestrians is to create public rights-of-way that work effectively for and benefit all modes of transportation. A transportation environment and system that works for pedestrians will generally work better for bicyclists, disabled persons, automobile drivers, and for all other users, including transit and commercial vehicles.

Oshkosh's pedestrian framework is partially in place in that sidewalks or trails are required for new subdivisions and other development. Additionally, the City has policy of including walks on most if not all reconstructed streets. However, what constitutes a "pedestrian-friendly" or "walkable" neighborhood or business district

is much more than merely having sidewalk facilities in place. A “walkable” or pedestrian-friendly community is one that provides a comfortable and safe environment for pedestrians. High quality, navigable, appropriately sized sidewalks certainly are one part of the equation; however, other elements and amenities such as crosswalks, signalization, traffic calming, pedestrian-scale lighting, street furniture, and space separating vehicle traffic lanes from sidewalks are also extremely important. Best facility practices for Oshkosh pedestrian facilities include three primary facility types: Sidewalks, sidepaths, and multi-use trails. Other infrastructure facilities designed to increase the effectiveness of the pedestrian network are also discussed within this section.

PEDESTRIAN FACILITY TYPES - SIDEWALKS

Sidewalks are paths located within a right-of-way along the side of a road and are normally separated from the vehicular section by a curb. There may also be street furniture and/or vegetation between the pedestrian section and the vehicular section.



Sidewalks form the backbone of the physical portion of our pedestrian transportation network. Sidewalks are "pedestrian lanes" providing people with space to travel within the public right-of-way that is separated from roadway and vehicles. They need to be safe, accessible, and aesthetically pleasing to attract pedestrians and encourage continued walking as a form of transportation. In areas of high pedestrian activity, walks need to be sufficiently wide to carry traffic. Sidewalks not only function as a mobility facility, they provide places to walk, run, skate, and play. Sidewalks in Oshkosh serve as areas for young, inexperienced or disabled bicyclists who ride at slow speeds. Furthermore, they typically delineate public right-of-way from private property, although many sidewalks are included as part of a private development or are located within an easement area.



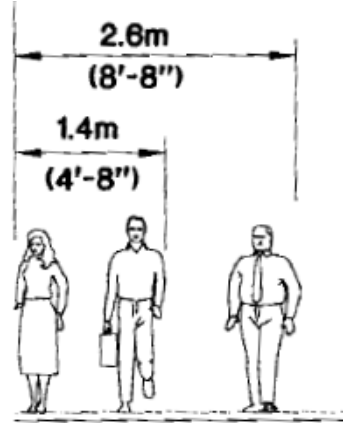
Street cross-section for sidewalk

Sidewalks are associated with significant reductions in pedestrian collisions with motor vehicles, improve mobility for pedestrians and provide access for all types of pedestrian travel: to and from home, work, parks, schools, shopping areas, transit stops, etc. and sidewalks and street crossings accommodate older and disabled people who are often pedestrians, by choice or necessity.



General design standards for the appropriate design and construction of our sidewalk network include:

- Should be installed on both sides of the street as well as along cul-de-sac or dead ended streets.
- Be a minimum of 5 feet wide in residential areas, although 4 feet could be considered in special circumstances.
- Increased width in high volume pedestrian areas to approximately 8 to 10 feet. High volume pedestrian areas include but are not limited to schools, transit stops, recreational/event areas and commercial zones.
- A 4 to 6 foot terrace “buffer zone” should be provided to separate pedestrians from the street. Use of street furniture and other buffers are acceptable in more commercial or urbanized areas.
- With cooperation and coordination of other entities, prioritize interconnecting noncontiguous networks with town and county roads.
- Retrofit streets that do not have a continuous or accessible system, such as locations near transit stops, schools, parks, public buildings, and other areas with high concentrations of pedestrians.
- Material selection should be firm, stable, and slip-resistant such as concrete.



Street cross-section for sidewalk



Alternate Sidewalk Materials

PEDESTRIAN FACILITY TYPES - SIDEPATHS

Sidepaths are segregated facilities located next to or alongside a roadway. They are generally located within the right-of-way but also on private property via easements. These facilities are separated from the roadway and divided from motor vehicle traffic by a physical barrier and/or increased greenspace. A sidepath is similar to a sidewalk in that it can support two-way traffic but is wider to facilitate multiple uses. They are most often utilized in areas a sidewalk is deemed to be undesirable, unsafe or unfeasible such as rural areas or urban areas with limited right-of-way or difficult design considerations.



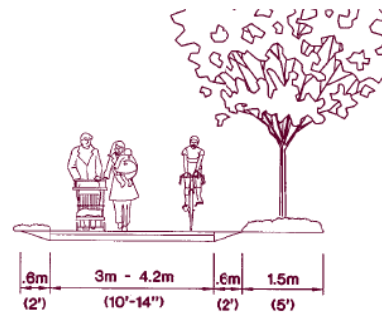
Sidepaths along major roadways are feasible, given an appropriate level of separation between them and automobile facilities. The provision of sidepaths avoid car-pedestrian conflict and are most appropriate where there is low amounts and controlled cross traffic, including drive openings.

Sidepaths for pedestrians are typically more desirable in rural areas where there is no curb and gutter or insufficient right-of-way for sidewalks. The Town of Algoma, Oshkosh's neighbor to the west, utilizes sidepaths as their major pedestrian facility. They are appropriate in urban areas if they provide access that is not possible via sidewalks, potentially due to limited right-of-way.

Accommodating pedestrian movements on sidewalks are typically a better and more desirable option as it avoids the costs associated with the separate sidepath facility

Design Consideration

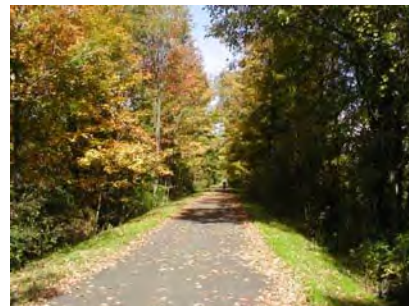
- Installed on one or both sides of the street, depending on anticipated level of use and available area.
- May be located within the right-of-way, easement area of private property or combination.
- Minimum of 5 feet wide for pedestrian only movement, 10-14 feet for multi-use (with 12' preferred) with the caveat that reductions could be acceptable if obstacles such as trees be avoided.
- A separation from road of greater than 5 ft is desirable to separate pedestrians from the street.
- As with sidewalks, material selection should be firm, stable, and slip-resistant - concrete, asphalt, bricks/pavers. Use of alternative materials like crushed stone or woodchips should be discouraged but considered on a case-by-case basis.



Sidepath Cross-Section

PEDESTRIAN FACILITY TYPES – MULTI-USE TRAILS

Off-road or multi-use trails have a variety of different types and design considerations. In our plan, all trails are determined to be multi-use type trails with recommendations including Rail Trails, Rails with Trails and Waterway/Greenway Trails. These facility types are detailed within the bicycle facility section of this chapter. Recommendations and considerations made within that section shall also apply to this section.



PEDESTRIAN FACILITY IMPROVEMENTS— CROSSWALKS

Crosswalks are defined as an area designated for pedestrians to cross vehicle lanes.

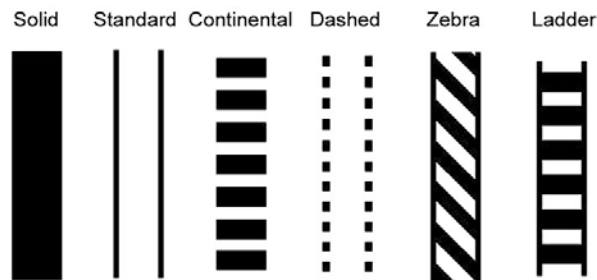
Their purpose is to warn motorists to expect and yield to pedestrians and indicate the preferred crossing locations for pedestrians. Crosswalk locations should be convenient for pedestrian access. They can be used in conjunction with other measures (such as advance warning signs, warning signs, stop bars, median crossing islands and curb extensions), designed to improve the safety of a pedestrian crossing and aid the visually impaired.



Crosswalks - Markings

To enhance pedestrian safety, priority should be given to crosswalk marking in high volume pedestrian hazard areas such as schools, parks, and commercial areas as well as long blocks. The map in Appendix D depicts these areas within Oshkosh. Markings must be placed to include the ramp so that a wheelchair does not have to leave the marked crosswalk to access the ramp.

Various crosswalk marking patterns are given in the MUTCD. The "international" (also known as "ladder" or "zebra") markings are preferred because they are most visible, which is particularly important at night or in low light conditions (e.g., rain). The use of the weaker "standard" or "dashed" designs should be discouraged.



The width of crosswalks should match the sidewalk for which they service to match wider walks or to give motorists a stronger visual signal on roads with higher vehicle speeds.

Marked crosswalks should be installed in conjunction with other crossing enhancements that physically reinforce crosswalks and reduce vehicle speeds, particularly at uncontrolled locations and on major roadways. It is useful to supplement crosswalk markings with warning signs for motorists. At some locations, signs can get "lost" in visual clutter, so care must be taken in placement. All midblock crossings must include crosswalk markings.

Crosswalks - Materials

Crosswalk markings are defined in the MUTCD as solid white transverse, longitudinal, or diagonal lines. It is important to ensure that crosswalk markings are visible to motorists, particularly at night. Crosswalks must not be slippery, create tripping hazards nor be difficult to traverse by those with diminished mobility or visual capabilities. Acceptable materials for marking are paint and tape.

Alternate materials or colors may be used to supplement the markings but not supersede them. Materials such as brick, granite and cobblestones are often used as an aesthetic enhancement, but should be discouraged as a substitute for regular roadway markings as they are not smooth, become slippery when wet, difficult to traverse and are likely to become uneven over time when subject to the regular weight of motor vehicles and snow plowing. Consideration should be given to using colored concrete, scored concrete and pavers as accents to the traditional white crosswalk markings.

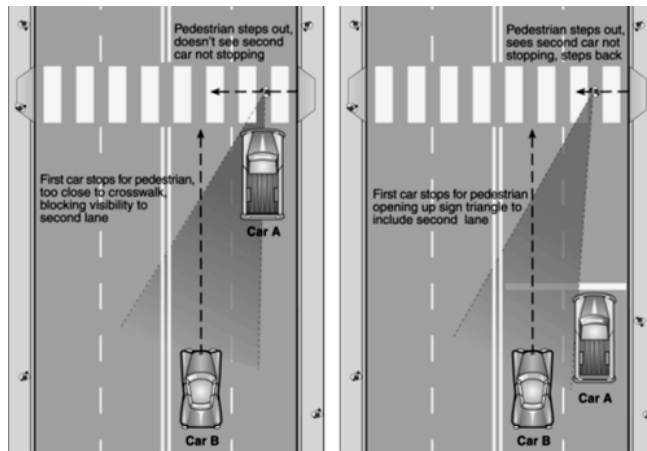


PEDESTRIAN FACILITY IMPROVEMENTS— CROSSING ENHANCEMENTS

Advance Stop/Yield Lines

At signalized intersections and midblock marked crosswalks, an advance stop/yield line set back from the crosswalk allows pedestrians and drivers to have a clearer view of each other and more time in which to assess each other's intentions.

An advance stop/yield line placed 20 to 50 feet ahead of the crosswalk can greatly reduce the likelihood of a multiple-threat crash, as this encourages drivers to stop back far enough so a pedestrian can see if a second motor vehicle is not stopping and be able to take evasive action. The advance yield/stop line should be supplemented with "Stop Here for Pedestrians" signs at high volume areas.



Purpose

- Improve visibility of pedestrians to motorists.
- Allow pedestrians to advance before motor vehicles turn.

Considerations

- Effectiveness depends on motorist compliance with the marked stop line.
- If placed too far in advance of the crosswalk, motorists may ignore the line.

Curb Extensions

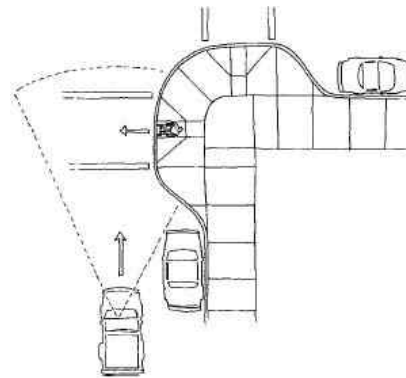
Curb extensions—also known as bump-outs, bulb-outs or neckdowns—extend the sidewalk or curb line out into the parking lane, which reduces the effective street width.



Curb extensions are only appropriate where there is an on-street parking lane. Curb extensions must not extend into travel lanes, bicycle lanes, or shoulders. Curb extensions should not extend more than 6 feet from the curb. The turning needs of larger vehicles, such as school buses, need to be considered in curb extension design.

Purpose

- Increase visibility and reduce speed of turning vehicles.
- Encourage pedestrians to cross at designated locations.
- Prevent motor vehicles from parking at corners.
- Shorten crossing distance and reduce pedestrian exposure.



Considerations

- Can provide adequate space on narrow sidewalks for curb ramps, landings, landscaping, and street furniture.
- Midblock extensions provide an opportunity to enhance midblock crossings.
- Emergency access is often improved through the use of curb extensions if intersections are kept clear of parked cars. Fire engines and other emergency vehicles can climb a curb where they would not be able to move a parked car. At midblock locations, curb extensions can keep fire hydrants clear of parked cars and make them more accessible.

Crossing Islands

Crossing islands—also known as center islands, refuge islands, or pedestrian islands—are raised islands placed in the center of the street at intersections or midblock to protect crossing pedestrians from motor vehicles.

Center crossing islands allow pedestrians to deal with one direction of traffic at a time, and they enable them to stop partway across the street and wait for a gap in traffic. Where midblock or intersection crosswalks are installed at uncontrolled locations (i.e., no traffic signal or stop sign), crossing islands should be considered as a supplement to the crosswalk.



Curb extensions may be built in conjunction with center crossing islands to further improve the pedestrian environment, where there is on-street parking.

Purpose

- Enhance and highlight pedestrian crossings, particularly at non-signalized and midblock crossing points.
- Reduce vehicle speeds approaching pedestrian crossings.

Considerations

- Illuminate or highlight islands with street lights, signs, and/or reflectors to ensure that motorists see them.
- Design islands to accommodate pedestrians in wheelchairs.
- Crossing islands at intersections or near driveways may affect left-turn access.

Raised Medians

Raised medians are barriers inside the street or roadway that can serve as a landing place for pedestrians who cross a street midblock or at an intersection location.

Raised medians are most useful on high-volume, high-speed roads, and should be designed to provide visual indication of the border between the pedestrian refuge area and the motorized vehicle roadway.

Purpose

- Manage motor vehicle traffic.
- Provide a safe “landing” for pedestrians to cross the street.
- Provide space for street trees and other landscaping

Considerations

- Space requirements limit ability to locate and install.
- Landscaping, if not maintained, could obstruct the visibility.
- Median crossings at midblock and intersection locations are expensive as they must be constructed to be fully accessible.



PEDESTRIAN FACILITY IMPROVEMENTS— CURB RAMPS

Curb ramps provide access between the sidewalk and roadway for people using wheelchairs, strollers, walkers, crutches, handcarts, bicycles, and also for pedestrians with mobility impairments who have trouble stepping up and down high curbs.



Curb ramps must be installed at all intersections and midblock locations where pedestrian crossings exist, as mandated by federal legislation. Where feasible, separate curb ramps for each crosswalk at an intersection should be provided rather than having a single ramp at a corner for both crosswalks



While curb ramps are needed for use on all types of streets, priority locations are in downtown areas and on streets near transit stops, schools, parks, medical facilities, shopping areas, and near residences with people who use wheelchairs.

Purpose

- Provide access to street crossings and intersections.

Considerations

- Follow Americans with Disabilities Act (ADA) design guidelines.
- Limited right-of-way will significantly impact curb ramp location.

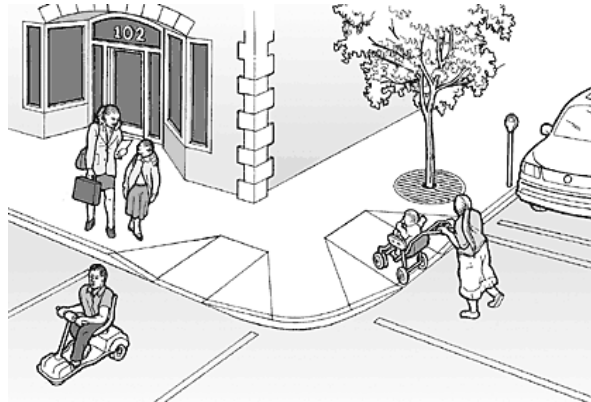


Illustration of Corner with Curb Ramp

PEDESTRIAN FACILITY IMPROVEMENTS— FACILITY SEPARATION

Where possible, a physical element should be provided to separate pedestrians from automobile traffic and consideration for separation of pedestrian from bicycle traffic on multiple-use trails.

A “buffer zone” or terrace area will vary according to the street type, but desirable distances for pedestrian and automobile separation is:

Sidewalks - separation of 4 to 6 ft is desirable.

Sidepaths - separation greater than 5 ft is necessary.

Off-road trails - complete physical separation and independence from the roadway/R-O-W.

In the downtown or commercial districts, a “street furniture zone” is often appropriate. Parked cars and/or bicycle lanes can also add to or act as an acceptable buffer zone. In more suburban or rural areas, a landscape strip is most suitable.

For trails associated with natural areas that are steeply sloped such as rivers/creeks, a physical barrier (at least 3.5’ high), such as plantings, shrubbery, railing, or provision of relatively open fence should be considered to be provided.



SIGNS AND SIGNALS

Traffic control devices are used to improve safety and access for pedestrians. In addition to marked crosswalks, several other devices are available, including pedestrian signals, pedestrian signal timing, traffic signal enhancements, right-turn-on-red-restrictions, and signage.

Signals are particularly important at high-use, midblock crossings on higher speed roads, multi-lane roads, or at highly congested intersections. In downtown areas, signals should be closely spaced, possibly every block. Signals are usually spaced farther apart in suburban or outlying areas.

Marked crosswalks at signals should always be installed at all four legs to encourage pedestrians to cross at the signal and discourage motorists from encroaching into the crossing area.



Purpose

- Provide intervals in where pedestrians can cross streets safely.

Considerations

- Where pedestrian traffic is regular and frequent, pedestrian phases should come up automatically. Pedestrian actuation should only be used when pedestrian crossings are intermittent.
- Marked crosswalks at signals should be installed at all four legs.

Signs and Signals – Pedestrian Signal/Timing

Pedestrian signal indications should be used at all traffic signals, unless the signal is located on a highway where walking is prohibited. The international pedestrian symbol signal is recommended and “WALK and DON'T WALK” messages should not be used for new installations.

Pedestrian signals should be clearly visible to the pedestrian when in the crosswalk or waiting on the far side of the street. Larger pedestrian signals should be used where the streets are wide or visibility limited.



Signals should be supplemented with audible messages to make crossing information accessible for all pedestrians, including those with vision impairments.

Traffic signals create gaps in the automobile traffic flow, allowing pedestrians to cross the street. They should allow adequate crossing time for pedestrians and an adequate clearance interval (based upon a max. walk speed of 3.5 feet/second).



Purpose

- Indicate appropriate time for pedestrians to cross
- Provide pedestrian clearance interval

Considerations

- Ensure that signals are visible to pedestrians
- Pushbuttons must be well positioned and within easy reach
- Signal cycles should be kept short (ideally 90 seconds maximum) to reduce pedestrian delay

Signs and Signals – Signal Enhancements

A variety of traffic signal enhancements that can benefit pedestrians (as well as bicyclists) are available. These include:

Automatic pedestrian detectors - "intelligent" microwave or infrared pedestrian detectors are currently being installed and tested. They are considered experimental and their reliability may vary under different environmental conditions, like Wisconsin snow.

- Larger traffic signals - better visibility
- Signal placement - prohibit motorists waiting at a red light from seeing other signals and anticipating green lights
- Countdown signals - provide pedestrians with information about the amount of time remaining in a crossing interval.



Automatic Pedestrian Detectors

Purpose

- Improve pedestrian accommodation at signalized crossings.

Considerations

- If pedestrians with vision impairments are to take advantage of them, pedestrian signals need to indicate the crossing interval by visual and audible means.

Signs and Signals – Right-Turn-On-Red Restriction

A permissible Right-Turn-on-Red (RTOR) was introduced in the 1970s as a fuel-saving measure and sometimes has detrimental effects on pedestrians. While the law requires motorists to come to a full stop and yield to cross-street traffic and pedestrians prior to turning right on red, many motorists do not fully comply with the regulations.



Prohibiting RTOR should be considered where or when there are high pedestrian volumes, or where there is a proven problem with motorists conflicting with pedestrians. This can be done with a simple sign posting.

Purpose

- Increase pedestrian safety and decrease crashes with right-turning vehicles.

Considerations

- Prohibiting RTOR is a simple, low-cost measure. Together with a leading pedestrian interval, the signal changes can benefit pedestrians with minimal impact on traffic.
- Prohibiting RTOR may cause congestion at locations with high right turn movements. Part-time RTOR prohibitions during the busy times may be sufficient.
- Signs should be clearly visible to right-turning motorists stopped at the crosswalk.

Signs and Signals – Signage

Signs can provide important information that can improve road safety. By letting people know what to expect, there is a greater chance that they will react and behave appropriately. Signage used shall follow the MUTCD Standard Signs & Markings book.



All signs should be periodically checked to make sure that they are in good condition, free from graffiti, reflective at night, and continue to serve a purpose. Regulatory signs, such as STOP, YIELD, or turn restrictions require certain driver actions and can be enforced.

Warning signs can provide helpful information, especially to motorists and pedestrians unfamiliar with an area. Some examples of signs that affect pedestrians include pedestrian warning signs, motorist warning signs, NO TURN ON RED signs, and guide signs.

Advance pedestrian warning signs should be used, except in very urbanized situations where short blocks don't provide appropriate distances for locating the signs. They should always be used where pedestrian crossings may not be expected by motorists, such as midblock.

Signs are defined by their function as follows:

- Regulatory signs (white) - give notice of traffic laws or regulations.
- Warning signs (yellow) - give notice of a situation that might not be readily apparent.
- Guide signs (green/blue/brown) - show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information.
- Temporary Traffic Control (orange) – give information on construction or other temporary situations



Example of Guide Sign

Purpose

- Provide regulation, warning, or information to road users as to what to expect and how to behave.
- Provide information on the location of destinations.

Considerations

- Overuse of signs breeds noncompliance and disrespect.
- Signs should be limited to avoid visual clutter that may result in driver not being able to read or pay attention to any of the signs.
- Signs must have adequate nighttime reflectivity

TRAFFIC CALMING

Traffic calming is a way to design streets, using physical measures, to encourage people to drive more slowly and is self-enforcing. The design of the roadway results in the desired effect, without relying on compliance with traffic control devices such as signals and signs, or on enforcement. While elements do not force a change in driver behavior, they can provide the visual cues that encourage people to drive more slowly. Use of several of the traffic-calming measures has also resulted in substantial reductions in motor vehicle crashes.

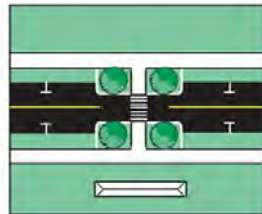
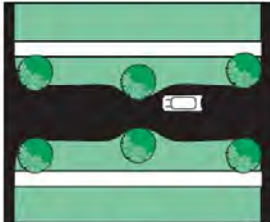


This skewed intersection was modified to slow vehicle speeds and increase awareness at the intersection.

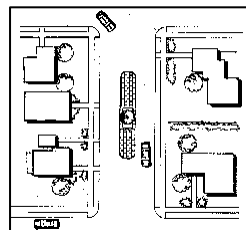
Research on traffic-calming projects in the United States supports their effectiveness at decreasing automobile speeds, reducing the number and severity of crashes, and reducing noise levels for specific contexts. Looking at a sample of various speed studies shows that typical speed reductions of 5 to 20 percent at the 85th percentile speed can be realized by the use of traffic-calming measures—including neighborhood traffic circles, chicanes, speed tables and other standard traffic-calming devices

Traffic calming measures in this plan include:

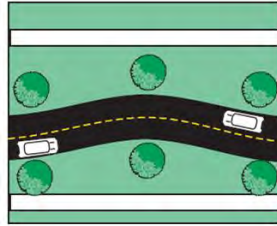
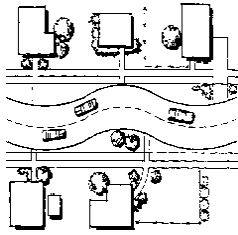
Bumpouts/Bulbouts/Neckdowns/Chokers - Curb extensions at intersections that reduce curb-to-curb roadway travel lane widths.



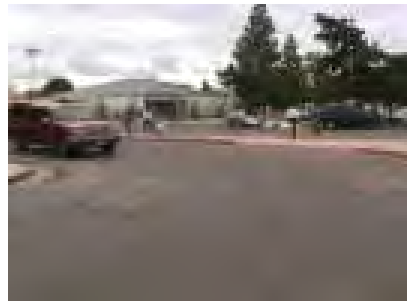
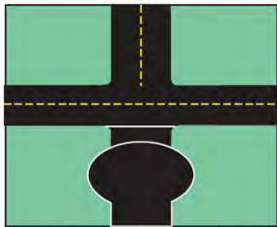
Center Islands - Raised islands located along the centerline of a roadway that narrow the width at that location.



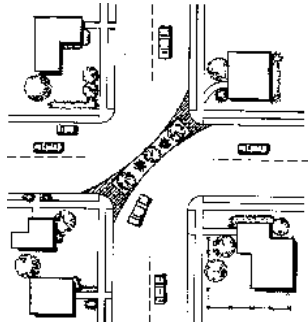
Chicanes/Lateral Shifts - Curb extensions that alternate from one side of the roadway to the other, forming s-shaped curves.



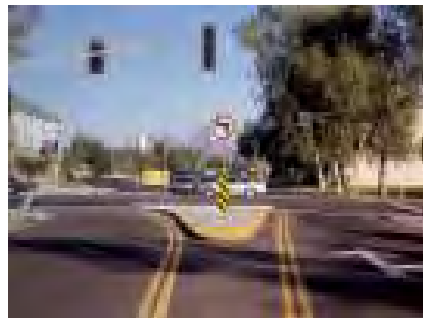
Closures (Cul-de-sacs) - Barriers placed across roadways to completely close through vehicle traffic.



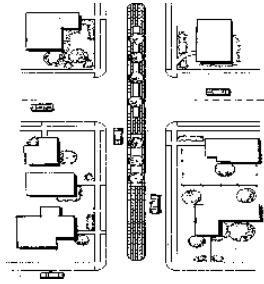
Diverters - Barriers placed diagonally across an intersection, blocking certain movements.



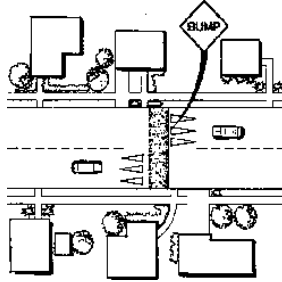
Forced Turn Lanes - Raised islands located on approaches to an intersection that block certain movements.



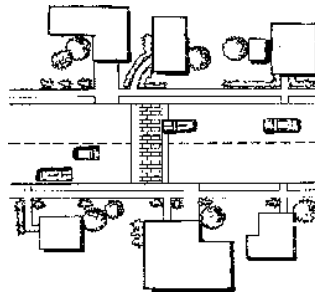
Median Barriers - Raised islands located along the centerline of a roadway and continuing through an intersection to block cross traffic.



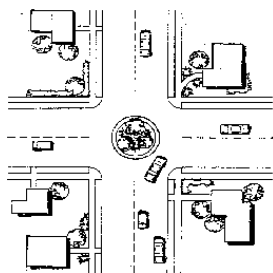
Speed Humps - Rounded raised pavement devices placed across roadways to slow and/or discourage traffic.



Speed Tables/Raised Crossings - Flat topped speed humps often constructed with a brick or other textured material to slow traffic.



Neighborhood Traffic Circles - Barriers placed in the middle of an intersection, directing all traffic in the same direction.



LIGHTING IMPROVEMENTS

Good quality and appropriate placement of lighting can enhance a pedestrian environment as well as increase comfort and safety, especially at intersections. Without sufficient overhead lighting, motorists may not be able to see pedestrians in time to stop for them. Lighting should be addressed based on location as follows:

Residential areas - Streetlights should be scaled and placed in such a way to provide a safe consistent light level.

Commercial areas - Streetlights should be placed along both sides of the street. Pedestrian crossing areas should be supplemented with brighter or additional lighting. This could include lighting pedestrian crosswalks and crosswalk approaches.

Downtown and other “specialty” areas - Specialty pedestrian-level lighting should be placed over/within the sidewalks to improve pedestrian comfort, security, and safety.

Purpose

- Enhance safety of all roadway users, particularly pedestrians.
- Improve nighttime security.

Considerations

- Ensure that pedestrian walkways and crosswalks are well lit and maintain uniform light levels.
- Install lighting on both sides of wide streets and streets in commercial districts.



WALKING ENVIRONMENT – “STREET FURNITURE”/OBSTRUCTIONS

Well-designed walking environments should be enhanced by urban design elements and street furniture, such as benches, bus shelters, and trash receptacles. Obstructions that must be designed around include signs, utility poles, light fixtures, sandwich board signs, etc. These items should be practical in function, consistent in design, and chosen as local plans dictate.

Benches, trash receptacles, bicycle parking racks, and other possible street obstructions should be carefully placed to create an unobstructed path for pedestrians. In no area should the clear pedestrian way be less than 5 feet in width.

Walking environments within the street must be properly maintained and kept clear of debris, overgrown vegetation, tripping hazards, or water accumulation. Snow removal is extremely important for maintaining safety and mobility. In Oshkosh, local ordinances give property owners the responsibility of removing snow within 24 hours of a weather event.



Purpose

- Enhance the pedestrian environment and enliven areas by encouraging community life.

Considerations

- Good-quality street furniture will show that the community values its public spaces and is more cost-effective in the long run.
- Include plans and policies for landscape irrigation/maintenance.
- Ensure proper placement of furniture; don't block walkway, curb ramps or create sightline problems.
- Ensure adequacy of overhead clearances and detectability of protruding objects for pedestrians who are visually impaired.

WALKING ENVIRONMENT – PEDESTRIAN OVERPASS/UNDERPASS

Pedestrian overpasses and underpasses allow for uninterrupted flow of pedestrian movement separated from the vehicle traffic. Due to their expense and inconvenience to pedestrians, they should be a measure of last resort. It is usually more appropriate to install safe crossings that are accessible to all pedestrians. Grade separated facilities are extremely high-cost, and overpasses in particular are a visually intrusive measure.



Pedestrian overpasses and underpasses must accommodate all persons, as required by the ADA. These measures include ramps or elevators. Extensive ramping will accommodate wheelchairs and bicyclists, but results in long crossing distances and additional time that discourage their use. Studies have shown that many pedestrians will not use an overpass or underpass if they can cross at street level in about the same amount of time or less. Grade separation is most appropriate in extreme cases where pedestrians must cross highways such as Highway 41. Oshkosh has utilized bridge underpasses at the newly constructed Wisconsin Street Bridge, and should consider them for future bridge upgrades at Jackson and Main.



Purpose

- Provide crossings where other appropriate pedestrian facility is not available.
- Connect off-road trails and paths across major barriers.

Considerations

- Use sparingly and as a measure of last resort. Most appropriate over busy, high-speed highways, railroad tracks, or barriers.
- Lighting, drainage, graffiti removal, and security are major concerns.
- Must be wheelchair accessible, which generally results in long ramps on either end of the overpass/underpass.

6.4 IMPACTS OF BICYCLE AND PEDESTRIAN FACILITIES ALTERNATIVES

Transportation planning is largely dependent on land-use planning and the types of facilities being planned. Pedestrian amenities, such as street trees and lights, will do little to promote walking if there is nowhere to walk to. Land use, zoning, and subdivision ordinances that promote segregated uses separate origins and destinations, impede bicycling and walking, and necessitate reliance on the automobile. Governments and school districts should avoid constructing public buildings and facilities in places where people cannot walk or bike to them. Planning policies and city ordinances, on the other hand, can promote all modes of transportation equally by encouraging buildings to front the street whenever practical, requiring bike rack installation, and reducing/limiting the number of required auto parking for new buildings. In addition, friendly environments for bicyclists and pedestrians have been shown to facilitate a stronger sense of community, benefit public health, and raise property values.

A 1999 Study by the Urban Land Institute of four new pedestrian communities determined that homebuyers were willing to pay \$20,000 more for homes in “walkable” areas compared to similar homes in surrounding areas. New Urbanism “walkable” communities enjoy significantly higher housing values than traditional suburban developments. In a growing number of small and medium sized cities, downtown condominium and townhouse prices and apartment rents command a premium over comparable suburban, auto- dependant real estate.

7

SAFETY ANALYSIS / FIVE “E”s

The development of bicycle and pedestrian facilities as discussed in Chapter 6 is only one part of increasing walking and bicycling. In order to enable transportation users a variety of modal choices, the safety of all transportation methods must be considered and accommodated. To this end, Chapter 7 comprises an analysis of regional crash statistics and characteristics, identifies countermeasures to prevent crashes, and outlines the Five E’s for improving bicycle and pedestrian safety.

7.1 CRASH STATISTICS

Roadway and bicycle safety specialists now use the term “crash” instead of “accident” to emphasize that most automobile and bicycle interactions are predictable and preventable occurrences. Bicycle crashes include both falls and collisions. A bicyclist may fall due to slippery conditions or an unexpected impediment to travel; or a bicyclist might have a collision with a car, another bike or a pedestrian. These are all considered “crashes” and in a perfect world, “crash” data would be available for all crashes no matter what the cause.

Understanding bicycle and pedestrian crash data helps to identify methods for preventing future crashes. Detailing statistics, such as who is typically involved in a crash (children or adults), where crashes occur (specific intersections or streets) and what time of day crashes occur allows bicycle and pedestrian planners and engineers to more accurately implement safety programs and roadway design enhancements.

National Data

Nationally, 773 pedalcyclists and 4,784 pedestrians were killed in 2006, according to the National Highway Traffic Safety Administration. Additionally, 61,000 pedestrians and 44,000 pedalcyclists were injured in traffic crashes in the United States this same year. Pedalcyclists include all types of transportation that is pedaled by the user, including bicycles, tricycles, etc. They accounted for 13 percent of all nonoccupant traffic fatalities in 2006, while pedestrians make up 80 percent of all nonoccupant traffic fatalities. In terms of age, those under age 16 accounted for 14 percent of all pedalcyclists killed and 28 percent of those injured in traffic crashes in 2006. Children under age 16 accounted for 17 percent of the pedestrian fatalities in 2006.

Wisconsin Data

In Wisconsin, 1,110 pedalcyclists were injured and 10 pedalcyclists were killed in 2007. With 1.79 pedalcyclists fatalities per million population, Wisconsin was slightly higher than its neighboring states including Illinois (1.40), and Minnesota (0.77) and slightly lower than Iowa (2.34). Additionally, fifty-one pedestrians were killed and 1,284 pedestrians were injured in traffic crashes in 2007.

Local County Data

The Wisconsin Department of Transportation (WisDOT) Motor Vehicles Traffic Crash Section indicates that in 2007, Winnebago County saw 49 pedalcyclists and 30 pedestrians injured in traffic crashes. Of the 51 pedestrian fatalities statewide in 2007, two pedestrians died in Winnebago County.

7.1.1 BICYCLE CRASHES AND COUNTERMEASURES

Generally, there are three common crash types that comprise the vast majority of bicycle crashes occurring in both rural and urban areas of Winnebago County: right-of-way take over, bicycle “ride-outs” and wrong-way riding.

RIGHT-OF-WAY TAKE OVER

Right-of-way take over happens when either a bicycle or a car cuts off the other vehicle. For example, a car makes a left hand turn into the path of a bicyclist that is proceeding straight through an intersection or a bicyclist passes a stopped car on the right hand side at an intersection and is hit as the driver turns right.

Countermeasures include:

- Educating bicyclists on the importance of following the “rules of the road”, searching for motorists and catching the motorist's eye prior to moving into the path of an on-coming vehicle.
- Educating motorists about the rights of bicyclists as well as searching for and avoiding bicyclists.



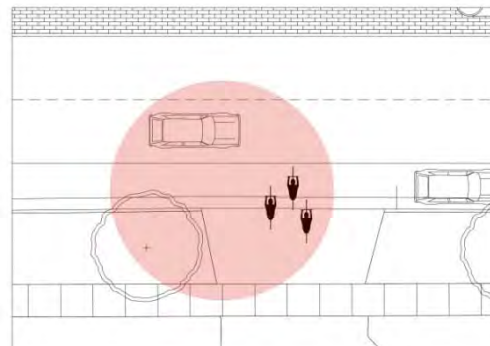
Right-of-Way Take Over

BICYCLE "RIDE-OUTS"

“Ride Outs” are very common, especially among child bicyclists. This crash occurs at driveways or along streets when the bicyclist or pedestrian darts out into traffic. It most commonly occurs at residential driveways.

Countermeasures include:

- Remove on-street parking or restrict parking near driveways to improve visibility.
- Reduce speed of traffic where appropriate.
- Educate pedestrians and cyclists on the appropriate and safe way to enter a street from a driveway.
- Alert drivers to the possibility of the presence of children and ask for extra caution on the part of the driver.



Bicycle "Ride-Out"

WRONG WAY RIDING

Wrong-way riding most commonly occurs when a bicyclist is riding on a sidewalk, which is legal within the City of Oshkosh. There is a prevalence of sidewalk riding bicyclist in Oshkosh, primarily due to a perceived lack of safety in terms of riding in the street. These crashes occur mostly at driveways and intersections as the bicyclist enters the drive or intersection and the driver does not notice him or her approaching on the right as they are looking left for traffic. Wrong-way riding on the street can also cause crashes because it places the bicyclist in a location on the street that is unexpected by the driver.

Countermeasures include:

- Educate people that sidewalk riding has hazards and how to avoid them.
- Educate bicyclists about the hazards of wrong-way riding both on the street and on the sidewalk.
- Encourage drivers to be on the lookout for sidewalk bike riding, especially around schools, in residential neighborhoods and in other areas of high bicycle volumes.

7.1.2 PEDESTRIAN CRASHES AND COUNTERMEASURES

Common characteristics of pedestrian collisions include:

- Driver distraction and inattention.
- Struck by vehicle while crossing at intersection (failure to yield right-of-way).
- Struck by vehicle while crossing midblock (failure to yield right-of-way).
- Struck from behind while walking in the roadway in the same direction as traffic.
- Motorist exceeding safe speed.
- Darting out into the street at midblock (most common for children).
- Vehicles backing up (difficult to see people walking behind).
- Collisions in urban areas (approximately 70% of all pedestrian crashes).

Effective countermeasures include the following:

- Improvements to the walking environment.
- Improvements in the road design.
- Intersection treatments.
- Traffic calming measures.
- Traffic management.
- Signs and signals.
- Other measures, including school zone improvements, speed monitoring, parking changes (add, remove, restrict), school crossing guards, ordinances, education programs, and enforcement.

The countermeasures listed above are meant to enhance the future safety of bicyclists, pedestrians, and motorists.

7.2 FIVE “E’S”

Bicycle and pedestrian travel enhances the overall transportation system only when it can be done safely. The Federal Highway Administration's Safe Routes to School program and its associated “Five Es” present a useful model to increase the number of bicyclists and pedestrians and decrease the incidence of crashes. The Five E's—**Education, Encouragement, Enforcement, Engineering, and Evaluation** are integral to one another, as it is difficult to address one element effectively without also addressing the other four. Further, if one element is ignored, then the impact of the remaining four is reduced.

7.2.1 EDUCATION

Education includes identifying safe routes to bicycle and walk; teaching community members to walk, bike and drive safely; and sharing methods to handle potentially dangerous situations. This “E” is closely tied to Encouragement strategies.

Police departments are considered to have primary responsibility for pedestrian and bicyclist safety education; however, the message is even more effective when it comes from schools, parents, elected officials, public health educators, business owners, chambers of commerce and neighbors, in addition to police officers.

At the state level, far more attention is being given to pedestrian safety. This attention stems from the Wisconsin Pedestrian Policy Plan 2020, the WisDOT Pedestrian Best Practices Guide, and from concerns that a single transportation mode (the automobile) is having a negative impact on pedestrian safety.



***Officer Promotes
Pedestrian Safety***

The City of Oshkosh can order free materials from WisDOT to promote pedestrian and bicyclist safety. Pedestrian and Bicyclist safety education materials that can be ordered include:

- School Zones Save Lives (HS210)
- I Stop for Pedestrians Bumper Stickers (HS233)
- Walk on the Safe Side (HS242)
- Myths & Facts about Pedestrian Safety (for parents) HS209

Note: School bus safety materials are also available from WisDOT Bureau of Transportation Safety (BOTS).

Other useful education tools include:

- Walkability Checklist (www.walkinginfo.org) (can be used by citizens in neighborhoods)
- Safe Communities Pedestrian Safety Action Guide (published by WisDOT)
- Walking Workshop (funded through WisDOT)

Furthermore, a bicyclist who understands the rules of the road is more likely to be a safe bicyclist. A motorist who understands that bicycles are also vehicles and treats them as such is more likely to drive safely around bicyclists. In the Oshkosh area, bicyclists and motorists must understand that they may encounter each other around any turn or over any hill. Focused educational efforts are necessary to make motorists and bicyclists aware of this reality so that they can operate their respective vehicles safely.

An effective, ongoing educational initiative caters its message and delivery techniques depending upon the audience. The City of Oshkosh can target its bicycle safety education message to three distinct groups:

- Child bicyclists and their parents
- Average adult bicyclists
- Motor vehicle operators

Children are quick learners and will copy what they see demonstrated. Basic bike safety courses for children will reach most children if offered through public and private elementary schools in Oshkosh. The Wisconsin DOT offers curriculum for teachers, such as the Basics of Bicycling, aimed at fourth and fifth graders. Physical education teachers can teach hands-on curriculum that will increase a child's cycling abilities, teach them the rules of the road and help them avoid danger. WisDOT BOTS offers funding of up to \$2,000 to public schools to buy bikes and other material for this course. Public and private school teachers are urged to attend the Wisconsin DOT's Teaching Safe Bicycling training courses.

Some communities in Wisconsin offer bicycle safety education during popular, optional summertime classes such as Safety Town or Safety Camp, which are coordinated by civic groups, such as the Junior Women's Clubs and conducted by law enforcement officers. Park and recreation departments around the state are beginning to sponsor bike safety classes taught by instructors certified by the League of American Bicyclists (LAB). A course for children K-3 requires that one parent attend. It covers bike and helmet fit, safety checks and basic bike handling skills. A course for children in fourth, fifth, and sixth grades teaches basic traffic laws, in-depth bike handling, group riding and how to select the safest route. It includes on-road riding to both test student comprehension and allow for practice of the skills learned in the classroom and parking lot exercises. The Bicycle Federation of Wisconsin can provide a list of instructors (www.bfw.org).

By involving parents in bicycle education classes, adults learn that bicycling is different from a child's point of view. Adults are reminded that children under the age of 10 cannot judge vehicle speed accurately and have a narrower range of peripheral vision, which may prevent them from seeing danger. Most parents know that their children are easily distracted and do not always pay attention. Parents can help their children practice the stop, look and listen behaviors learned in a bike safety class, and by learning what to teach their children, parents learn to model positive behaviors themselves. The Wisconsin DOT offers the video "A Kid's Eye View" free of charge.

Adult cyclists are much more difficult to reach with a safety message. LAB offers safety classes for this age group, but most adults believe they know how to ride a bike even as they ride in the wrong direction on the road or ignore stop signs. Effective ways to educate adults include point of sale safety information, presentations at bike club meetings and organized bike rides that emphasize bike safety (wearing a helmet, stopping at stop signs, riding on the right, correct lane position, signaling, etc.). Public education campaigns, discussed below, are also effective. An excellent, free brochure, “Two-Wheeled Survival in a Four-Wheeled World”, is available from the Wisconsin DOT. A convenient wallet card developed by the Bicycle Federation of Wisconsin highlights Wisconsin’s Bicycle Laws.

Young people, especially, enjoy mountain biking, which is an extremely challenging and sometimes dangerous sport. Knowing how to handle a mountain bike safely on isolated, tricky trails is critical. Schools can invite an amateur or professional mountain bike competitor to speak annually at school assemblies to reach kids with a safety message. Ideally, the speaker would also be a bicycle commuter and would cover the basic rules of the road. A local bike shop can be encouraged to offer a course on mountain bike techniques (and safety) that will appeal to children and young adults.

Brand new motorists can learn about bike safety during driver’s education classes, provided the instructor has the necessary information to teach the subject. Other motorists can learn about bike safety through public information campaigns. Senior centers often sponsor safe driving classes for older adults. The free WisDOT brochure, “Sharing the Road: Survival of the Smallest” and other basic bike safety materials should be included in such courses.

Safety campaign ideas for distribution of public information include the following:

- Publicize safe driving tips during bicycle season (via newspaper articles, public service announcements).
- Distribute WisDOT brochure “Sharing the Road”.
- Distribute “Share the Road with Bicyclists” bumper stickers.
- Encourage service groups, injury prevention groups or local hospitals to sponsor and staff bike safety booths at public events or to sponsor a bike safety fair.
- Encourage the city’s Health Services Division to hold a summer safety fair and include bike safety materials and demonstrations.
- Encourage the city’s Transportation Department to distribute safety information.
- Encourage local public libraries to display and distribute safety materials during the bicycling season and encouraging libraries to purchase educational videotapes and books about bike safety and basic maintenance.
- Distribute bike safety materials in other locations such as city hall, motor vehicle registration offices, bike shops and local libraries.

7.2.2 ENCOURAGEMENT

Encouragement can only occur after the foundation of the previous E (Education) is strong. Encouragement combines the results of the other Es to improve knowledge, facilities, and enforcement to encourage more people to walk or ride safely. Importantly, encouragement activities build interest and enthusiasm.

A bicyclist who understands how to bicycle safely in traffic is more likely to feel comfortable riding on the road and will bike more places - more often. If cyclists know that the community's roadway development and maintenance practices take bicycling into consideration, they will be more likely to use their bicycle for more types of trips. Bicyclists who believe that law enforcement will both protect them and motorists will operate their bicycles in a safer manner.

One way that the City of Oshkosh can encourage new bicyclists to go for a ride is to ensure that safety classes are offered and that safety materials are widely available. Then, the City can promote family rides by suggesting bike routes that appeal to all age and skill levels through distribution of a bicycle routes map.

Employers in the Oshkosh area can encourage employees to bike to work by providing information about bicycle commuting, installing bicycle parking, offering incentives, and making showers available.

The City can participate with other groups or other government bodies to sponsor "Bike Week" in the early summer to encourage people to ride their bike at least once during that week to a nearby destination. The Bicycle Federation of Wisconsin can help by providing information about how to plan a Bike Week. Many communities encourage different activities on different days. Some examples of fun events include Monday - Bike to School Day, Tuesday - Bike to the Library Day, Wednesday - Bike to Work Day, Thursday - Bike the Brook Day, Friday - Bike to the Store Day, Saturday - Bike to the Coffee Shop Day, Sunday - Bike to the Park Day.

Oshkosh can distribute its bicycle maps and encourage the Chamber of Commerce to develop and distribute "around town" bicycle maps and can also partner with bicycle tour operators to make sure that all of the routes and communities are ready for bicyclists. Finally, local bike shops can sell Wisconsin's four-section state bike map. This map highlights the most favorable bicycling conditions and rates all roadways for "rideability".

7.2.3 ENFORCEMENT

Enforcement includes policies that address safety issues, such as speeding or illegal turning, but also includes encouraging community members to work together to promote safe walking, bicycling, and driving. Law enforcement officers play an important role in advancing bicyclist and pedestrian safety. Officers have the greatest impact when they speak to young people in a school environment or when they demonstrate safety practices to children. Many communities sponsor bicycle rodeos or Safety Towns that emphasize the importance of wearing a helmet and riding on the correct side of the street. In this setting, children learn that they should not ride on the roadway until they understand and practice all of the rules of the road.

By involving law enforcement in delivering the bicycle safety message to motorists and bicyclists alike, officers are more apt to see that their responsibility includes the enforcement of laws that promote bike safety. Officers can reinforce bicycle safety messages by stopping bicyclists they observe ignoring the rules of the road. A verbal or written warning is very effective. Along with the warning, officers should be encouraged to give the cyclist information about sharing the road with motorists and Wisconsin's bike laws.

By stopping motorists who exhibit dangerous driving practices around bicyclists, an officer helps to prevent a future tragedy. Such a stop is a "teachable moment" and the officer can give the motorist information about sharing the road with bicyclists.

Increasing the presence of law enforcement, especially when children are present, will establish a safer traveling environment for people on foot or bike. Specifically, enforcing speed limits can boost the safety of walkers and bicyclists. The "Keep Kids Alive—Drive 25" campaign is a community-based approach to attract attention to reducing driving speed in neighborhoods or school areas.

A growing number of Wisconsin communities have bicycle patrols. Although it may not be feasible to have an officer on a bike during the entire riding season, having a trained bike patrol officer available during special events, such as the downtown events like Waterfest, helps to make the Oshkosh area's commitment to bicycling more visible to its residents. The Wisconsin DOT offers bike patrol training and it is recommended that the Oshkosh Police Department send one or more members to such a course.



Bicycle Patrol

In addition to promoting educational campaigns about pedestrian safety, the police department and its officers can join with other departments and officers throughout Wisconsin in making pedestrian safety part of community oriented policing. Technical assistance and officer training is available from WisDOT BOTS.

Sidewalk, building and property maintenance laws that support a safer, friendlier walking environment must also be enforced. For example, overgrown vegetation, namely at corners, can obscure the visibility of the pedestrian to motorists and vice versa. In addition, sidewalks in disrepair (or snow-covered) can become a tripping hazard or otherwise impassable.

7.2.4 ENGINEERING

Engineering is a broad concept used to describe the design, implementation, operation, and maintenance of traffic control devices or physical measures. It is one of the complementary strategies of the 5 Es, because engineering alone cannot produce a safer environment for walking and bicycling.

Engineering considerations include designating and signing routes and making capital improvements to provide such facilities as bike lanes, wider shoulders, and crosswalks. Engineering also includes periodic street and bridge sweeping to remove glass, gravel and other debris and the installation of drain grates that do not impede bicycle tires. The Wisconsin DOT promotes the Road Hazard Program that involves local cyclists in reporting roadway hazards to the appropriate municipal agency. The City of Oshkosh can work with the WisDOT to implement this program.



Engineering Improvement – Bulb-out, crosswalk, pedestrian sign & speed bump

The WisDOT Pedestrian Best Practices Guide provides specific engineering strategies. In addition, WisDOT at the state and district level can be called upon for technical assistance. Engineers can seek technical assistance and training from WisDOT and from the U.S. DOT. Useful websites provide ongoing help - www.bicyclinginfo.org and www.walkinginfo.org, and www.bikewalk.org. New tools on these websites include an “ask an expert” feature providing design options complete with pictures and operational information. Several interactive CDs are available as additional and handy tools.

7.2.5 EVALUATION

Evaluation involves monitoring outcomes and documenting trends through data collection before and after activities associated with the previous four Es. Evaluation is necessary to assess advancements in implementing this plan, recognize progress towards the completion of each element, and identify successes in achieving plan goals and objectives.

Attitudinal surveys provide information on community feelings toward walking and biking and travel mode surveys provide raw data on the extent and nature of walking and bicycling throughout the area. Both are useful tools for identifying methods to improve walking and bicycling in the Oshkosh area. “Walkability/bikeability” audits should be regularly performed to identify safe routes to bicycle and walk. Audits can help provide quantitative support for improvements brought about through the 5 Es programming.

In summary, the Five Es—Education, Encouragement, Enforcement, Engineering, and Evaluation—support walking and bicycling safely and help develop a culture where pedestrians and cyclists are respected and their mobility is given priority.

8

RECOMMENDATIONS & IMPLEMENTATION

The following recommendations are presented as a means to address the goals and objectives identified by the Stakeholder/Steering Group, the public, Oshkosh city staff, and the consultant in previous chapters. The recommendations were developed using an inventory and analysis of existing facilities, ordinances, and plans, and rely on suggestions from the local system users and the Oshkosh Bike and Pedestrian Stakeholder/Steering Group. This chapter recommends the formation of a commission to oversee the plan, specific bicycle and pedestrian orientated programs/policies, facility improvement recommendations to create an interconnected/comprehensive bicycle route system, costs associated with facilities and a process for plan amendment.

8.1 PRIMARY PEDESTRIAN & BICYCLING PLAN RECOMMENDATION

8.1.1 ESTABLISHMENT OF A BICYCLE AND PEDESTRIAN COMMISSION

The Bicycle and Pedestrian Plan Stakeholder/Steering Group has made a principal or overriding recommendation within the plan to create an official City of Oshkosh Bicycle and Pedestrian Commission. The proposed commission would function similar to other existing city boards/commissions such as the Parks Advisory Board, Traffic Review Advisory Board, or Sustainability Advisory Board, and would hold regular meetings and be charged with the responsibility of reviewing, amending and implementing the recommendations and initiatives included within this plan. Additionally, the Commission will annually review and monitor the progress of projects and evaluate existing facilities, plan for new development and explore funding sources. Every 5 years, the Commission will review and amend the Plan to ensure integrity and determine priorities.

It is suggested that the proposed Bicycle and Pedestrian Commission be an independent commission staffed by the Transportation Department with support of other city departments as needed, from sources such as the Department of Public Works, the Parks Department and the Community Development Department. It is recommended that a seven member commission be established with members appointed by the Mayor and Common Council. The proposed make-up is one City Council person and six citizen commissioners. Citizen members should ideally be individuals with interest in bicycling and walking.

8.2 PROGRAM RECOMMENDATIONS

Drawing from the bicycle and pedestrian safety initiatives outlined in Chapter 7, the following program recommendations focus on: education, encouragement, and outreach; enforcement; facility maintenance; and policy recommendations.

8.2.1 EDUCATION, ENCOURAGEMENT, & OUTREACH

Education, encouragement, and outreach programs are designed to foster a safe bicycling and walking environment and increase the prevalence and enjoyment of walking and bicycling. Successful encouragement and outreach efforts largely rest on a foundation of extensive and effective educational programs. Any education, encouragement or outreach efforts including those identified and recommended below should be coordinated between the formal Pedestrian and Bicycle Commission, bicycle advocacy groups, other government agencies and the private sector.

Education programs include identifying safe routes for bicyclists and pedestrians, teaching bicycling techniques, disseminating information regarding regulations that govern bicyclists and pedestrians, and instructing bicyclists and pedestrians how to handle potentially dangerous situations. **Encouragement** activities are valuable because they enable or promote biking and walking through incentives or provisions. **Outreach** activities, such as the Summer Safety Fair or the Tour De Titan are among the easiest and least cost intensive initiatives that advance bicyclist and pedestrian safety.

1. Hold, participate and support annual events that promote walking and bicycling including the provision of bicycle-training, such as a “Bike rodeos”, Safety Fairs, and helmet campaigns.
 - Bike Rodeos are used to educate parents and children about the safety aspects of riding a bicycle on streets and roads.
 - Summer safety fair would include bicycle safety materials and demonstrations, in conjunction with the City of Oshkosh Health Services Division and the Park and Forestry Division.
 - Helmet campaigns are typically held at area schools to highlight the importance of helmet use.
2. Promote public and private bicycle rides, events, programs, and bicycle advocacy group campaigns such as bike to work week, bike swap, club rides, fundraising events, and competitive sporting events.
3. Encourage and assist the development of employer incentive programs to encourage employees to try bicycling and walking to work.
4. Create a multimodal transportation guide highlighting how to access specific destinations with emphasis on biking and walking. Provide maps that help bicyclists and pedestrians navigate around the community as well as to locate areas of interest.
5. Act as a "clearinghouse" for bicycle and pedestrian related information by acquiring technical information from other agencies.
6. Commit to becoming a recognized Bicycle and Pedestrian Friendly Community with designation sponsored by the League of American Bicyclists and the Federal Highway Administration.
7. Educate motorists and bicyclists through marketing and advertising campaigns like a “Share the Road” Campaign and use promotional materials to promote bicycle and pedestrian safety such as a “Myths and Facts” pamphlet, etc.

8.2.2 ENFORCEMENT

Consistent enforcement of traffic laws is vitally important for creating a safe pedestrian and bicycling environment. Enforcement programs target unsafe driving behaviors, such as speeding and a police presence serves to reinforce safe bicycling and walking behaviors. The presence of more “eyes on the street” helps make everyone feel safer, and drivers and cyclists alike are on their best behavior.

1. Continue and enhance police bicycle patrols throughout the city, especially on designated bicycle routes.
2. Continue to educate and train law enforcement personnel in the enforcement of laws concerning bicyclists’ and pedestrian’s rights and responsibilities. Train crossing guards to report motorists who violate crosswalk regulations.
3. Continue efforts to improve safe driving in school zones such as the Speedwatch Program.
4. Install driver feedback signs on designated routes to display driver’s rate of speed in real time to encourage safety for bicyclists and pedestrians.
5. Work with residents, school districts, neighborhood groups and law enforcement agencies to identify crosswalks where motorists fail to yield to pedestrians.



Image of Driver Feedback Sign

8.2.3 FACILITY MAINTENANCE

Maintenance procedures are important for all types of transportation facilities. Periodic and consistent removal of snow, ice, and debris as well as resurfacing/patching of deteriorated pavement are important procedures for ensuring that users are provided with safe and reliable transportation facilities.

1. Maintain and expand the intensive street sweeping policy of the city to maintain pedestrian and bicycle safety.
2. Continue providing a road hazard identification program (i.e. telephone and internet) for bicyclists, pedestrians and motorists to proactively identify needed repairs to roadways, bikeways, and sidewalks.
3. Accommodate bicycle routing during construction, maintenance, and repair work on roadways and trails by providing warnings, detour signage, etc.
4. Regularly inspect and maintain pedestrian and bicycle signs and pavement markings.
5. Implement public/private cooperative agreements to offset maintenance costs such as an “Adopt-a-Bikeway” or “Adopt-a-Sidewalk” program.
6. Install pedestrian-scale lighting at select popular locations to facilitate safety on sidewalks and multi-use trails.
7. Continue to maintain ADA curb cuts and curb ramps to facilitate pedestrian mobility.
8. Investigate the adequacy of pedestrian signals with countdown timers at traffic controlled intersections.
9. Continue to upgrade pedestrian countdown timers at intersections that experience a lot of pedestrian traffic.



Pedestrian countdown timer

8.2.4 POLICY RECOMMENDATIONS

Encouragement and enforcement efforts coupled with the provision of well-maintained sidewalks, trails and bicycle facilities may not be sufficient to increase non-motorized transportation mode share. Municipal land use patterns and governing policies are equally important. Many of these policies need to be developed and implemented at the community level following extensive public participation.

1. Incorporate the establishment of the Pedestrian and Bicycle Commission into Chapter 2: Administration section of the Oshkosh Municipal Code
2. Review existing zoning and subdivision ordinances to provide adequate on-site pedestrian and bicycle access, parking, and circulation.
 - Establish a parking policy to encourage public bicycle parking facilities at public destinations such as community centers, parks, schools, mass transit stops and shopping centers.
 - Create a policy to require appropriate bicycle parking at all major employment and service centers.
3. Incorporate the bicycle and pedestrian circulation plan into future updates to local planning documents, such as the Comprehensive Plan, transportation plans and park and open space plans.
4. Make bicycle and pedestrian infrastructure development part of the annual City of Oshkosh Capital Improvement Programming.
5. Officially map and record all trails, needed greenway easements and necessary roadway easements within the Oshkosh City limits and extraterritorial areas to aid in future development efforts.
6. Investigate sources of funding for multi-use trails and on-street bicycle and pedestrian facilities. Seek grants at the federal, state, and local level to install uniform signage along “Bike Routes” throughout the city.
7. Place additional emphasis on existing property maintenance regulations that require such items as trimming vegetation and clearing snow and maintaining clear pathways on sidewalks.
8. Develop policies to ensure that all multi-use trails and bicycle parking facilities are maintained and clear of snow/ice during winter months so that all facilities are assessable and functional.
9. Increase use of multimodal transportation options by employing the use of items such as bicycle racks on buses, at park-and-rides, at public parking lots and at trail heads.
10. Encourage all new or reconstructed local roads and new or reconstructed bridges to meet standards of the Wisconsin Bicycle Facility Design Handbook.
11. Coordinate with Winnebago County and adjacent Townships to build, or rebuild county and town roads to minimum Wisconsin Bicycle Facility Design Handbook standards, especially when that roadway has been identified as a bike route.
12. Coordinate with the State of Wisconsin to build, or rebuild State roads to minimum Wisconsin Bicycle Facility Design Handbook standards, especially when that roadway has been identified as a bike route.
13. Encourage and assist employers to provide incentives for employees, and customers to bicycle and walk to work such as reducing the amount of automobile parking required if bicycle and pedestrian facilities are included or the Bicycle Commuter Tax Provision.

8.3 GENERAL BICYCLE AND PEDESTRIAN FACILITY RECOMMENDATIONS

While useful to encourage and sustain walking and bicycling as transportation, operational programs and policies are futile without adequate facilities. Too often, multimodal facility planning is synonymous with planning separate trails. However, separate bike lanes and bike/pedestrian trails are the most costly of all facility improvements. Because of their direct costs and the amount of public right-of-way needed to accommodate these systems, separated bike paths and trails seldom form a complete bicycle and pedestrian system. For the City of Oshkosh, it is most efficient and cost effective to make use of established transportation right-of-ways, especially within the older developed areas of the City. Trails and sidepaths are mainly utilized in newer areas of Oshkosh, at natural corridors and where physically and economically feasible.

8.3.1 SIGNAGE

Many streets in Oshkosh are currently suitable for bicycling due to adequately wide travel lanes, curb and gutter, and/or low traffic volumes. All bike routes within Oshkosh should be signed, whether they have bike lanes, sharrows, wide curb lanes, or are simply shared-use roadways. This section discusses route signage more in depth.



Wayfinding signage for bicyclists and pedestrians

Signing “Bike Routes” allows the communities who post these signs to better prioritize bicycle improvements on roadways and to direct pedestrians and bicyclists to the preferred routes. Signage also helps to direct visitors from outside the community to their desired destinations safely and efficiently. These routes also increase the likelihood that motorists will encounter bicyclists along the route which may heighten driver attentiveness and bicyclist confidence.

Signage can convey a variety of information. Chief among these are locational attributes such as where the nearest commercial center is located or distance to a local trail connection. Distinct signage can establish a community’s identity and replicate the efforts of beautification taken in other parts of the community. Signage should be consistent throughout the city and meet MUTCD standards.



Signs with travel time and distance information to inform cyclists how long a bicycle trip will take

1. Sign all recommended “Bike Routes” identified in this plan as they are developed, established or constructed.
2. Coordinate map development with wayfinding signage so route users can navigate effectively.
3. Display proper safety signage to educate motorists and bicyclists indicating “Bikes Use Full Lane” or “Share the Road” on all shared-use roads.

8.3.2 PROGRAM PRIORITIES

It is critical to maintain a comprehensive vision for creating a “walkable” and “bikable” Oshkosh, which includes bike lanes, shared roadways, multi-use trails, sidepaths and sidewalks. Not only does this plan recommend a myriad of specific facility improvements, it sets policy priorities and offers guidance and tools to help promote bicycling and pedestrian safety, efficiency and effectiveness.

The overriding principle for bicycle and pedestrian friendly streets is to create public right-of-ways that work effectively for and benefit all modes of transportation. A transportation environment and system that works for pedestrians will generally work better for bicyclists, disabled persons, automobile drivers, and for all other users, including transit and commercial vehicles. In the Wisconsin Pedestrian Policy Plan 2020, the Wisconsin Department of Transportation (WisDOT) articulated its commitment to accommodate pedestrians. WisDOT recognized its responsibilities for pedestrians and agreed to evaluate pedestrian needs on STH projects and minimize barriers in STH designs. Complete streets legislation also dictates that all roadways being reconstructed with federal dollars accommodate all modes of transportation including the bicyclist and pedestrian.

In order to form a well-connected non-motorized transportation system, the bicycle network was planned to utilize both on-street and off-street facilities. The routes and facilities recommended within this plan have been determined keeping established transportation right-of-ways and rider safety in mind.

Regardless of whether streets and roads are included in this plan’s designated bicycle network, bicyclists will use all available roads. Therefore, the recommended bicycle network has been developed primarily to formalize safe routes from “origins” to “destinations”, eliminate gaps within the current network, continue the expansion of the existing off-road facilities utilizing natural and other areas of opportunity, and improve access and connectivity for the bicyclist within the Oshkosh community.

In order to prioritize future pedestrian improvements and bicycle facilities, the following section sets forth recommended project priorities. It is conceded that best facility practices must be considered when any transportation network is developed, reconstructed or augmented (See Chapter 6: Best Facility Practices for additional design information). The policy and project priorities for pedestrians are more programmatic while those for bicycles tend to be physical in nature.

Recommended Program Priorities

1. Establish a formal interconnected bicycle network.
 - Adopt the recommended bicycle network as delineated in Appendix E.
 - Incorporate best facility practices within the design and construction of all street and trail segments.
 - Develop a policy and procedure to acquire easements and right-of-way necessary to further the development of the recommended bicycle network.
 - Include bicycle facility construction and maintenance within Oshkosh’s annual Capital Improvement Program.

2. Formalize safe routes from “origins” to “destinations”. Make it practical for people to walk or bicycle from their homes to the library, downtown, grocery store, pharmacy, community swimming pool, Neighborhood Park, government buildings, places of employment, hotels and other destinations.
 - Conduct “walkability” and “bikability” audits to help determine safest routes from origins to destinations.
 - Identify areas and intersections that are hazardous/unfriendly to pedestrians and bicyclists including those listed in Appendix D.
 - Audit long city blocks to determine feasibility of midblock crossings.
 - Audit existing government facilities, such as transit stops and school areas for ADA accessibility.
 - Publish maps of current walking and biking conditions with designated routes. Maps should be made available at locations such as convenience stores, motels/hotels, visitor information centers, and public libraries.
 - Establish a partnership (local agencies, Oshkosh Chambers of Commerce, Oshkosh Convention & Visitor Bureau, DNR, DOT and others) to develop education material promoting bike and pedestrian safety as well as detailing walks and bicycling routes for fitness, recreation and transportation.
 - Install appropriate scaled street lights along bicycle routes and popular walking routes and between popular destinations to encourage bicycle and pedestrian use and enhance security.
 - Focus facility improvements first in areas where residents walk or bike most often. Focus next on areas where visitors to the area walk or bike.
 - Facilitate the year-round use of bicycle and pedestrian facilities through maintenance and snow clearance procedures and policies.
3. Facilitate school route safety.
 - Make crosswalks more visible.
 - Add or replace existing school zone signs with bright green signs and arrows marking crosswalks, in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).
 - Support the Safe Routes to School program.
 - At signalized and non-signalized intersections determined to be dangerous, consider posting additional crossing guards.
 - Conduct education campaigns with motorists about school zones.
 - Complete gaps in sidewalk and bicycle route systems from neighborhoods to schools.
4. Adopt planning policies that promote all modes of transportation equally.
 - Encourage development patterns that coordinate housing proximity to employment, commercial and service centers.
 - Consider amending ordinances to require that buildings front the street whenever practical and place required auto parking behind or to the side of the building to promote pedestrian access.
 - Encourage or require pedestrian and bicycle facilities and amenities, such as benches, awnings, bicycle parking and refuse containers at all public and private employment and recreation centers.

- Advocate shared-use transportation standards, including “complete streets” guidelines, in the development review process.
- Affirm existing city policy to provide walks on both sides of all city streets and discourage or eliminate the ability to install trail systems in lieu of sidewalks.
- Work and coordinate with other jurisdictions to close gaps in the network.
- Require all developments, in their planning stages, to link their pedestrian and bicycle system to the existing or future network.

8.3.3 BICYCLE NETWORK AND FACILITY IMPROVEMENTS

Preferred bicycle and pedestrian routes are largely determined by the geography and planned growth patterns of the city. While the City of Oshkosh consists primarily of a grid street system, the grid is significantly altered by the area’s waterways, lakes and USH 41. As a result, the location and condition of bridges largely affect bicycle and pedestrian travel. Additionally, the nature of modern day development help to create disconnected pockets of residential and commercial development, which affect decisions to walk, bike, or drive. In some areas, past planning decisions preclude interconnectivity of the transportation system. The State of Wisconsin’s Highway system and Winnebago County’s freeway system also affect routes available to bicyclists and pedestrians.

Suitably designed bikeways can be identified formally as "Bike Routes." Bike routes are segments of a system of roads that are designated with appropriate directional and informational markers. These routes indicate a major route that most bicyclists will feel comfortable using. The routes are not intended to link all possible locations, and bicyclists are not required to use these routes. New bicyclists and bicyclists new to the Oshkosh area will find these routes useful for getting to know the City of Oshkosh and Winnebago County by bicycle.

This plan recommends a comprehensive and interconnected bicycle network by suggesting a facility type (bike lane, sharrow, multi-use trail) as outlined in Chapter 6 – Best Facility Practices at specific locations throughout the Oshkosh area. The purpose of the proposed bicycle network is to safely link identified “origins” and “destinations” for residents and visitors of the city as well as to provide a connection with current or planned facilities outside the city. It is important to state that the design approach behind the recommended bicycle facility types and routes contained within this planning document was guided and shaped with a critical design consideration in mind.

Design approach

The fundamental design consideration behind route determination that must be described is what type of bicyclist is most practically and best served by the city’s bicycle facility network. For our purposes, bicyclists can be fit into one of three generalized groups:

- Advanced Bicyclists – These users are “strong and fearless” cyclists. They log long hours on their bicycles and may be everyday bicycle commuters who often belong to a cycling club and take part in organized rides. Advanced riders tend to know best bicycling practices and operate on existing roadways. This group is best served by making every street bicycle friendly.
- Basic Bicyclists – This group of bicyclists are casual or young adult/teenage riders who tend to be interested in cycling but concerned with safety. Basic riders typically understand the basics of best bicycle riding practices but limit themselves to low speed, low traffic streets and prefer well-defined separation of bicycles from automobiles such as riding on sidewalks. This group is best served by identifying key travel corridors, determining what type of facility best serves their needs and where new or additional facilities are needed.
- Novice Bicyclists – Novice bicyclists tend to be pre-teen riders or people new to bicycling. These riders have very little understanding of what it takes to safely operate a bicycle in most circumstances and often require monitoring by parents with complete physical separation from vehicles or other transportation modes. This group of riders is best served through education programs and experience in order to move them to a basic bicyclist.

The Bicycle and Pedestrian Stakeholder/Steering Group made the early decision that all network route and facility choice decisions had to be made with the basic bicyclist in mind, not the novice or advanced rider. To this end, the design approach contained the principal of locating designated bicycle routes off unsafe, high traffic volume streets & truck routes, wherever possible. Furthermore, the group also focused on route placement as it related to existing traffic controlled intersections and the separation of bicycle travel from vehicular traffic such as the utilization of park properties, greenways and rail corridors.

Bicycle Facilities and Routes

The Implementation Table lists facility improvements types recommended and the extent of its location. This table coincides with the Route Maps 1-3 in Appendix E. The proposed recommended improvement is broken down into two geographic areas divided by the Fox River and designated as the Northside Oshkosh and Southside Oshkosh. It is further delineated into four sections that correlate with facility recommendations detailed in Chapter 6 – Best Facility Practices:

- Signed and striped roadways
- Signed and/or shareways
- Multi-use trail
- Area/intersection for study.

The segment of roadway or trail recommended for improvement is listed under “Name” and is identified by the columns labeled “From” and “To”(the beginning and end of each segment). A comment column is provided to further expound upon the recommended improvement. Short range (0-5 years) recommendation cost estimates are included in the following section and it was felt that estimates for longer term recommendations (6+ years) would not be useful as their timeframes were too far out to be realistically calculated.

Note - particular care should be taken when considering the project cost as these numbers are estimates and subject to unforeseeable market fluctuations and specific site condition analysis, which are beyond the scope of this plan. For example, a detailed study of storm water management, special design or engineering requirements, demolition issues, topography concerns, unique landscaping, and the location of utility lines was not undertaken for each recommendation and will undoubtedly alter the estimated project costs. The costs provided are for preliminary planning purposes only.

Implementation Tables – Bicycle Facility Improvements

NORTHSIDE OSHKOSH ROUTE LIST

NAME	FROM	TO	COMMENTS
Sign and Stripe Facility (Bike Lane)			
North Main - northbound	Bridge	East on Ceape, north on State to Washington	Circumnavigate narrow section of North Main Street
North Main - southbound	Washington to State, south to Otter, west to Commerce, south to Ceape, east to Main	Bridge	Circumnavigate narrow section of North Main Street
Market	Algoma	High	
N Main	Murdock	Snell	
Wisconsin	Bridge	Smith or Packer	Possible extension to Packer, once constructed
Vinland	W Linwood	Snell	
Future Packer	Wisconsin	Algoma	Roadway does not yet exist
Hamilton	Linwood	Future Packer	Possible extension to Packer, once constructed
LakeShore	Washington	Merritt/Park Trail	
Washington	N Main	Lakeshore	
Murdock	Bowen or future trail	Hazel/Menomonie & Trail	
Bowen	Bayshore	Nicolet	
Nicolet	Bowen	Future trail or CTY A/Harrison	Trails with rails proposed
Irving	Elmwood	Park Entrance/Hazel	
Harrison	N Main	Nicolet/future trail or CTY A	Trails with rails proposed
High	New York	Commerce	Coordinate with Campus Plan
Algoma	New York	N Main	Coordinate with Campus Plan
Elmwood	W Irving	New York	Coordinate with Campus Plan
Smith	Vinland	Harrison	
Fernau	N Main or future trail	WIOUWASH	Trails with rails proposed
Snell	Future trail or CTY A/Harrison	US 45/Stearns	Trails with rails proposed

NAME	FROM	TO	COMMENTS
Stearns	W Snell	CTY T/Ryf/Trail	
CTY T	Stearns	CTY Y	
Ryf	Stearns	Leach	Consider sign and/or shareway facility type as alternative
Sign and/or Shareway Facility			
School	Bowen	Rosalia	
E Melvin	Bowen	Hazel	
Nevada	N Main	Menominee/Hazel	
E Murdock	N Main	Bowen or future trail	Possible Road Diet
N Main	Algoma/Washington	Murdock	
New York	Wiouwash	Menominee/Hazel	Park Connection
Spruce/Vinland	New York	Linwood	
W Linwood	Vinland	Algoma	
CTY S	Leach	Brooks	
Leach	Ryf	CTY S	
Green Valley	W Snell	Jackson	
Walter	Fernau	Snell	
E Snell	CTY A/Trail	Sherman	
Sherman	Lakefront/picnic point	Snell	
Brooks	CTY S	Green Valley	Continue west
Indian Point	CTY A/Channel View	Jackson	
Sunny View	CTY A/Trail	Island View	
Island View	Sunnyview	Channel View	
Channel View	Sunnyview	Indian Point	
Bent	Trail	Wisconsin	
Bayshore	Broad/Trail	Washington (via Frankfort Ceape, Rosalia)	
Hazel/Menominee	Washington	Murdock/Park trail	
Court	Trail	Ceape	
Ceape	Court	Broad / trail	
Multi-Use Trail Facility			
Tracks off Broad	Washington	CTY Y	Trails with Rails proposed
WIOUWASH Connections	Algoma	WIOUWASH Trail	At future Packer, once constructed
WIOUWASH Connections	Algoma	WIOUWASH Trail	At Linwood
CTY Y	Wiouwash trail	Future trail or CTY A/Harrison	Trails with Rails proposed
West-East Railroad Connection	Broad	Trail	Trails with Rails proposed
41 Intersection Connection	Indian Point	CTY Y	Coordinate with WI-DOT
Menominee Park	Merritt	Murdock	
WIOUWASH/Riverfront	Broad	WIOUWASH trail	Off-trail connection at Arboretum. Continue north

NAME	FROM	TO	COMMENTS
CTY A	CTY Y/Sunnyview	Indian Point	Continue north
County Park Trail North-South Linkage/Community Park	Snell	CTY Y	
North-South Railroad Connection	Nicolet	CTY Y/Sunnyview	Trails with Rails Proposed
Broad Connection	Bayshore trail	Washington	In ROW parallel with tracks
Jackson	CTY Y	Brooks	
Area/Intersection for Study			
Jackson & Bent			Safety & alignment issues
Jackson & Nevada			Safety & alignment issues
Jackson & Smith			Safety & alignment issues
Bowen & Washington intersection			Safety issues
Bowen & Murdock intersection			
Broad St Trail	Bayshore	Washington	Design consideration
Trails with Rails (various locations)			Coordination needed with Railroad
Congress & Summit Intersection			Safety issues
Fernau & Algoma Intersection			Safety issues
Rail Crossings			Safety issues
Bridge Crossings			Long-term design
Murdock & Elmwood/Spruce Intersection			Safety & connection issues

SOUTHSIDE OSHKOSH ROUTE LIST

NAME	FROM	TO	COMMENTS
Sign and Stripe Facility (Bike Lane)			
S Main/Fond du Lac/USH 45	Bridge	Fisk	continue south...
Sawyer	Oshkosh	W 5th	
Eagle	Sawyer Creek Trail/Taft	W 5th	Trail proposed. Could stop at Taft
Mason	W 5th	W 6th	Connect to Franklin trail
Emmers/Westhaven	Omro	W 9th	
Oakwood	Omro	STH 91/W Waukau	
Clairville	W 9th	Fisk	
Idaho	W 5th	W 6th	
Knapp	Osborn	W 20th	
Knapp	Trail / Ripple	CTY N	continue south...
Minnesota	W 20th	W 23rd	
Oregon	W 23rd	Fisk	continue south...
Taft	N Campbell	N. Koeller	
Witzel	N Washburn	S Oakwood	continue west...
W 5th	Idaho	Lilac-W 7th - N Koeller	Multiple road connection
W 6th	Fox River Trail/S Main	Idaho	
W 9th	S Washburn	Clairville	continue west...
W 12th	S Main	Ohio/Park	connect at South Park trail
Osborn	Georgia/Park	S Koeller	connect at South Park trail
W 17th	S Main	Knapp	
W 20th	S Washburn	Clairville	continue west...
W 20th	Minnesota	W 20th Trail	Trail proposed
W 23rd/Doty	Boat Launch/S Main	Minnesota	
STH 91/W Waukau	S Washburn	Clairville	continue west...
W Waukau	Fond du Lac	Oregon	
Fisk/CTY N	USH 45	S Washburn	
Fisk	S Washburn	Clairville	continue west...
Sign and/or Shareway Facility			
Westowne	N Westhaven	N Washburn	
Omro	Oshkosh	USH 41	cross USH 41
Havenwood	N Oakwood	N Westhaven	
Security-Sunnybrook	N Westhaven	Sawyer Creek trail	Trail proposed
Dempsey	Trail/N Campbell	Witzel	Trail proposed
Southland	N Sawyer	Josslyn	connect to Titan Stadium Trail
Witzel	Ohio/Bridge	N Washburn	cross USH 41
Abby	S Washburn	S Westhaven	Easement thru private prop. Alternative to Trail
9th Ave	S Koeller	S Washburn	cross USH 41

NAME	FROM	TO	COMMENTS
Michigan	W 4th/Trail	W 20th/Trail	Trails prosed
Knapp	Osborn	Witzel	
W 10th	S Main	Michigan	
Punhoqua	Trail/Lake	Graham	Trail proposed
Graham	N Eagle	Punhoqua	
N Eagle	Graham	Sawyer Creek Trail	Trail proposed. Could stop at Buchanan
Mason-Huntington-Kensington	W 9th	Osborn	Multiple road connection. Connect to Franklin trail
Florida	Georgia	Knapp	
Georgia	Florida	W 17th	
W 20th	S Koeller	S Washburn	cross USH 41
State Rd 44/South Park	Poberezny	S Washburn	cross USH 41
Minnesota	W 6th	W South Park	
Pheasant Creek	W 9th	Hayward	
Hayward	Pheasant Creek	Wellington	
Wellington-Sawyer Creek-Ruschfield	Hayward	S Oakwood	Multiple road connection
Mockingbird extended	Wellington	Clairville	Alternative routes based on roadway construction
Newport	S Oakwood	Westhaven Circle	
Westhaven Circle			
Maricopa	W 20th	Westhaven Circle	
S Westhaven	Westhaven Circle	W 9th	
W Ripple	Fond du Lac	Red Oak	Trail proposed
W Ripple	Knapp	S Koeller/Poberezney	
W Ripple	S Washburn	Clairville	
Country Club	USH 45	Nekimi	
Multi-Use Trail Faciltiy			
USH 41-Over Butte Des Morts	WIOUWASH/Algoma	Omro	WIDOT Coordination
Washburn	Oshkosh	South...	Special Study Area
Koeller/Poberezny	Oshkosh	South...	Special Study Area
Sawyer Creek	Clairville	N Eagle	Complicated tail/easement acquisition
Oshkosh/State Rd 21	STH 41	N Westhaven	continue west...
N of Abby	S Westhaven	S Washburn	Easement/Alternative to Abby Signed Route
SW Industrial Park trails	W 20th	State Road 91	Multiple trails based on Industrial Park Plans
Casey Meadow/Trager School Trails	Sawyer Creek	W 20th	Multiple trails along waterways
Butte Des Morte - Fox River	HWY 41	Oshkosh	On golf course/park property
Titan Stadium Trail	Josslyn	N Campbell	

NAME	FROM	TO	COMMENTS
Fox River Trail	Dempsey	S Main	
Pioneer Drive Trail	S Main	W 17th	Coordinate with Pioneer redevelopment
South Park Park Trail	Georgia	Ohio	Park trail
Franklin School	Mason	Huntington	
W 20th Ave	Minnesota	S Koeller	Alternate to 3 block W 20th Bike Lane
Creek Trail	S Koeller/Poberezney	Knapp	Traverse Airport
Ripple Connector	Knapp	W Ripple	Traverse Airport
Tracks	W 20th	W 23rd	Rails with trails
W South Park Trail Connector	W 20th	S Koeller/Poberezny	
Waterway Trail	Fond du Lac	Oregon/County I	
Waterway Trail	STH 44/STH 91	S Washburn Trail	Trail proposed
Rail Line in SW Ind Park	S Washburn	west...	based on Industrial Park Plans
Fox River Valley Rail Trail	Fond du Lac	Country Club Rd	
Area/Intersection for Study			
Airport			Special Study Area
SW Industrial Park			Special Study Area
STH 41 - Frontage Roads			Special Study Area/Road Diet Option
Rail Crossings			Must be analysed for safety
Bridge Croassings			Long-term design
Fond du Lac/STH 45			Changes of lanes and speeds
Pedestrian Overpass 41	at Sawyer Creek		
Pedestrian Overpass 41	South of Osborn		
Pedestrian Overpass 41	at Ripple		

* The Highway 41 frontage roads (Koeller and Washburn Streets) are areas that present a particular challenge. As one of the primary commercial and recreational areas of Oshkosh, they have ranked extremely high as destination locations for pedestrians and bicyclists but were designed at a time that bicycle and pedestrian facilities were not given consideration and the property along their frontage was developed with little or no setback. As these frontage roads have been reconstructed, pedestrian sidewalks have been or will be included but facilities for bicycling is challenging with no clear or easy solution. The Bicycle and Pedestrian Steering/Stakeholder Group suggests that a possible creative mix of multi-use trails, on-street facilities and easements over private property may need to be utilized when singular facility recommendations are unable to be accommodated. Further specific study for best facility feasibility needs to be conducted to balance multimodal accessibility and travel mode conflicts. The Pedestrian and Bicycle Commission must focus efforts on this difficult set of roadways to develop a strategy to address the lack of facilities.

Timeframe

Recommendations within the plan are assigned a “Timeframe” based on the ability to develop in a timely manner and their importance in meeting plan goals and objectives. In particular, the recommendations were prioritized to reduce gaps in the existing bicycle and pedestrian transportation network; connect community destinations; increase the quantity, pleasure, and safety of bicyclists within the city; and enhance bicycle and pedestrian travel as an economic asset to the community. Priority for facilities was done with an assumption that they could be completed within the allotted timeframe, create a connected network on the interim and that “funds were available” as predictions on funding levels could not be accurately estimated. Priorities are shown on the associated table (below) and on the map in Appendix F. They fall under two headings:

- Priority Facility Improvements 0-5 years
- Future Facility Improvements 6 or more years

Priority Facility recommendations are viewed as the most vital for fulfilling the short-term goals of the Bicycle and Pedestrian Stakeholder/Steering Group, especially promoting increased connectivity to key destinations. Recommendations within the first five-year timeframe also represent existing planned projects that will soon be implemented. Future Facility Improvement recommendations are longer-term desires requiring a more sustained effort to implement.

As many of the recommendations within the plan require coordination with roadway reconstruction and potential property acquisition, especially in the case of bike lane and multi-use trail development, an interim solution to connect system facilities must be the temporary use of signed and/or shared facilities, especially if sign and striped facilities (bike Lanes) are included as part of the long-range/Future Facility Improvement schedule.

The road diet concept discussed in the best facility practices section and in Appendix G has been used in many communities throughout the United States and Wisconsin including area communities such as Appleton and Green Bay and may be an appropriate and feasible technique to gain right-of-way area for bike facility installation and pedestrian safety. However, the Bicycle and Pedestrian Stakeholder/Steering Group has not formerly recommended road diets for any specific streets as they believe they need further study on an individual street-by-street basis during restriping or reconstruction.

Additionally, at the time a facility is being created, the City must consider all facilities such as automobile parking, bike lanes/sharrows, terrace, etc. and determine which are most important. The goal is to create a balance of needs in the community and not a “winner takes all” scenario but a “win-win” between potentially competing interests.

SIGN & SHAREWAY - HIGH PRIORITY STREETS

STREET	FROM	TO	LENGTH (FEET)	LENGTH (MILES)	SIGN COST	STRIPE COST	SYMBOL COST
KNAPP ST	WITZEL AVE	OSBORN AVE	4046	0.77	\$ 600	N/A	\$ 4,828
MICHIGAN ST	W 4TH AVE	W 20TH AVE	6696	1.27	\$ 1,000	N/A	\$ 7,990
BAY SHORE DR	BROAD ST	FRANKFORT ST	2764	0.52	\$ 400	N/A	\$ 3,298
ROSALIA ST	WASHINTON AVE	CEAPE AVE	2055	0.39	\$ 400	N/A	\$ 2,452
CEAPE AVE	FRANKFORT ST	ROSALIA ST	406	0.08	\$ 200	N/A	\$ 484
ARBORETUM DR	RIVER MILL RD	CONGRESS AVE	957	0.18	\$ 200	N/A	\$ 1,142
NEW YORK AVE	FOX RIVER	MENOMINEE DR	10366	1.96	\$ 1,600	N/A	\$ 12,369
N MAIN ST	MURDOCK AVE	WASHINTON AVE	7916	1.50	\$ 1,200	N/A	\$ 9,445
HAZEL ST	BALDWIN AVE	WASHINGTON AVE	4830	0.91	\$ 800	N/A	\$ 5,763
MENOMINEE DR	FAIRVIEW ST	HAZEL ST	549	0.10	\$ 200	N/A	\$ 655
FRANKFORT ST	CEAPE AVE	BAY SHORE DR	1158	0.22	\$ 200	N/A	\$ 1,382
W 9TH AVE	S WASHBURN ST	S KOELLER ST	1372	0.26	\$ 200	N/A	\$ 1,637
W 10TH AVE	MICHIGAN ST	S MAIN ST	3132	0.59	\$ 600	N/A	\$ 3,737
CEAPE AVE	BROAD ST	COURT ST	553	0.10	\$ 200	N/A	\$ 660
COURT ST	CEAPE AVE	RIVERWALK	577	0.11	\$ 200	N/A	\$ 688
					\$ 8,000	\$ -	\$ 56,529
						Total	\$ 64,529

SIGN & STRIPE - HIGH PRIORITY STREETS

STREET	FROM	TO	LENGTH (FEET)	LENGTH (MILES)	SIGN COST	STRIPE COST	SYMBOL COST
N CAMPBELL RD	DEMPSEY TR	TAFT AVE	2391	0.45	\$ 400	\$ 2,083	\$ 216
CEAPE AVE	COMMERCE ST	N MAIN ST	179	0.03	\$ 200	\$ 156	\$ 216
CEAPE AVE	N MAIN ST	STATE ST	95	0.02	\$ 200	\$ 83	\$ 216
WASHINGTON AVE	N MAIN ST	STATE ST	313	0.06	\$ 200	\$ 273	\$ 216
WASHINGTON AVE	HAZEL ST	ROSALIA ST	540	0.10	\$ 200	\$ 470	\$ 216
IDAHO ST	W 5TH AVE	W 6TH AVE	318	0.06	\$ 200	\$ 277	\$ 216
W 6TH AVE	IDAHO ST	S MAIN ST	5374	1.02	\$ 800	\$ 4,682	\$ 216
SAWYER ST	W 5TH AVE	RUSH AVE	3976	0.75	\$ 600	\$ 3,464	\$ 216
ALGOMA BLVD	W NEW YORK AVE	N MAIN ST	7184	1.36	\$ 1,000	\$ 6,259	\$ 432
ELMWOOD AVE	W IRVING AVE	W NEW YORK AVE	3004	0.57	\$ 400	\$ 2,617	\$ 216
IRVING AVE	ELMWOOD AVE	MENOMINEE DR	7500	1.42	\$ 1,200	\$ 6,534	\$ 432
HIGH AVE	CONGRESS AVE	COMMERCE ST	7679	1.45	\$ 1,200	\$ 6,690	\$ 432
STATE ST	CEAPE AVE	WASHINGTON AVE	1052	0.20	\$ 200	\$ 917	\$ 216
W 12TH AVE	OHIO ST	S MAIN ST	3773	0.71	\$ 600	\$ 3,287	\$ 216
OSBORN AVE	S KOELLER ST	GEORGIA ST	6975	1.32	\$ 1,000	\$ 6,077	\$ 432
W 7TH AVE	S KOELLER ST	LILAC ST	455	0.09	\$ 200	\$ 396	\$ 216
LILAC ST	W 5TH AVE	W 7TH AVE	703	0.13	\$ 200	\$ 612	\$ 216
W 5TH AVE	LILAC ST	IDAHO ST	5295	1.00	\$ 800	\$ 4,613	\$ 216
TAFT AVE	N KOELLER ST	N SAWYER ST	3710	0.70	\$ 600	\$ 3,232	\$ 216
TAFT AVE	N SAWYER ST	N CAMPBELL RD	1750	0.33	\$ 400	\$ 1,525	\$ 216

8.4 COST OF DEVELOPING AND MAINTAINING FACILITIES

8.4.1 FACILITY DEVELOPMENT COSTS

Cost estimates for Priority Facility Improvements projects have been listed in the Implementation Table in the preceding section. Development cost estimates for on-street facility types were determined by using actual costs experienced by Sheboygan County, WI through one of four national Non-motorized Transportation Pilot Projects and are current in 2011. Trail cost estimates are based the consultants experience in developing trails including the Badger State Trail (linking Madison to Fitchberg) that was completed in 2010.

Cost assumptions are shown below but it is important to say that cost analysis for each facility type for each specific recommended facility must be conducted on a case-by-case basis as the general estimates used will not reflect actual costs.

▪ Signs (with post):	\$200	each
▪ Bike Lane Epoxy (1 side):	\$2,300	per mile
▪ Bike Lane Epoxy (2 sides):	\$4,600	per mile
▪ Bike Lane Symbol (1 side):	\$108	per mile
▪ Bike Lane Symbol (2 sides):	\$216	per mile
▪ Sharrow Symbol (1 side):	\$3,100	per mile
▪ Sharrow Symbol (2 sides):	\$6,300	per mile
▪ Paved Shoulder (6' concrete):	\$123,500	per mile
▪ Paved Shoulder (6' asphalt):	\$45,250	per mile
▪ Paved Sidepath/Multi-Use Trail (10' concrete):	\$218,300	per mile
▪ Paved Sidepath/Multi-Use Trail (10' asphalt):	\$107,200	per mile
▪ Sidewalk (6' concrete):	\$130,944	per mile

8.4.2 COST OF MAINTAINING FACILITIES

Per-mile maintenance costs can differ according to environmental conditions, like snow removal and economic factors. The following estimated costs were derived from various state and municipal sources and are given on per mile/per year basis with the assumption that restriping will be necessary every three years. Trail maintenance costs vary widely and those listed are from the American Trails Partnership based on surveys of their membership. These per-mile costs are generalized and do not include the maturation costs of reconstruction or the costs of snow removal activities.

▪ Bike Lane Epoxy (1 side):	\$800	per mile
▪ Bike Lane Epoxy (2 sides):	\$1,600	per mile
▪ Bike Lane Symbol (1 side):	\$108	per mile
▪ Bike Lane Symbol (2 sides):	\$216	per mile
▪ Paved Sidepath/Trail:	\$2,800	per mile
▪ Unpaved Sidepath/Trail:	\$2,300	per mile

8.4.3 FACILITY MAINTENANCE RESPONSIBILITY

- Public Walks – Adjacent landowner responsible for maintenance.
- On-Street Bicycle Facilities (bike lanes, sharrows, wide shoulders, etc.) – City responsible for maintenance.
- Multi-Use Trail Facility (multi-use trail & sidepath) - City responsible for maintenance on the majority but private-public partnership be considered on segments on a case-by-case basis.

8.5 FUNDING OPPORTUNITIES

The City of Oshkosh should appropriate annual funds for bicycle and pedestrian improvements just as it does for other roadway projects. In addition, bicycle and pedestrian projects may be eligible for state or federal funding. Bicycle and pedestrian improvements that benefit public health and safety should be funded through the general fund and assessments, supplemented or offset by available state and federal grants.

As part of the state and federal initiatives to enhance bicycling and walking as transportation modes, several grants and funding sources are available to communities 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 multi-use trails) are substantial--particularly if the facility is intended to provide both utilitarian and recreational benefits.

Federal transportation enhancement programs, most recently reauthorized as SAFETEA-LU, have helped fund many bicycle and pedestrian transportation activities throughout the United States. Similarly, Wisconsin has approved the funding of many community projects. Local officials should work with the WisDOT Northeast Region to ensure that pedestrians and bicycles are accommodated on state trunk and connecting highway projects, both urban and rural.

Off-street multi-use trails may have overlapping recreational and transportation value. For these bicycle improvements, the Wisconsin Department of Natural Resources' Stewardship Program may be an appropriate source of funding. In addition, impact fees provide a potential source of funding for multi-use trails both within and connecting to residential subdivisions. Current state ordinances permit the use of impact fees by municipalities for transportation improvements as well as for parks and recreational facilities. Multi-use paths serve both a transportation and recreational function and therefore impact fees are an appropriate source of funding.

Alternate funding strategies through private interests should also be considered. Local private interests will benefit from an improved system that offers transportation choices and attracts tourists to the area. Private agencies that share the city's vision for an integrated bicycle and pedestrian system may be willing to invest in development or maintenance of facilities. These private partnerships should be explored to provide better facilities.

8.5.1 SPECIFIC FUNDING OPPORTUNITIES

The following is a list of examples of programs that help to provide a base of funding sources for bicycle and pedestrian improvements.

Local Transportation Enhancements (TE)

Program Description: Transportation enhancements (TE) are transportation-related activities that are designed to strengthen the cultural, aesthetic, and environmental aspects of transportation systems. The transportation enhancements program provides for the implementation of a variety of non-traditional projects, with examples ranging from the restoration of historic transportation facilities, to bike and pedestrian facilities, to landscaping and scenic beautification, and to the mitigation of water pollution from highway runoff. Most of the projects awarded in Wisconsin have been for bicycle and pedestrian facilities. Examples of bicycle and pedestrian projects include: multi-use trails, paved shoulders, bike lanes, bicycle route signage, bicycle parking, overpasses/underpasses/bridges, sidewalks, and pedestrian crossings. Local municipalities contribute 20% of the project costs.

Transportation enhancement activities must relate to surface transportation. Federal regulations restrict the use of funds on trails that allow motorized users, except snowmobiles.

Bicycle and Pedestrian Facilities Program (BFPF)

Program description: Bicycle and pedestrian facility projects costing \$200,000 or more and planning projects costing \$50,000 or more are eligible for BFPF funds. To be eligible, the project must be usable when it is completed and not staged so that additional money is needed to make it a useful project. A project sponsor must pay for a project and then seek reimbursement for the project from the state. Federal funds will provide up to 80% of project costs, while the sponsor must provide at least 20%. Because of the similarities between the BFPF and the Transportation Enhancements (TE) program objectives and eligibility criteria, applications and funding for both programs are typically undertaken together.

Surface Transportation Program (STP-U) Urban

Project Description: This program allocates federal funds to complete a variety of improvements to federal-aid-eligible roads and streets in urban areas. Projects must meet federal and state requirements. Communities are eligible for funding on roads functionally classified (collector or arterial). The WisDOT requires that pedestrian and on-street bicycle accommodations be part of all STP projects and STP-Rural projects within or in the vicinity of population centers, unless extraordinary circumstances can be demonstrated to WisDOT for not providing these accommodations.

Surface Transportation Program (STP-R) Rural

Project Description: This program allocates federal funds to complete a variety of improvements to federal-aid-eligible roads and streets outside of urban areas, primarily county trunk highways. The program funds roads functionally classified as principal arterial, minor arterial, and major collector. The WisDOT requires that pedestrian and on-street bicycle accommodations be part of STP-Rural

projects within or in the vicinity of population centers, unless extraordinary circumstances can be demonstrated to WisDOT for not providing these accommodations.

Robert Wood Johnson Foundation (RWJF)

Project Description: One of the largest foundations in the country, the Robert Wood Johnson Foundation offers grants that address public health issues, such as childhood obesity and asthma. Bicycle and pedestrian facilities qualify for RWJF funding.

Wisconsin Department of Natural Resources Stewardship Program

Program Description: Stewardship funds are intended to support the development of “nature-based” recreational facilities. Stewardship grants have been used to implement hiking and biking trails and otherwise facilitate active recreation. Local municipalities or the grant applicant is responsible for 50% of project costs.

Wisconsin DNR Recreational Trails Grant

Program Description: Recreational Trails grants provide funding to build off-street trails for both motorized and non-motorized transportation. Local municipalities or the grant applicant is responsible for 50% of project costs.

Safe Routes to School (SRTS)

Program Description: Safe Routes to School (SRTS) programs encourage children ages K-8 to walk and bike to school by creating safer walking and biking routes. These programs are funded through the revised federal transportation act - SAFETEA-LU - signed into law on August 10, 2005. This legislation provides funding to state departments of transportation to create and administer SRTS Programs. SRTS Programs improve walking and biking travel options, promote healthier lifestyles in children at an early age and decrease auto-related emissions near schools. SRTS funds can be used for both infrastructure projects and non-infrastructure activities within 2 miles of elementary and middle schools. Safe Routes to School grants fully fund accepted projects (100% funding).

8.6 PLAN AMENDMENT PROCESS

The Bicycle and Pedestrian Plan is a staged, multi-year, multimodal program of transportation projects developed to create and enhance the bicycling and walking network in Oshkosh. The Bicycle and Pedestrian Plan should have an annual review as well as be reviewed in its entirety with a full update every five years.

Amendments to documents such as the Bicycle and Pedestrian Plan are occasionally necessary after they have been adopted but prior to its annual or five-year update. Amendments are most likely appropriate throughout the lifecycle of the plan, particularly if new issues emerge or trends change, due to new requirements and needs, implementation of improvements, and the completion of more specific studies or plans.

The amendment process is as follows:

- A recommendation or proposed amendment to the Bicycle and Pedestrian Plan will be brought before the Bicycle and Pedestrian Advisory Commission for their review and comment.
- The Bicycle and Pedestrian Advisory Commission will make a recommendation on the proposed amendment to the City Council for its consideration and approval/denial.
- The Bicycle and Pedestrian Advisory Commission review will entail a Class I notice/announcement of the proposed amendment through the local newspaper.
- The public comment period on the proposed amendment will last a minimum of thirty (30) calendar days.
- A public review will be held before the City Council takes its final action on the proposed amendment.
- Upon approval by the City Council, the amendment will be included in the current version of the Bicycle/Pedestrian Plan.

Appendix A:

Survey Results

Oshkosh Pedestrian and Bicycle Circulation Plan Update

1. Do you currently live within the city limits of Oshkosh?		
	Response Percent	Response Count
Yes	73.2%	345
No - if no, please tell us where you live in the comment box.	27.0%	127
	Address	232
answered question		471
skipped question		5

2. What is your current employment status?		
	Response Percent	Response Count
Retired	4.5%	21
Employed, work outside of home	91.8%	424
Employed, work at home	0.9%	4
Not currently employed	2.8%	13
	Other (please specify)	18
answered question		462
skipped question		14

3. Do you currently work in Oshkosh?

	Response Percent	Response Count
Yes	81.4%	380
No	15.2%	71
Not Sure	0.4%	2
Does not apply	3.0%	14
answered question		467
skipped question		9

4. How do you currently travel to work? (select all that apply)

	Response Percent	Response Count
Drive Alone	83.4%	386
Carpool	6.7%	31
Vanpool	0.2%	1
Bicycle	25.7%	119
Walk	15.1%	70
Transit	5.0%	23
Does not apply	5.2%	24
Other (please specify)		14
answered question		463
skipped question		13

5. How far do you currently travel to work (each way)?

	Response Percent	Response Count
Under 1 mile	11.6%	54
1-4 miles	41.4%	193
5-9 miles	21.2%	99
Between 10 and 20 miles	12.0%	56
More than 20 miles	8.2%	38
Does not apply	5.6%	26
answered question		466
skipped question		10

6. How long does it take you to travel to work (each way)?

	Response Percent	Response Count
Under 5 minutes	12.3%	55
5-10 minutes	36.8%	164
11-20 minutes	32.5%	145
21-30 minutes	12.3%	55
Over 30 minutes	6.1%	27
answered question		446
skipped question		30

7. Do you currently walk, hike, or bicycle for transportation or recreation in Oshkosh?

	Response Percent	Response Count
Yes	89.8%	407
No	9.7%	44
Not sure	0.4%	2
answered question		453
skipped question		23

8. What sorts of places would/do you like to travel to by walking or bicycling? (select all that apply)

	Response Percent	Response Count
Library	55.8%	236
School	41.8%	177
Parks	90.1%	381
Shopping Centers	52.2%	221
Workplace	58.6%	248
Other (please specify)		84
answered question		423
skipped question		53

9. How often do you walk for recreation?

	Response Percent	Response Count
Never	10.0%	45
1-3 times per week	61.1%	276
4-6 times per week	19.9%	90
7 or more times per week	7.3%	33
always	1.8%	8
answered question		452
skipped question		24

10. How often do you walk for transportation?

	Response Percent	Response Count
Never	55.7%	250
1-3 times per week	34.5%	155
4-6 times per week	5.3%	24
7 or more times per week	3.6%	16
always	0.9%	4
answered question		449
skipped question		27

11. How often do you use your bicycle for recreation?		
	Response Percent	Response Count
Never	25.5%	113
1-3 times per week	53.4%	237
4-6 times per week	16.2%	72
7 or more times per week	3.4%	15
always	1.6%	7
	answered question	444
	skipped question	32

12. How often do you use your bicycle for transportation?		
	Response Percent	Response Count
never	52.2%	234
1-3 times per week	34.6%	155
3-6 times per week	9.6%	43
7 or more times per week	2.7%	12
always	0.9%	4
	answered question	448
	skipped question	28

13. Do you currently walk or bicycle to any of the destinations you identified in Question #2 above?

	Response Percent	Response Count
Yes	70.1%	310
No	27.1%	120
Does not apply	2.7%	12
Please identify any barriers to walking or biking to these places.		166
answered question		442
skipped question		34

14. Is there a safe way to walk or bicycle to the location you identified in Question #2? Specifically, do you feel comfortable traveling this route on foot or by bike?

	Response Percent	Response Count
Yes	40.1%	178
No	53.8%	239
Does not apply	6.1%	27
If yes, please briefly describe your route and destination		139
answered question		444
skipped question		32

15. In general, how far are you willing to walk or bicycle to reach your destination?

	Response Percent	Response Count
Under 1 mile	9.6%	43
2-4 miles	43.8%	197
5-9 miles	28.2%	127
Between 10-20 miles	11.8%	53
More than 20 miles	3.8%	17
Does not apply	2.9%	13
	Comments	41
<i>answered question</i>		450
<i>skipped question</i>		26

16. What issues affect your decision to walk or bicycle to your destination? (select all that apply)

	Response Percent	Response Count
Distance	54.1%	223
Convenience of driving	35.2%	145
Time	57.3%	236
Speed of traffic along route	62.1%	256
Amount of traffic along route	70.9%	292
Finding others to walk/bike with	9.5%	39
Sidewalks or pathways	59.7%	246
Safety of intersections and crossings	70.6%	291
Violence or crime	13.3%	55
Weather or climate	68.0%	280
Motorists not following traffic laws	42.5%	175
Bicycle unfriendly roadways	71.4%	294
Lack of sidewalks	32.3%	133
Lack of trails	48.5%	200
Lack of bicycle parking at destination	28.6%	118
Other (please specify)		35
	answered question	412
	skipped question	64

17. Would your decision to walk or bicycle to your destination change if any of the issues in Question #1 were changed or improved?

	Yes	No	Not Sure	Response Count
Distance	47.3% (156)	35.5% (117)	17.3% (57)	330
Convenience of driving	35.5% (109)	43.0% (132)	21.5% (66)	307
Time	53.5% (170)	30.8% (98)	15.7% (50)	318
Speed of traffic along route	76.7% (263)	15.2% (52)	8.2% (28)	343
Amount of traffic along route	82.5% (297)	10.8% (39)	6.7% (24)	360
Finding others to walk/bike with	25.3% (66)	55.6% (145)	19.2% (50)	261
Sidewalks or pathways	84.9% (292)	8.4% (29)	6.7% (23)	344
Safety of intersections and crossings	86.9% (306)	6.5% (23)	6.5% (23)	352
Violence or crime	38.8% (102)	36.9% (97)	24.3% (64)	263
Weather or climate	60.7% (184)	29.0% (88)	10.2% (31)	303
Motorists not following traffic laws	78.6% (243)	12.3% (38)	9.1% (28)	309
Bicycle unfriendly roadways	89.8% (316)	5.4% (19)	4.8% (17)	352
Lack of trails	83.6% (276)	8.2% (27)	8.2% (27)	330
Lack of sidewalks	71.0% (215)	19.5% (59)	9.6% (29)	303
Lack of bicycle parking at destination	57.9% (169)	26.4% (77)	15.8% (46)	292
			answered question	408
			skipped question	68

18. Do you feel encouraged to walk or bicycle?

	Response Percent	Response Count
Yes	28.4%	116
No	56.2%	230
Not Sure	15.4%	63
<i>answered question</i>		409
<i>skipped question</i>		67

19. If there were programs to help educate and encourage safe walking and bicycling behaviors do you think you would walk or bike more often?

	Response Percent	Response Count
Yes	42.5%	174
No	25.4%	104
Not Sure	32.0%	131
<i>answered question</i>		409
<i>skipped question</i>		67

20. Please select which of the following activities would have the most impact for encouraging walking or bicycling for you or your children as part of regular recreation or transportation trips.

	Most Impact	Some Impact	Neutral	Little Impact	Least Impact	No Opinion	Response Count
Forums describing health aspects of walking or biking	5.2% (19)	23.9% (87)	24.5% (89)	25.8% (94)	15.9% (58)	4.7% (17)	364
Maps that identify safe places to walk or bike	43.5% (165)	43.0% (163)	5.0% (19)	5.0% (19)	1.3% (5)	2.1% (8)	379
Enforcement of traffic regulations (speeding, stop signs, etc.)	45.4% (173)	36.5% (139)	7.6% (29)	6.0% (23)	2.4% (9)	2.1% (8)	381
Obeying the rules of the road	43.1% (162)	35.1% (132)	12.5% (47)	5.1% (19)	1.6% (6)	2.7% (10)	376
Bike to Work Week activities	19.6% (71)	35.5% (129)	17.9% (65)	14.6% (53)	8.3% (30)	4.1% (15)	363
Walk to School Day activities	15.4% (55)	34.1% (122)	19.3% (69)	12.0% (43)	11.2% (40)	8.1% (29)	358
Bicycle Rodeos	8.0% (28)	16.2% (57)	27.6% (97)	14.5% (51)	16.0% (56)	17.7% (62)	351
Driver education about how to interact with bicyclists and pedestrians	35.4% (132)	35.4% (132)	15.5% (58)	6.4% (24)	4.0% (15)	3.2% (12)	373
Regular plowing of sidewalks and trails (in winter)	51.1% (193)	27.0% (102)	10.1% (38)	5.3% (20)	4.5% (17)	2.1% (8)	378
Route signage on County and/or Community roadways	37.5% (137)	37.8% (138)	13.7% (50)	5.2% (19)	2.2% (8)	3.6% (13)	365
Dedicated space for cycling or walking	80.8% (315)	12.8% (50)	2.8% (11)	1.5% (6)	1.0% (4)	1.0% (4)	390
answered question							397
skipped question							79

21. Please select which of the following activities would increase the amount of time you currently bike or walk.

	Most Impact	Some Impact	Neutral	Little Impact	Least Impact	No Opinion	Response Count
Forums describing health aspects of walking or biking	3.4% (12)	21.5% (75)	27.2% (95)	22.9% (80)	18.9% (66)	6.0% (21)	349
Maps that identify safe places to walk or bike	39.7% (145)	39.2% (143)	8.5% (31)	6.8% (25)	3.0% (11)	2.7% (10)	365
Enforcement of traffic regulations (speeding, stop signs, etc.)	41.7% (150)	32.5% (117)	12.2% (44)	6.4% (23)	4.2% (15)	3.1% (11)	360
Obeying the rules of the road	39.2% (139)	31.5% (112)	15.8% (56)	6.8% (24)	3.9% (14)	2.8% (10)	355
Bike to Work Week activities	13.3% (46)	29.1% (101)	25.9% (90)	12.1% (42)	14.7% (51)	4.9% (17)	347
Walk to School Day activities	11.4% (39)	21.0% (72)	28.0% (96)	13.4% (46)	17.5% (60)	8.7% (30)	343
Bicycle Rodeos	5.3% (18)	13.2% (45)	28.9% (99)	17.0% (58)	19.9% (68)	15.8% (54)	342
Driver education about how to interact with bicyclists and pedestrians	33.8% (120)	29.3% (104)	18.0% (64)	9.0% (32)	5.9% (21)	3.9% (14)	355
Regular plowing of sidewalks and trails (in winter)	48.4% (177)	27.0% (99)	10.9% (40)	5.7% (21)	5.2% (19)	2.7% (10)	366
Route signage on County and/or Community roadways	37.7% (133)	31.4% (111)	18.1% (64)	5.9% (21)	3.4% (12)	3.4% (12)	353
Dedicated space for cycling or walking	76.5% (289)	13.2% (50)	4.0% (15)	3.2% (12)	1.6% (6)	1.6% (6)	378
answered question							385
skipped question							91

22. Statewide, Wisconsin spends about 1.4% of transportation dollars on bicycle infrastructure while 9% of all trips are made by bicycle. Please rate your opinion on the following statements.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Opinion	Response Count
Oshkosh should allocate additional monies for the development of bicycle facilities	56.3% (222)	28.4% (112)	9.6% (38)	1.3% (5)	2.0% (8)	2.3% (9)	394
Oshkosh should focus spending on developing off-road trails	34.2% (132)	32.1% (124)	23.1% (89)	7.0% (27)	1.8% (7)	1.8% (7)	386
Oshkosh should focus spending on developing safer on-street bicycle facilities (paved shoulders, etc.)	65.5% (258)	27.7% (109)	2.5% (10)	1.8% (7)	1.3% (5)	1.3% (5)	394
Wisconsin should allocate a greater share of the transportation budget on bicycle and pedestrian projects	52.6% (206)	31.1% (122)	10.5% (41)	2.3% (9)	1.8% (7)	1.8% (7)	392
Developing additional walking and bicycling facilities would increase the number of walkers and bicyclists	56.8% (222)	31.2% (122)	8.2% (32)	0.8% (3)	1.3% (5)	1.8% (7)	391
Developing additional walking and bicycling facilities would reduce the number of automobile drivers	28.5% (111)	30.3% (118)	26.0% (101)	9.8% (38)	2.6% (10)	2.8% (11)	389
Increasing the number of walkers and bicyclists would have positive environmental impacts	64.4% (253)	29.5% (116)	2.8% (11)	0.8% (3)	1.3% (5)	1.3% (5)	393
Increasing the number of walkers and bicyclists would have positive health impacts	73.9% (291)	21.6% (85)	2.0% (8)	0.5% (2)	0.8% (3)	1.3% (5)	394
answered question							398
skipped question							78

23. Comments

NOTE: Please see the following pages for comments	Response Count
	66
<i>answered question</i>	66
<i>skipped question</i>	410

Oshkosh Pedestrian and Bicycle Circulation Plan Update

Response Text		
1	I don't live in Oshkosh. I bring my bike when I go to college in Oshkosh and then ride my bike to work when I am done with school. I think more specific bike facilities is a great idea.	Oct 20, 2009 2:48 AM
2	I have a hard time getting around town, since I don't own a car. Everything is so spread out that I have to plan out a specific time and day to go somewhere. The only thing within reasonable distance of my apartment is Piggly Wiggly. The public transit system doesn't help much. I can get to school and home fine, however I have no ability to hold a steady part-time job unless I worked only on Saturdays. It's not convenient and only runs until 6:15. On a different note, the sidewalks are tilted, and the corners are near impossible to maneuver on a bicycle.	Oct 20, 2009 3:28 PM
3	If everything in Oshkosh was closer, I would definitely walk or bike, but everything is so far from each other.	Oct 20, 2009 3:34 PM
4	I returned last week from a trip to Wash state & B.C Canada. Both have bike lanes painted on the roadway w/ very stiff penalties for drivers who violate those spaces. They also have signage and in many cases actual traffic signals just for bicycles. Woe to the driver that violates those controls.	Oct 21, 2009 9:40 PM
5	I have been an avid bicyclist for years. I often bike to destinations less than 2 miles at least 8-9 months a year. (Ice is very dangerous!) If people in Europe & Asia can do it, so can we! I love being outdoors, using less gas & wear/tear on my car (a good way to decrease the U.S. addiction to foreign oil), less pollution, being less dependent on a car, and it's great exercise. Our roadways would be much safer if people would bike more and drive smaller cars.	Oct 24, 2009 11:46 AM
6	Oshkosh needs to have bike/walking trails like there are in the Town of Menasha, Fond du Lac and Appleton to name a few. Oshkosh is really behind the entire Valley in this area.	Oct 25, 2009 1:36 PM
7	I am very dissatisfied that W. 9th Ave. past Oakwood Rd. is not included in the future pedestrian plans.	Oct 25, 2009 2:12 PM
8	I ride about 2000 miles a year. I run about 1500. I know what roads to stay away from. Like to have a safe road to cross highway 41.	Oct 25, 2009 3:02 PM
9	I have put on approximately 500 miles on my bike this summer. My health is better and I continue to try to stay in shape while being retired. However, I feel unsafe at times due to the speed and closeness of vehicle traffic. The roadways present an almost daily challenge due to their disrepair. Riding on sidewalks is not the answer due to pedestrian traffic and low-hanging branches on trees and shrubs. Car traffic must use the center lane in most instances, yet our traffic lanes tend to lend themselves to right-lane travel. I can remember when the right lanes were used for parked cars only. It's a sign of the times when cars speed through city streets. Our police department and their issuing of speeding tickets speaks for itself. Everyone should leave home a minute or two earlier and take the time to enjoy the beauty of each day. That's exactly why I try to get out on my bike each day. I'm not looking forward to the winter and my having to resort to a stationary bicycle instead of riding outdoors.	Oct 25, 2009 7:49 PM
10	The country is so focused on going green and being healthy. It's about time Oshkosh does the same. Not to say they haven't but the city could do much better. You'd be surprised the impact it would have on health	Oct 25, 2009 11:40 PM

Response Text		
11	Oshkosh is not a biker, walker, runner friendly city. Most drivers do not stop at the designated (white painted) walkways for non-motorized people...which is the law but not enforced at all. This is especially true on High Ave by the University and the walkways across Congress by Arboretum Drive...two areas I utilize everyday for walking and running.	Oct 28, 2009 1:52 PM
12	It would be great to have the WIOUWASH trail cleared of snow and not allow snowmobiles until north of Ryf Rd. This would allow me to bike to work year round. The crossing of Hwy 21 and Wiouwash trail is a major problem (near Fratellos). We do not let our kids bike to school for lack of bike-friendly routes, which is a shame.	Oct 28, 2009 1:55 PM
13	this is kind of a leading question, but I think having more biking opportunities IS really crucial.	Oct 28, 2009 2:16 PM
14	I would probably walk more if I could take my dog in the city parks, especially by the lake. I feel as a taxpayer and responsible dog owner, I am discriminated against.	Oct 28, 2009 2:17 PM
15	Cyclists need to avoid confrontation with motorists. For example, on Jackson St, you have 2 lanes of auto traffic - cycles need to use the sidewalk, not impede traffic. Many perceived problems for cyclists are of their own creation - perhaps funding for facilities needs to come from licensure of cycles rather than to raid the transportation gas tax paid for by motorists.	Oct 28, 2009 2:20 PM
16	On the Employment section, question 4, you don't give an option for 1-2 miles, which is what my commute is. Also, on the destination section, your options are assuming that the activities are done weekly or never - I bike and walk several times a month, but not necessarily at least once a week. On the issues and concerns section, several questions are worded with bias. For example, on question 7, you tell us the statewide spending and ask us to make opinions about Oshkosh spending. Overall, this survey appears to be invalid. I certainly appreciate the opportunity to express my views and I would like to see more bicycle paths, however, the data from this survey may not be representative of the public's opinion.	Oct 28, 2009 2:24 PM
17	Oshkosh is so far behind the times in bicycle safety. I wonder how hard it is going to be to turn this around and make people aware of the positives of this form of transportation. One personal story - Last year I was minding my own business as I was biking to work - a driver rolled down their window and yelled "biking sucks" I responded - "the war in Iraq sucks" as people are dying so we can have more oil - we can do something to help the dependence on foreign oil by each of us doing a little bit. SO the thing I am saying is that we have to educate the community on the alternatives to cars and make it a prideful thing to do our "part". We also need to make it a safe experience. Pat	Oct 28, 2009 2:40 PM
18	More trails and areas for pets to be allowed.	Oct 28, 2009 2:43 PM
19	I already bike and walk almost exclusively and so many of these questions do not really pertain to me.	Oct 28, 2009 2:51 PM
20	Oshkosh is ready-made for walking and cycling with the general lay-out and close proximity of so many key places, especially for young, healthy college students. Promoting how easy it is to walk to so many of the great Oshkosh attractions from campus would be incredibly useful.	Oct 28, 2009 2:55 PM
21	I bike because I like to bike! Time and weather are the biggest factors in my not biking. It would be nice to have a variety of locations to bike but biking directly beside a busy street is not aesthetically pleasing or relaxing. Thus, bike lanes on busy streets like 9th would not be used by me. Bikes and cars do not mix. A painted line does not equal safety in my opinion. Side streets are where bikes belong but some of them are SO bumpy that they are almost impossible to ride (Idaho for example).	Oct 28, 2009 2:57 PM

Response Text		
22	Designated paths and enforcing driving laws is the key to getting more bikes on the roads. I have been almost hit several times at the Witzel St Overpass. I was actually hit on Koehler St - I was riding my bike on the footpath, and a driver turned from a shopping center into traffic without looking both ways. She even admitted she didn't look both ways!	Oct 28, 2009 3:04 PM
23	It's not just drivers who don't know what to do. I've encountered bicyclists riding on the wrong side of the road leaving one of us to pull out into traffic as well as drivers who don't know that bicyclists are allowed in the middle of the driving lane.	Oct 28, 2009 3:40 PM
24	The city needs to improve enforcement of sidewalk clearing of snow around the university, especially on Elmwood Street. A lot of students walk here and the landlords rarely clear their sidewalks and crosswalks.	Oct 28, 2009 3:42 PM
25	Please look in to adding more bus routes in Oshkosh--I live on the west side of town and would love to be able to take a straight shot from the west side of town to the campus area, but switching buses makes it more time-consuming. Would love a one-stop shop for coming and going from work.	Oct 28, 2009 3:43 PM
26	I am not a member of any cycling clubs, but I would like to be able to cycle to work!	Oct 28, 2009 3:57 PM
27	The major disincentive for walking is the condition of sidewalks. During construction season, they are torn up and barricaded. In the winter, few people shovel and the sidewalks become absolutely treacherous, particularly in front of rental properties. Perhaps the city could simply provide this service to landlords, or elders, on a sliding fee scale. Poor lighting at night, and the number of crimes that occur along the route I travel, currently makes walking a risky choice. And, because the roads are too narrow and traffic too fast, bicyclists often endanger pedestrians by speeding down the sidewalks! Riding a bike on narrow roads with fast, cell-phone focused drivers is not something I would consider.	Oct 28, 2009 4:20 PM
28	Long distance travel is difficult unless you have access to a bike path.	Oct 28, 2009 5:16 PM
29	It's hard to find additional money in the current economic climate but DOT spending is skewed toward automobiles, no chance for trains, buses, bikes.	Oct 28, 2009 5:22 PM
30	I walk all the time so I don't think any of those things would significantly change my opinion...You need to focus on getting drivers to walk or bike...	Oct 28, 2009 5:41 PM
31	The greatest hindrance to walking and biking more for many people is the lack of sidewalks, bike paths or lanes, and the fact that motorists don't pay attention to bikers -- in short, if biking could be safer, more people would do it and that would be good for the environment and for health and for energy independence.	Oct 28, 2009 5:55 PM
32	I'm not convinced that education will improve the bicycling climate in Oshkosh, though it cannot hurt. I would very much like to see dedicated bike lanes and signage integrated into the Oshkosh street network, especially on the busier streets.	Oct 28, 2009 6:43 PM
33	fix the roads first. trails and bike lanes would be great, but what good is a bike lane if the sewer grates on the street are still 6 inches below the pavement? (corner of division and church - right down from city hall)	Oct 29, 2009 4:43 PM
34	Badly maintained streets and lack of bike lanes are the biggest impediments to biking in this city	Oct 29, 2009 11:54 PM
35	What is a walking or biking facility? The problems with walking safety are more often BIKERS on sidewalk or BIKERS not obeying traffic laws, in my experience.	Oct 30, 2009 1:12 AM

Response Text		
36	I am particularly concerned that drivers do not obey traffic rules when it comes to stopping for pedestrians or sharing road with bicycles.	Oct 30, 2009 8:56 PM
37	Traveling bicycling groups will more likely visit Oshkosh during summer season and have an economic impact on the local economy. Currently, there are no easy ways to get in and out of Oshkosh by bicycle.	Nov 2, 2009 10:15 PM
38	We should look at ways to connect Oshkosh to Fond du Lac trail system. The old inter urban line that is adjacent to the existing CN rail tracks would be an excellent option. This could also link south Oshkosh to the downtown.	Nov 3, 2009 7:22 PM
39	What I fear most when I ride my bike on city streets is drivers (often young ones) who talk on their cell phones, sometimes while turning at intersections. They are not paying any attention! At least in a car if I get hit I stand a chance of surviving, but not if I am on a bike or if my kids are in a bike trailer. For that reason I refuse to take my kids anywhere by bike except to/from the park. I'm not sure there is anything anyone can do to make car drivers safer consistently.	Nov 4, 2009 3:48 AM
40	Unsure of question #3 - encouraged by what?	Nov 9, 2009 6:11 PM
41	This is a HIGH PRIORITY item for me and my husband	Nov 12, 2009 1:54 PM
42	I think the largest increase with better paths, etc. would be on recreation, which improves health. I think there would be only a neutral or slight increase in terms of trips for work or shopping, etc.	Nov 12, 2009 7:36 PM
43	I don't particularly like this survey. I just did it before and wrote a lot of comments and don't know why but it all of a sudden disappeared on me. I think I hit the end of the message box. So will not waste my time here, perhaps will rewrite a note to you as what I wish to say is not really in this survey at all.	Nov 13, 2009 12:28 AM
44	Take a look at what Neenah offers. Citizens want to get out and walk in their downtown, children are outside, people bike and care to interact with each other positively. The buzz around their water is model practice. We are wasting one of our greatest resources "Oshkosh on the Water". It's appropriate use would prompt walking and exercise.	Nov 13, 2009 6:43 PM
45	Look at the Vision plan results; identify routes for walking/biking with low traffic volumes; narrow those streets and create inviting pedestrian and biking paths; connect schools, cultural and recreational facilities and parks; create connections to other recreational trails in cooperation with county; encourage good bike racks at all public facilities and retail centers. Be assertive in requiring multi-use paths on all state transportation projects! Thanks for the Wisconsin Street bridge paths - love them!	Nov 14, 2009 3:09 AM
46	A bicycle friendly city would help to encourage more of a green lifestyle...an example would be Madison which has many trails which connect working area's such as downtown and industrial parks...this gives the worker better and safer access to his work place...thus cutting down on the maintenance of roads...the ripple effect of bike commuters does have a dollar effect on all municipal spending	Nov 14, 2009 3:39 PM
47	I feel that Oshkosh falls far behind in developing bike paths and trails, that the city doesn't care about it, and has missed opportunities to develop paths along busy roads, like Hwy 76 going north and County A, for example, risking the safety of every person who rides a bike to school or wants to walk or rollerblade and is forced to drive to a safe place. What about kids that can't drive? I see this city as having a long-standing history of apathy towards health and recreation. Where are the winter skating rinks anymore? It's frustrating. We had guests from Minnesota last winter who brought their ice skates along - but they were floored to find out that Oshkosh had no skating rinks left and no cross-country ski trails.	Nov 14, 2009 4:05 PM

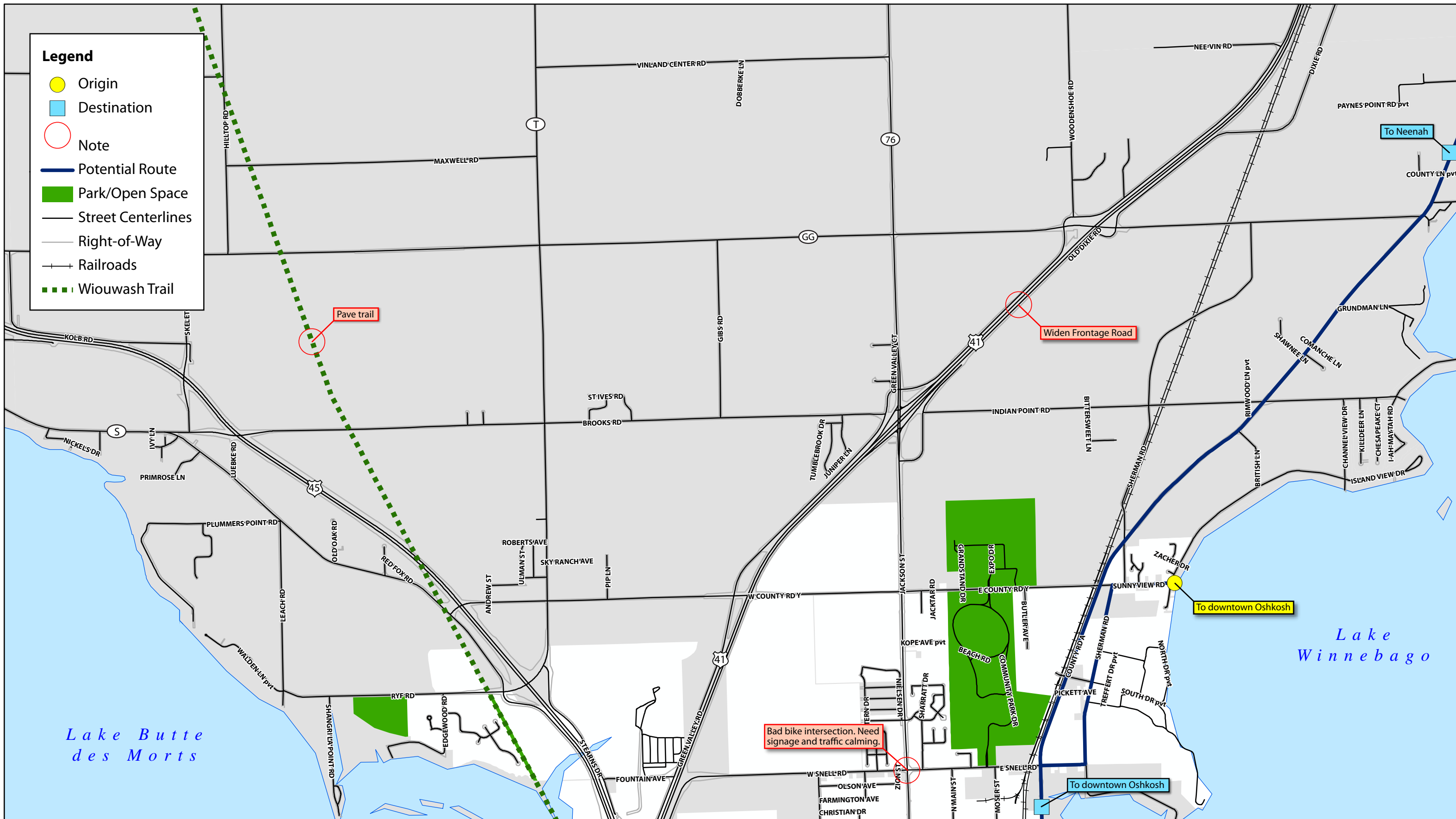
Response Text		
48	Driver education and making the roads safer is the number one priority for cyclists, IMHO. Dedicated lanes would greatly assist in this since drivers who see dedicated lanes will know that cyclists have a right be on the road too.	Nov 14, 2009 4:16 PM
49	I don't know what you mean by "facilities". I finally did see a hint of a definition above--"paved shoulders, etc." We need to do something about the bus routes that would allow for a mix of biking/walking and bus. Otherwise it isn't reasonably possible to get from one side of town to the other in a timely fashion. It is also not possible to reach key areas, such as the industrial parks for employment. People rely on taxi because of the limited routes and operating times of buses.	Nov 14, 2009 6:37 PM
50	I live on the NE side of Oshkosh. It would be nice to have some closer retail stores on this side of town to walk or bike to. I like to shop at Target and don't walk or bike there due to the distance...plus I have a small child that could not walk that far, and it is somewhat scary to bike that distance with a child in tow.	Nov 16, 2009 3:23 PM
51	I am very pleased to see these issues being considered.	Nov 17, 2009 4:15 AM
52	I would like to see more interaction with and among surrounding communities as well. As someone who has to commute outside of Oshkosh for work, it would be nice to see collaboration with other communities to create more pedestrian and bike friendly routes. Currently, there is no safe route for me to get to work on my bike, and I would be willing to bike extra distance if I knew I had a safe trail to ride on versus the narrow country roads.	Nov 18, 2009 2:37 PM
53	Oshkosh is way behind other nearby cities in providing bike/ped facilities. It's time we get on board. I live only a few miles out of town, so Oshkosh is my community and I would like very much to make this city bike friendly. I am a board member of Fox Cities Greenways in Appleton. I joined there three years ago because there was no organization like this for bike/ped advocacy here in Oshkosh. If one is created I will join it. Pat Spiegelberg, 920-427-6086, spiegsa@yahoo.com	Nov 18, 2009 5:30 PM
54	Education also has to been done to make sure walkers understand trails are multi-use and not walk three or four abreast blocking the whole trail from other users. I have had walkers yell at me to get off multi use trails even though I slow and announce my presence so as not to startle or scare anyone.	Nov 18, 2009 5:42 PM
55	Safe route from Oshkosh to Neenah for pedestrians must be a priority	Nov 18, 2009 11:19 PM
56	It is really exciting that more attention is being put on biking and walking. I feel the way our community has developed has discouraged walking and biking. The fact that all of our grocery/everyday needs are predominately located on the west side of town the only option most residents have is to use their car. We do have a great bus system in Oshkosh which does allow residents a different option, however, the buses do not run late enough in the day to allow people working until 5 or later the opportunity to use them (which is when most people would use the bus). I understand that it is expensive to run empty buses for 1/2 the day, but when they are packed the other 1/2 of the day it shows you that people are willing to use other forms of transportation. I am all for any efforts to improve our non- motorized circulation.	Nov 19, 2009 5:37 PM
57	Quality of life will be improved for next generation. When I was member of bike committee, parallel sewer grates near schools were major issue. Safe bicycle lanes and routes NEEDED.	Nov 19, 2009 11:30 PM
58	This plan is LONG overdue for implementation and I sincerely wish that Oshkosh was thought of as a bike friendly and even desired destination for biking. Promotion and outreach need to be equally practiced as the money aspect.	Nov 20, 2009 4:14 PM
59	There currently is no safe way to cross Highway 41 on a bicycle.	Nov 23, 2009 12:04 AM

Response Text		
60	To gather further information, the survey should be divided into two segments- walking and biking. The issues are different for both. Poorly designed intersections (think Koeller Road, Witzel, Hwy. 21-- all death zones for bicycles and pedestrians.)	Nov 28, 2009 5:43 PM
61	Overall, the north and east sides of Oshkosh have enough roads that have little traffic. Crossing the river and Hwy 41 can be problematic. Bike safety--#1 priority--wear a helmet. Should be a law for children. I biked hundreds of miles within Oshkosh this summer for commuting and errands, and only had one large pick-up truck speed past too close. Most drivers are very courteous.	Dec 2, 2009 2:15 PM
62	When the westside expands, they seem to get sidewalks. How about the Northside? Connect the subdivisions to the rest of the city. Add sidewalks to N. Main, Bowen, Vinland, Jackson and Snell.	Dec 2, 2009 11:29 PM
63	Also improvements of buses would help get cars off roads to allow more room for bikes!	Dec 3, 2009 5:56 PM
64	Setting an example for children/grandchildren w/o risking life and limb will change perceived cultural trends. Horse groups have members keep logs of travel to gather statistics when lobbying for trails. I would be willing to join/start a seniors group for this purpose which will support and justify monies. Maybe down the road a tax credit could be allowed for individuals who cut down on vehicle mileage annually verified w/odometer readings.	Dec 5, 2009 6:20 PM
65	Some of the questions are hard to answer because I would never be able to bike or walk to work because I have one child to get to school and one child to get to day care. The desire to bike or walk is there but not the ability to do it. Also don't know what a bike rodeo is.	Dec 11, 2009 2:41 PM
66	Oshkosh is a weak link between Fond du Lac and Neenah	Dec 19, 2009 6:28 PM

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Appendix B:

Origins & Destination Maps



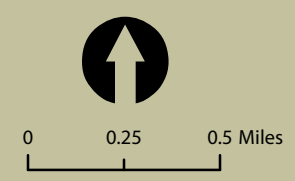
Legend

- Origin
- Destination
- Note
- Potential Route
- Park/Open Space
- Street Centerlines
- Right-of-Way
- Railroads
- - - Wiouwash Trail

Oshkosh Pedestrian and Bicycle Plan Update

Origins and Destinations

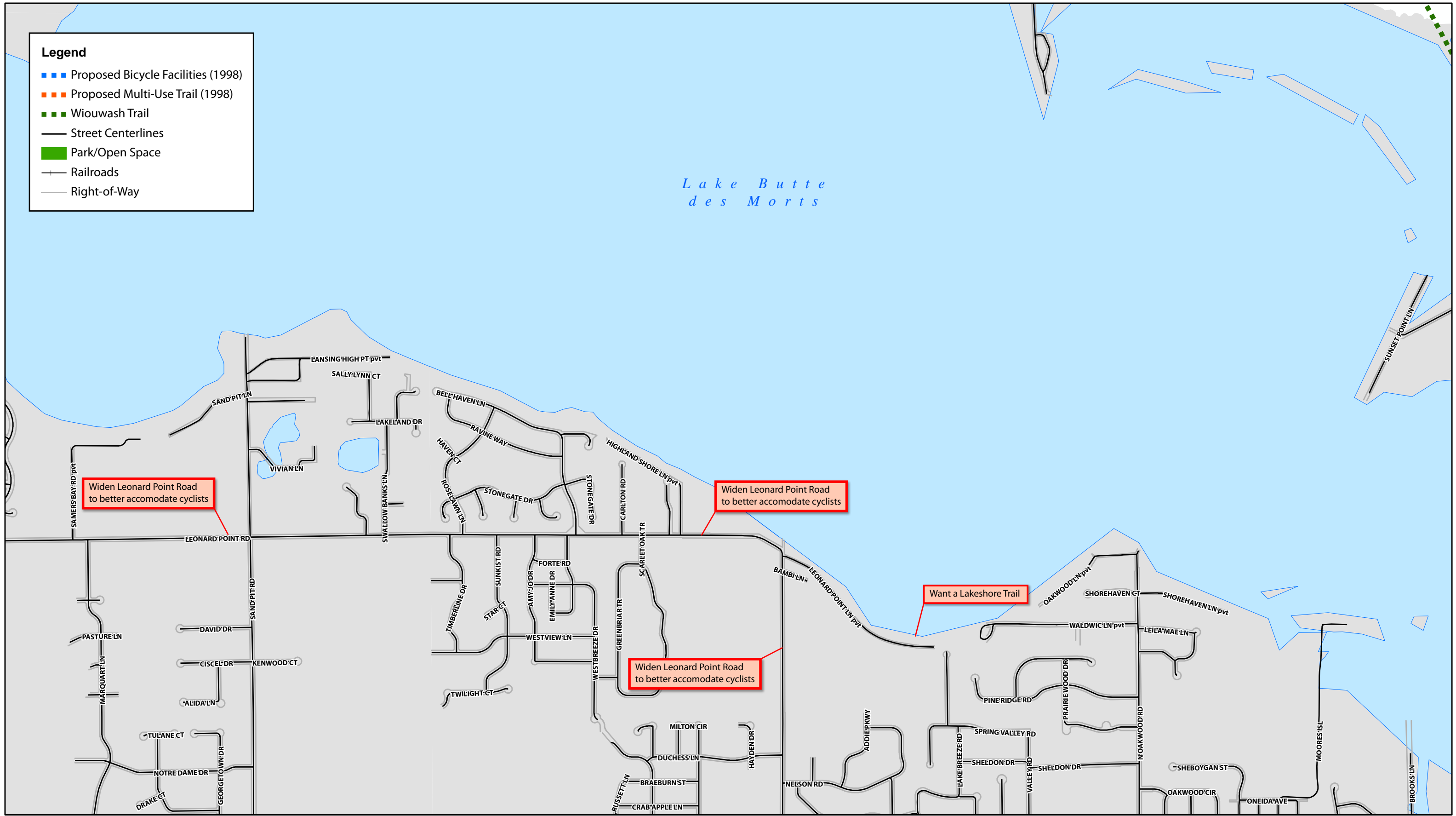
MAP 1A



Legend

- Proposed Bicycle Facilities (1998)
- Proposed Multi-Use Trail (1998)
- Wiouwash Trail
- Street Centerlines
- Park/Open Space
- Railroads
- Right-of-Way

Lake Butte
des Morts



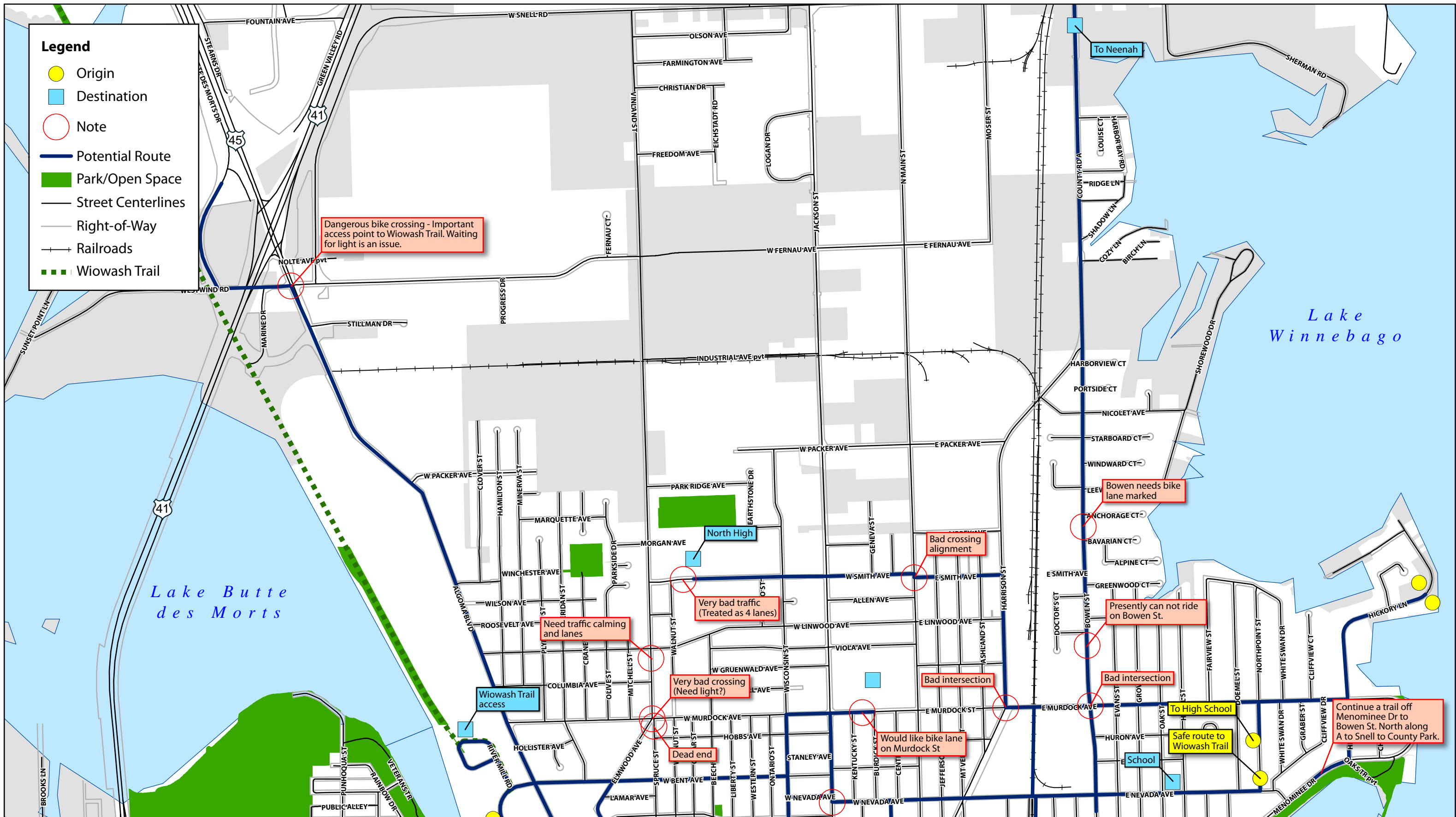
Pedestrian and Bicycle Plan Update

Oshkosh, Wisconsin

MAP 2



June 2009
Project 2362



Oshkosh Pedestrian and Bicycle Plan Update

Origins and Destinations

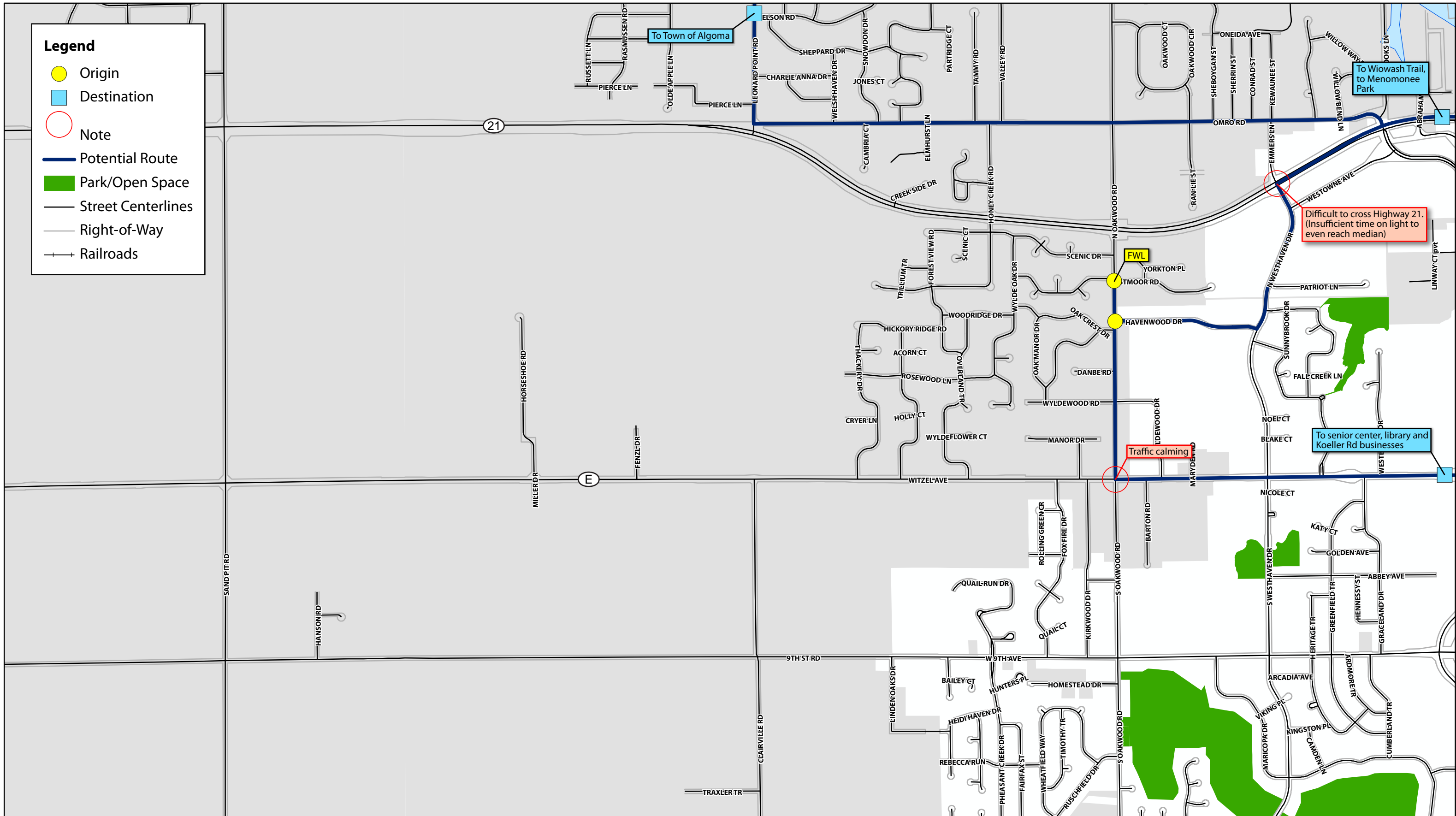
MAP 3A



June 2009
Project 2362

Legend

- Origin
- Destination
- Note
- Potential Route
- Park/Open Space
- Street Centerlines
- Right-of-Way
- Railroads



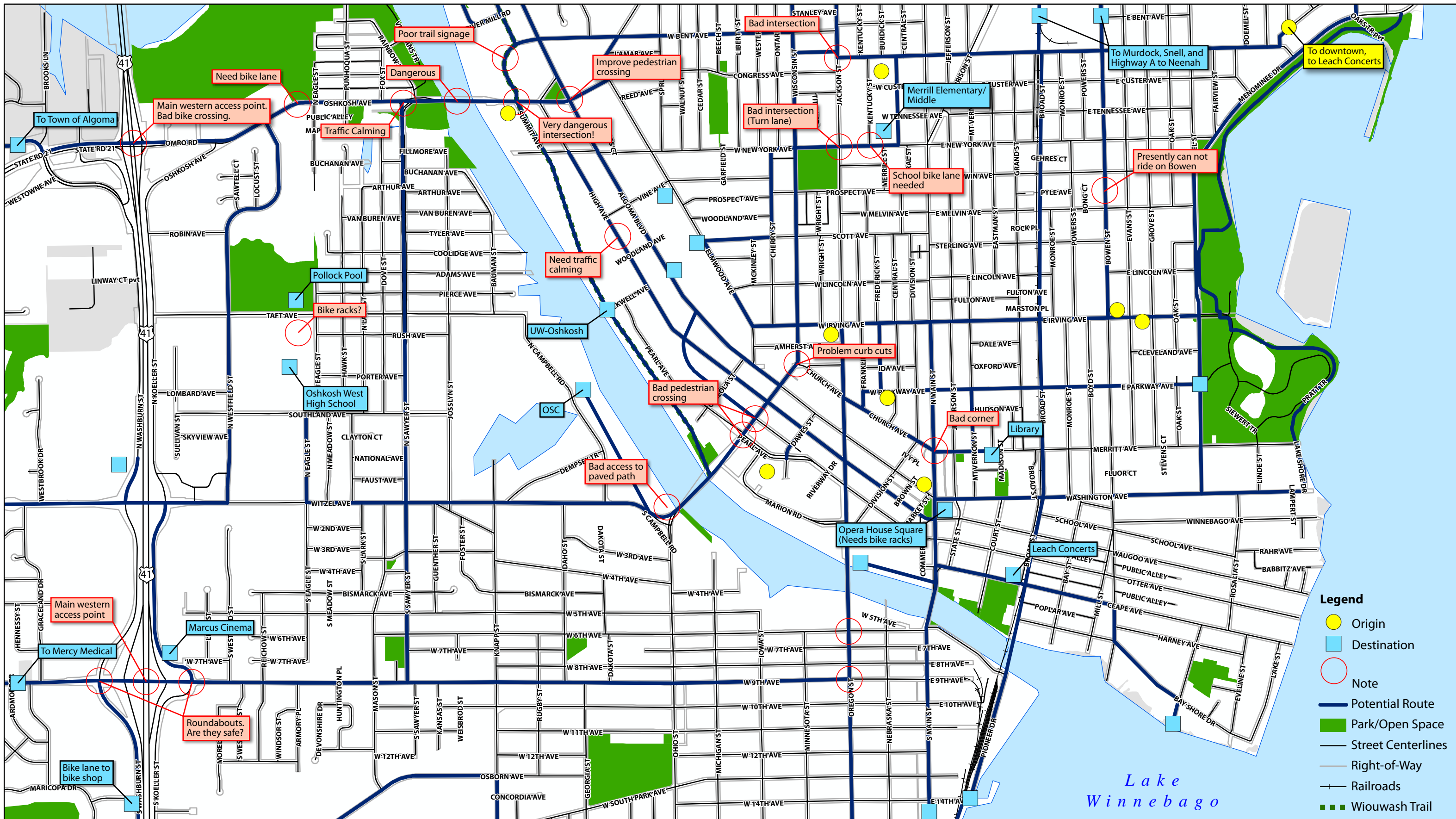
Oshkosh Pedestrian and Bicycle Plan Update

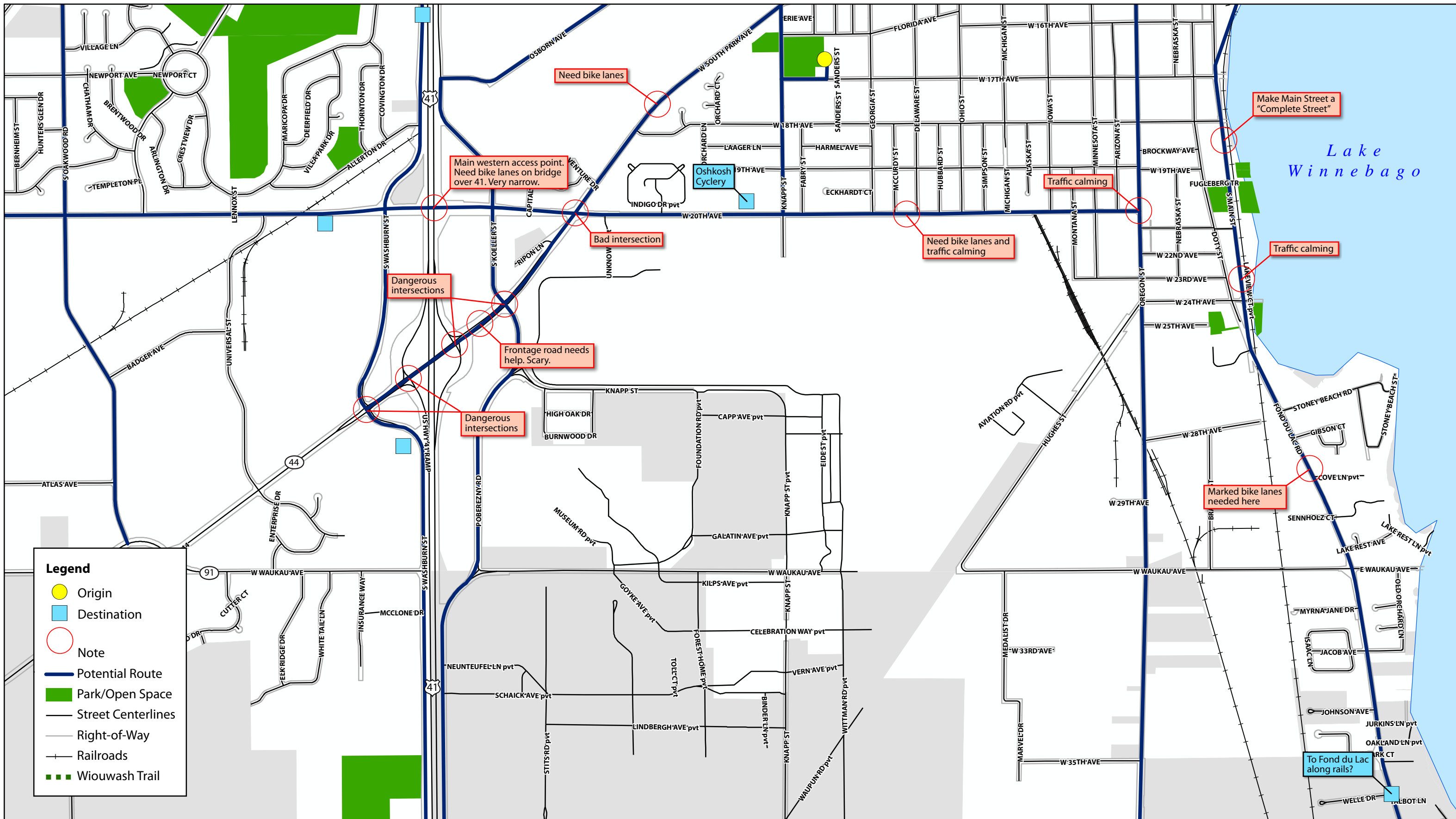
Origins and Destinations

MAP 4A



June 2009
Project 2362





Appendix C:

Highway 41 Improvements

Proposed Highway 41 Bicycle and Pedestrian Improvements

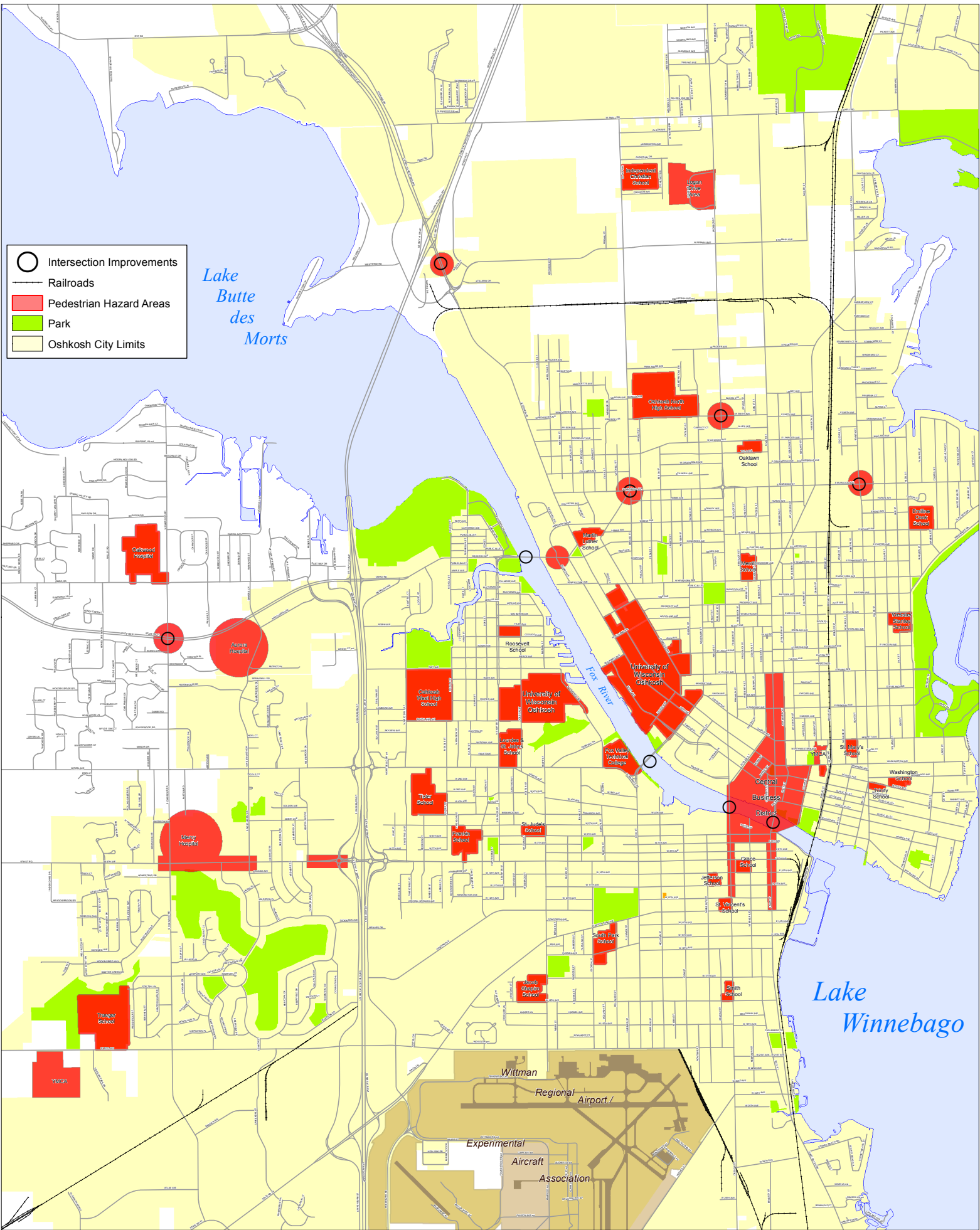
- On cross streets that approach US 41 (20th Avenue, 9th Avenue, Witzel Avenue, and WIS 21) WisDOT will construct wider outside lanes to provide an extra 2 feet. Total, with 2 feet of gutter pan, bike accommodations will include 4 extra feet on the outside of the motor vehicle travel lane to provide room for bicyclists. WisDOT is specifying integral curb and gutter which eliminates the concrete joint between the pavement and gutter. This will be similar to what exists on Witzel Avenue from Washburn to Oakwood. However, improvements will only be made within the project limits, beyond which only 4 11' motor vehicle travel lanes exist.
- On roundabouts, bike entrance ramps will allow bicyclists to travel from the street to the sidewalk if they choose to use the sidewalk around the multi-lane roundabouts. Those sidewalks around the roundabouts will be 10 feet wide which will provide room for two way bike traffic.
- Bike exit ramps, from the sidewalk back to the street, are proposed for the bicyclist that chooses not to continue to ride on the sidewalk once past the roundabouts.
- A 12' wide paved asphalt trail is proposed on the east side of USH 41 from STH 21 to Lake Butte des Morts Drive. The trail will be separated from USH 41 by 56" high concrete barrier. This trail will provide a connection to the WIOUWASH trail.
- Additional sidewalk is planned for Snell Road when it is reconstructed to an urban street section.
- WisDOT will be reconstructing the County Y structure over USH 41 with a 12' wide trail to provide for future connection of the County A trail to the WIOUWASH trail.
- WisDOT will be reconstructing County GG structure over USH 41 with 12' wide trail to provide for future connection across USH 41 for bicyclists and snowmobiles.

Use the following link to view detailed maps of these improvements on the Wisconsin Department of Transportation website.

<http://www.dot.wisconsin.gov/projects/us41expansion/maps.htm>

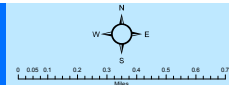
Appendix D:

Pedestrian Hazard Areas Map



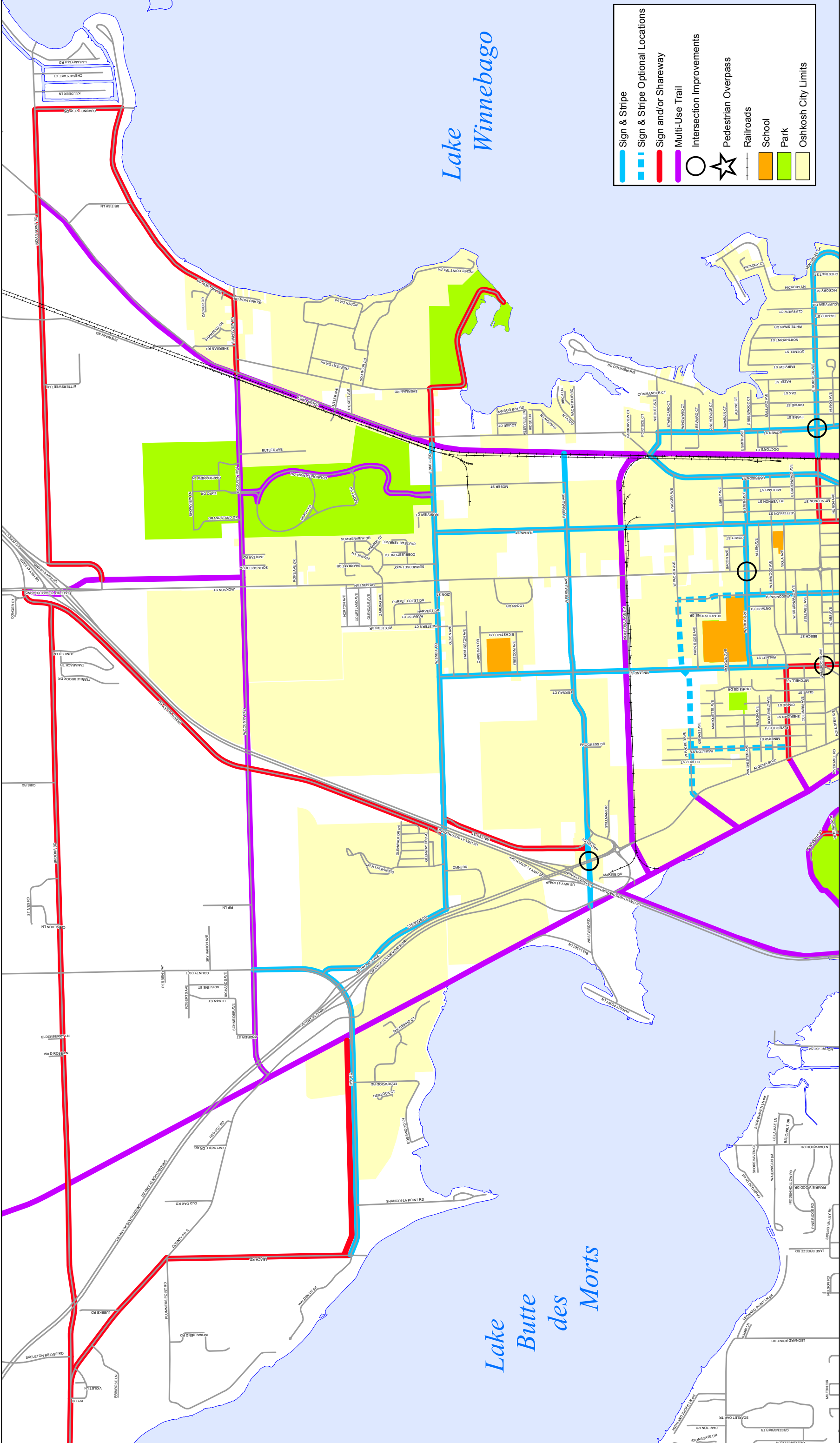
Oshkosh Pedestrian and Bicycle Plan

Pedestrian Hazard Areas



Appendix E:

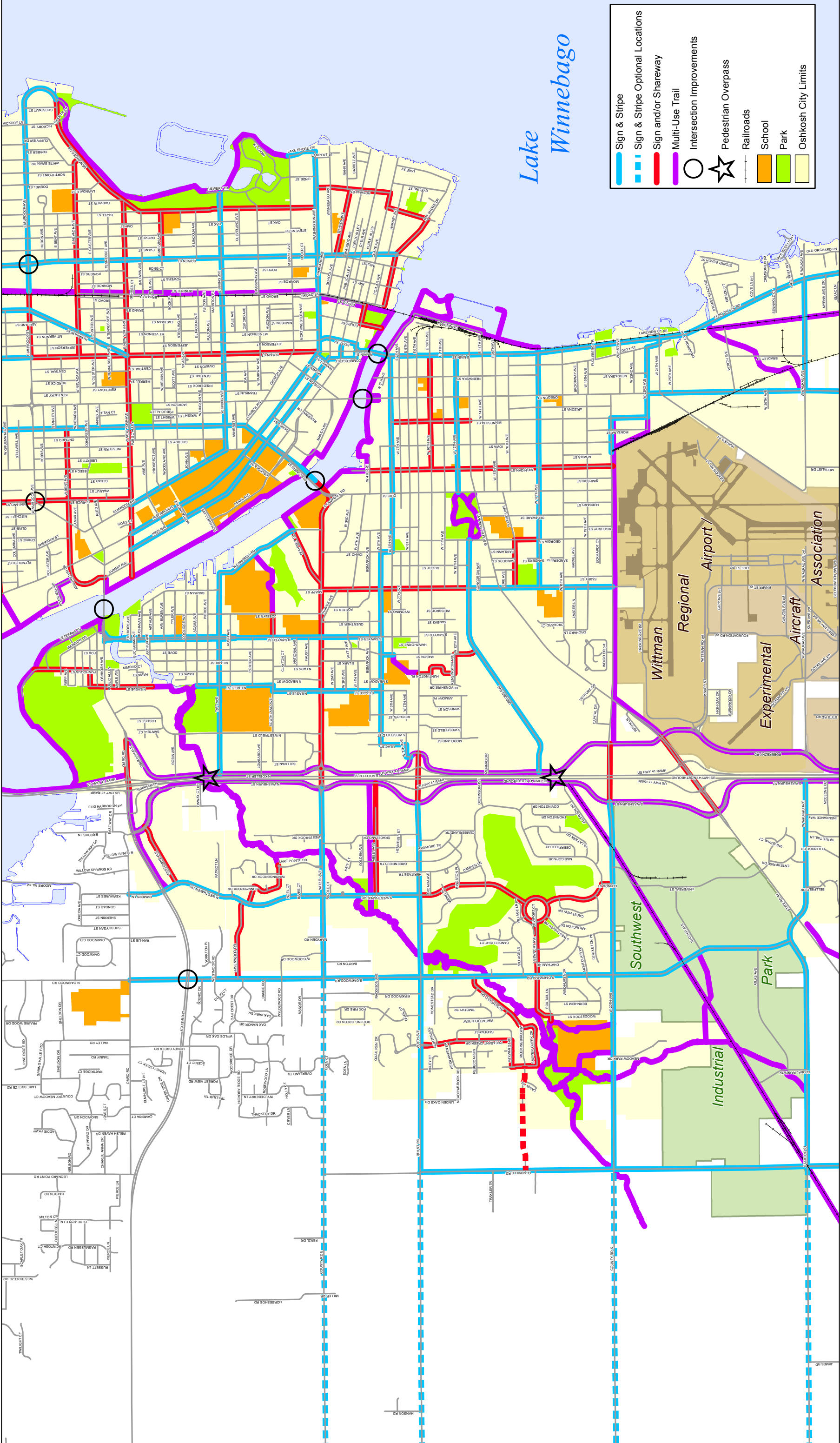
Recommended Bicycle Route/Improvement Maps



Oshkosh Pedestrian and Bicycle Plan

Map 1 of 3





- Sign & Stripe
- - - Sign & Stripe Optional Locations
- Sign and/or Shareway
- Multi-Use Trail
- Intersection Improvements
- ☆ Pedestrian Overpass
- Railroads
- School
- Park
- Oshkosh City Limits

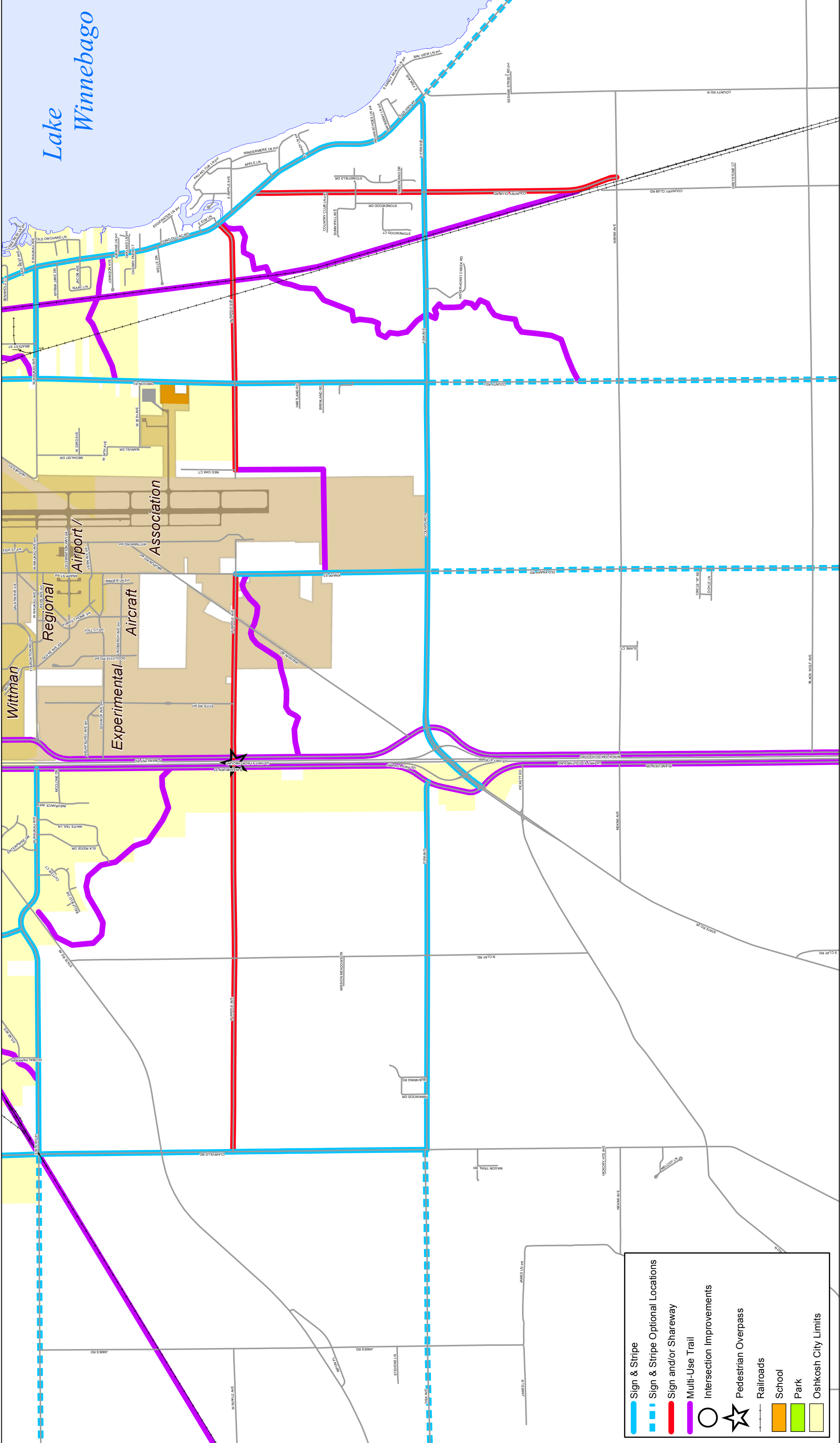
City of Oshkosh
Department of Community Development

November, 2011

Map 2 of 3

Oshkosh Pedestrian and Bicycle Plan



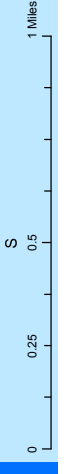
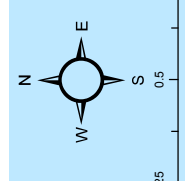


- Sign & Stripe
- Sign & Stripe Optional Locations
- Sign and/or Shareway
- Multi-Use Trail
- Intersection Improvements
- Pedestrian Overpass
- Railroads
- School
- Park
- Oshkosh City Limits



Oshkosh Pedestrian and Bicycle Plan

Map 3 of 3



Lake Butte des Morts

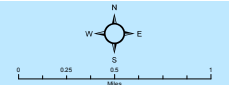
Lake Winnebago

- Sign & Stripe
- - - Sign & Stripe Optional Locations
- Sign and/or Shareway
- - - Sign & Shareway Optional Locations
- Multi-Use Trail
- Intersection Improvements
- ☆ Pedestrian Overpass
- Railroads
- School
- Park
- Oshkosh City Limits

Wittman
Regional Airport
Experimental
Aircraft
Association



Oshkosh Pedestrian and Bicycle Plan



November, 2011

NORTHSIDE OSHKOSH ROUTE LIST

NAME	FROM	TO	COMMENTS
Sign and Stripe Facility (Bike Lane)			
North Main - northbound	Bridge	East on Ceape, north on State to Washington	Circumnavigate narrow section of North Main Street
North Main - southbound	Washington to State, south south to Otter, west to commerce, south to ceape, east to Main	Bridge	Circumnavigate narrow section of North Main Street
Market	Algoma	High	
N Main	Murdock	Snell	
Wisconsin	Bridge	Smith or Packer	Possible extension to Packer, once constructed
Vinland	W Linwood	Snell	
Future Packer	Wisconsin	Algoma	Roadway does not yet exist
Hamilton	Linwood	Future Packer	Possible extension to Packer, once constructed
LakeShore	Washington	Merritt/Park Trail	
Washington	N Main	Lakeshore	
Murdock	Bowen or future trail	Hazel/Menomonie & Trail	
Bowen	Bayshore	Nicolet	
Nicolet	Bowen	Future trail or CTY A/Harrison	Trails with rails proposed
Irving	Elmwood	Park Entrance/Hazel	
Harrison	N Main	Nicolet/future trail or CTY A	Trails with rails proposed
High	New York	Commerce	Coordinate with Campus Plan
Algoma	New York	N Main	Coordinate with Campus Plan
Elmwood	W Irving	New York	Coordinate with Campus Plan
Smith	Vinland	Harrison	
Fernau	N Main or future trail	Wiuowash	Trails with rails proposed
Snell	Future trail or CTY A/Harrison	US 45/Stearns	Trails with rails proposed
Stearns	W Snell	CTY T/Ryf/Trail	
CTY T	Stearns	CTY Y	
Ryf	Stearns	Leach	Consider sign and/or shareway facility type as alternative
Sign and/or Shareway Facility			
School	Bowen	Rosalia	
E Melvin	Bowen	Hazel	
Nevada	N Main	Menomonie/Hazel	
E Murdock	N Main	Bowen or future trail	Possible Road Diet
N Main	Algoma/Washington	Murdock	
New York	Wiuowash	Menomonie/Hazel	Park Connection
Spruce/Vinland	New York	Linwood	
W Linwood	Vinland	Algoma	
CTY S	Leach	Brooks	
Leach	Ryf	CTY S	
Green Valley	W Snell	Jackson	
Walter	Fernau	Snell	
E Snell	CTY A/Trail	Sherman	
Sherman	Lakefront/picnic point	Snell	
Brooks	CTY S	Green Valley	Continue west
Indian Point	CTY A/Channel View	Jackson	
Sunny View	CTY A/Trail	Island View	
Island View	Sunny View	Channel View	
Channel View	Sunny View	Indian Point	
Bent	Trail	Wisconsin	
Bayshore	Broad/Trail	Washington (via Frankfort Ceape, Rosalia)	
Hazel/Menomonie	Washington	Murdock/Park trail	
Court	Trail	Ceape	
Ceape	Court	Broad / trail	

NORTHSIDE OSHKOSH ROUTE LIST

NAME	FROM	TO	COMMENTS
Multi-Use Trail Facility			
Tracks off Broad	Washington	CTY Y	Trails with Rails proposed
Wiouwash Connections	Algoma	Wiouwash Trail	At future Packer, once constructed
Wiouwash Connections	Algoma	Wiouwash Trail	At Linwood
CTY Y	Wiouwash trail	Future trail or CTY A/Harrison	Trails with Rails proposed
West-East Railroad Connection	Broad	Trail	Trails with Rails proposed
41 Intersection Connection	Indian Point	CTY Y	Coordiante with WI-DOT
Menomomie Park	Merritt	Murdock	
Wiouwash/Riverfront	Broad	Wiouwash trail	Off-trail connection at Arboretum. Continue north
CTY A	CTY Y/Sunnyview	Indian Point	Continue north
County Park Trail North-South Linkage/Community Park	Snell	CTY Y	
North-South Railroad Connection	Nicolet	CTY Y/Sunnyview	Trails with Rails Proposed
Broad Connection	Bayshore trail	Washington	In ROW parallel with tracks
Jackson	CTY Y	Brooks	
Area/Intersection for Study			
Jackson & Bent			Safety & alignment issues
Jackson & Nevada			Safety & alignment issues
Jackson & Smith			Safety & alignment issues
Bowen & Washington intersection			Safety issues
Bowen & Murdock intersection			
Broad St Trail	Bayshore	Washington	Design consideration
Trails with Rails (various locations)			Coordination needed with Railroad
Congress & Summit Intersection			Safety issues
Fernau & Algoma Intersection			Safety issues
Rail Crossings			Safety issues
Bridge Crossings			Long-term design
Murdock & Elmwood/Spruce Intersection			Safety & connection issues

SOUTHSIDE OSHKOSH ROUTE LIST

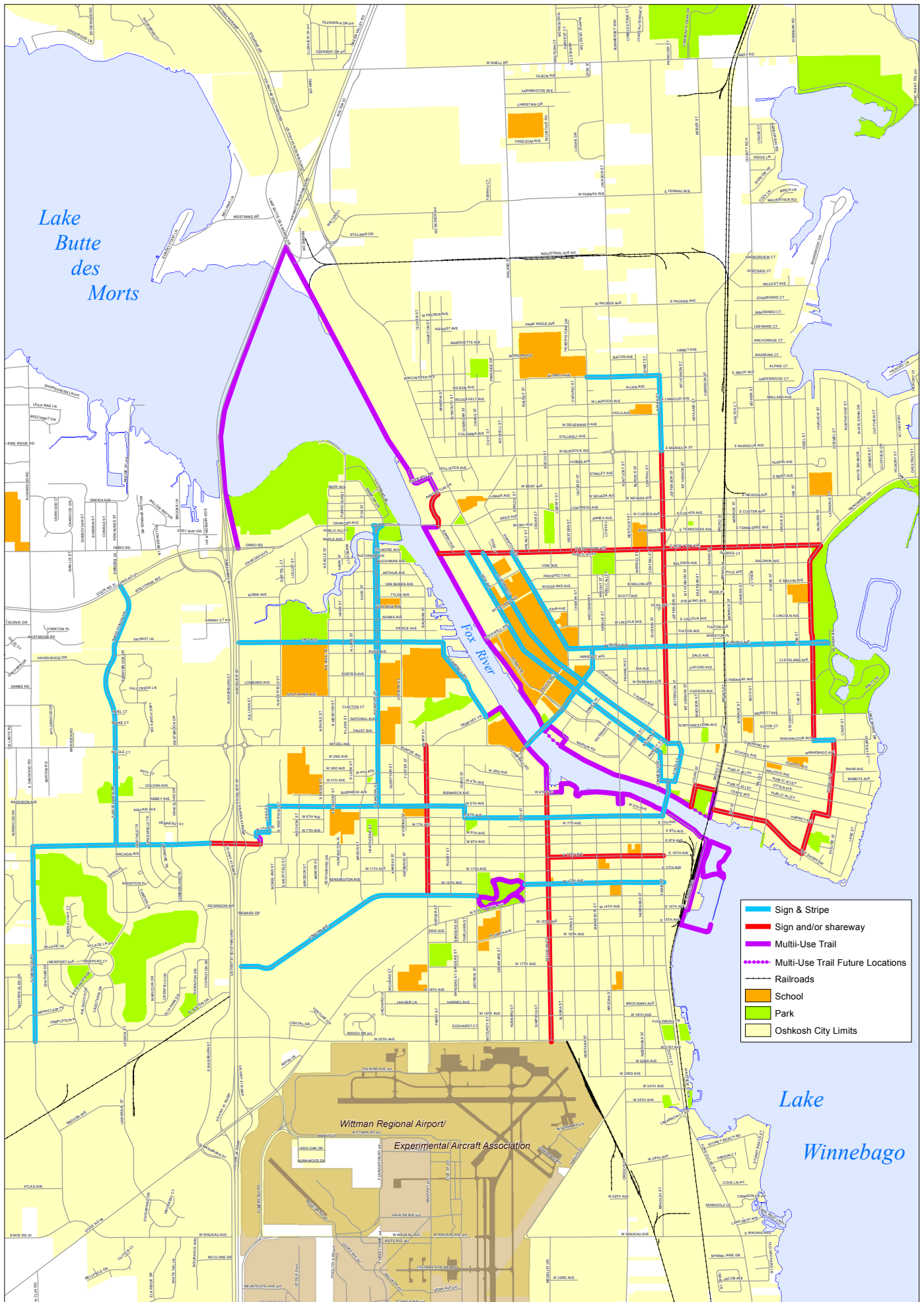
NAME	FROM	TO	COMMENTS
Sign and Stripe Facility (Bike Lane)			
S Main/Fond du Lac/USH 45 Sawyer	Bridge Oshkosh	Fisk W 5th	continue south...
Eagle	Sawyer Creek Trail/Taft	W 5th	Trail proposed. Could stop at Taft
Mason	W 5th	W 6th	Connect to Franklin trail
Emmers/Westhaven	Omro	W 9th	
Oakwood	Omro	STH 91/W Waukau	
Clairville	W 9th	Fisk	
Idaho	W 5th	W 6th	
Knapp	Osborn	W 20th	
Knapp	Trail / Ripple	CTY N	continue south...
Minnesota	W 20th	W 23rd	
Oregon	W 23rd	Fisk	continue south...
Taft	N Campbell	N. Koeller	
Witzel	N Washburn	S Oakwood	continue west...
W 5th	Idaho	Lilac-W 7th - N Koeller	Multiple road connection
W 6th	Fox River Trail/S Main	Idaho	
W 9th	S Washburn	Clairville	continue west...
W 12th	S Main	Ohio/Park	connect at South Park trail
Osborn	Georgia/Park	S Koeller	connect at South Park trail
W 17th	S Main	Knapp	
W 20th	S Washburn	Clairville	continue west...
W 20th	Minnesota	W 20th Trail	Trail proposed
W 23rd/Doty	Boat Launch/S Main	Minnesota	
STH 91/W Waukau	S Washburn	Clairville	continue west...
W Waukau	Fond du Lac	Oregon	
Fisk/CTY N	USH 45	S Washburn	
Fisk	S Washburn	Clairville	continue west...
Sign and/or Shareway Facility			
Westowne	N Westhaven	N Washburn	
Omro	Oshkosh	USH 41	cross USH 41
Havenwood	N Oakwood	N Westhaven	
Security-Sunnybrook	N Westhaven	Sawyer Creek trail	Trail proposed
Dempsey	Trail/N Campbell	Witzel	Trail proposed
Southland	N Sawyer	Josslyn	connect to Titan Stadium Trail
Witzel	Ohio/Bridge	N Washburn	cross USH 41
Abby	S Washburn	S Westhaven	Easement thru private prop. Alternative to Trail
9th Ave	S Koeller	S Washburn	cross USH 41
Michigan	W 4th/Trail	W 20th/Trail	Trails propesd
Knapp	Osborn	Witzel	
W 10th	S Main	Michigan	
Punhoqua	Trail/Lake	Graham	Trail proposed
Graham	N Eagle	Punhoqua	
N Eagle	Graham	Sawyer Creek Trail	Trail proposed. Could stop at Buchanan
Mason-Huntington-Kensington	W 9th	Osborn	Multiple road connection. Connect to Franklin trail
Florida	Georgia	Knapp	
Georgia	Florida	W 17th	
W 20th	S Koeller	S Washburn	cross USH 41
State Rd 44/South Park	Poberezny	S Washburn	cross USH 41
Minnesota	W 6th	W South Park	
Pheasant Creek	W 9th	Hayward	
Hayward	Pheasant Creek	Wellington	
Wellington-Sawyer Creek-Ruschfield	Hayward	S Oakwood	Multiple road connection Alternative routes based on roadway construction
Mockingbird extended	Wellington	Clairville	
Newport	S Oakwood	Westhaven Circle	
Westhaven Circle			
Maricopa	W 20th	Westhaven Circle	
S Westhaven	Westhaven Circle	W 9th	
W Ripple	Fond du Lac	Red Oak	Trail proposed
W Ripple	Knapp	S Koeller/Poberezney	
W Ripple	S Washburn	Clairville	
Country Club	USH 45	Nekimi	

SOUTHSIDE OSHKOSH ROUTE LIST

NAME	FROM	TO	COMMENTS
Multi-Use Trail Facility			
USH 41-Over Butte Des Morte Washburn	Wiuwash/Algoma	Omro	WIDOT Coordination
Koeller/Poberezny	Oshkosh	South...	Special Study Area
Sawyer Creek	Clairville	N Eagle	Complicated tail/easement acquisition
Oshkosh/State Rd 21	STH 41	N Westhaven	continue west...
N of Abby	S Westhaven	S Washburn	Easement/Alternative to Abby Signed Route
SW Industrial Park trails	W 20th	State Road 91	Multiple trails based on Industrial Park Plans
Casey Meadow/Trager School Trails	Sawyer Creek	W 20th	Multiple trails along waterways
Butte Des Morte - Fox River	HWY 41	Oshkosh	On golf course/park property
Titan Stadium Trail	Josslyn	N Campbell	
Fox River Trail	Dempsey	S Main	
Pioneer Drive Trail	S Main	W 17th	Coordinate with Pioneer redevelopment
South Park Park Trail	Georgia	Ohio	Park trail
Franklin School	Mason	Huntington	
W 20th Ave	Minnesota	S Koeller	Alternate to 3 block W 20th Bike Lane
Creek Trail	S Koeller/Poberezny	Knapp	Traverse Airport
Ripple Connector	Knapp	W Ripple	Traverse Airport
Tracks	W 20th	W 23rd	Rails with trails
W South Park Trail Connector	W 20th	S Koeller/Poberezny	
Waterway Trail	Fond du Lac	Oregon/County I	
Waterway Trail	STH 44/STH 91	S Washburn Trail	Trail proposed
Rail Line in SW Ind Park	S Washburn	west...	based on Industrial Park Plans
Fox River Valley Rail Trail	Fond du Lac	Country Club Rd	
Area/Intersection for Study			
Airport			Special Study Area
SW Industrial Park			Special Study Area
STH 41 - Frontage Roads			Special Study Area/Road Diet Option
Rail Crossings			Must be analysed for safety
Bridge Crossings			Long-term design
Fond du Lac/STH 45			Changes of lanes and speeds
Pedestrian Overpass 41	at Sawyer Creek		
Pedestrian Overpass 41	South of Osborn		
Pedestrian Overpass 41	at Ripple		

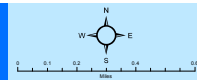
Appendix F:

Priority Facility Improvement Map



Oshkosh Pedestrian and Bicycle Plan

Priority Facility Improvements



SIGN & SHAREWAY - HIGH PRIORITY STREETS

STREET	FROM	TO	LENGTH (FEET)	LENGTH (MILES)	SIGN COST	STRIPE COST	SYMBOL COST
KNAPP ST	WITZEL AVE	OSBORN AVE	4046	0.77	\$ 600	N/A	\$ 4,828
MICHIGAN ST	W 4TH AVE	W 20TH AVE	6696	1.27	\$ 1,000	N/A	\$ 7,990
BAY SHORE DR	BROAD ST	FRANKFORT ST	2764	0.52	\$ 400	N/A	\$ 3,298
ROSALIA ST	WASHINGTON AVE	CEAPE AVE	2055	0.39	\$ 400	N/A	\$ 2,452
CEAPE AVE	FRANKFORT ST	ROSALIA ST	406	0.08	\$ 200	N/A	\$ 484
ARBORETUM DR	RIVER MILL RD	CONGRESS AVE	957	0.18	\$ 200	N/A	\$ 1,142
NEW YORK AVE	FOX RIVER	MENOMINEE DR	10366	1.96	\$ 1,600	N/A	\$ 12,369
N MAIN ST	MURDOCK AVE	WASHINGTON AVE	7916	1.50	\$ 1,200	N/A	\$ 9,445
HAZEL ST	BALDWIN AVE	WASHINGTON AVE	4830	0.91	\$ 800	N/A	\$ 5,763
MENOMINEE DR	FAIRVIEW ST	HAZEL ST	549	0.10	\$ 200	N/A	\$ 655
FRANKFORT ST	CEAPE AVE	BAY SHORE DR	1158	0.22	\$ 200	N/A	\$ 1,382
W 9TH AVE	S WASHBURN ST	S KOELLER ST	1372	0.26	\$ 200	N/A	\$ 1,637
W 10TH AVE	MICHIGAN ST	S MAIN ST	3132	0.59	\$ 600	N/A	\$ 3,737
CEAPE AVE	BROAD ST	COURT ST	553	0.10	\$ 200	N/A	\$ 660
COURTH ST	CEAPE AVE	RIVERWALK	577	0.11	\$ 200	N/A	\$ 688
					\$ 8,000	\$ -	\$ 56,529
						Total	\$ 64,529

SIGN & STRIPE - HIGH PRIORITY STREETS

STREET	FROM	TO	LENGTH (FEET)	LENGTH (MILES)	SIGN COST	STRIPE COST	SYMBOL COST
N CAMPBELL RD	DEMPSEY TR	TAFT AVE	2391	0.45	\$ 400	\$ 2,083	\$ 216
CEAPE AVE	COMMERCE ST	N MAIN ST	179	0.03	\$ 200	\$ 156	\$ 216
CEAPE AVE	N MAIN ST	STATE ST	95	0.02	\$ 200	\$ 83	\$ 216
WASHINGTON AVE	N MAIN ST	STATE ST	313	0.06	\$ 200	\$ 273	\$ 216
WASHINGTON AVE	HAZEL ST	ROSALIA ST	540	0.10	\$ 200	\$ 470	\$ 216
IDAHO ST	W 5TH AVE	W 6TH AVE	318	0.06	\$ 200	\$ 277	\$ 216
W 6TH AVE	IDAHO ST	S MAIN ST	5374	1.02	\$ 800	\$ 4,682	\$ 216
SAWYER ST	W 5TH AVE	RUSH AVE	3976	0.75	\$ 600	\$ 3,464	\$ 216
ALGOMA BLVD	W NEW YORK AVE	N MAIN ST	7184	1.36	\$ 1,000	\$ 6,259	\$ 432
ELMWOOD AVE	W IRVING AVE	W NEW YORK AVE	3004	0.57	\$ 400	\$ 2,617	\$ 216
IRVING AVE	ELMWOOD AVE	MENOMINEE DR	7500	1.42	\$ 1,200	\$ 6,534	\$ 432
HIGH AVE	CONGRESS AVE	COMMERCE ST	7679	1.45	\$ 1,200	\$ 6,690	\$ 432
STATE ST	CEAPE AVE	WASHINGTON AVE	1052	0.20	\$ 200	\$ 917	\$ 216
W 12TH AVE	OHIO ST	S MAIN ST	3773	0.71	\$ 600	\$ 3,287	\$ 216
OSBORN AVE	S KOELLER ST	GEORGIA ST	6975	1.32	\$ 1,000	\$ 6,077	\$ 432
W 7TH AVE	S KOELLER ST	LILAC ST	455	0.09	\$ 200	\$ 396	\$ 216
LILAC ST	W 5TH AVE	W 7TH AVE	703	0.13	\$ 200	\$ 612	\$ 216
W 5TH AVE	LILAC ST	IDAHO ST	5295	1.00	\$ 800	\$ 4,613	\$ 216
TAFT AVE	N KOELLER ST	N SAWYER ST	3710	0.70	\$ 600	\$ 3,232	\$ 216
TAFT AVE	N SAWYER ST	N CAMPBELL RD	1750	0.33	\$ 400	\$ 1,525	\$ 216
N SAWYER ST	RUSH AVE	OSHKOSH AVE	7572	1.43	\$ 1,200	\$ 6,597	\$ 432
WISCONSIN ST	W IRVING AVE	FOX RIVER	3304	0.63	\$ 600	\$ 2,878	\$ 216
COMMERCE ST	WAUGOO AVE	CEAPE AVE	762	0.14	\$ 200	\$ 664	\$ 216
W 9TH AVE	S WASHBURN ST	S OAKWOOD RD	4790	0.91	\$ 800	\$ 4,173	\$ 216
S OAKWOOD RD	W 9TH AVE	W 20TH AVE	5285	1.00	\$ 800	\$ 4,604	\$ 216
WESTHAVEN DR	W 9TH AVE	STH 21	7217	1.37	\$ 1,000	\$ 6,288	\$ 432
W SMITH AVE	N MAIN ST	WISCONSIN ST	1963	0.37	\$ 400	\$ 1,710	\$ 216
N MAIN ST	MURDOCK AVE	W SMITH AVE	2041	0.39	\$ 400	\$ 1,778	\$ 216
N MAIN ST	CEAPE AVE	PIONEER DR	918	0.17	\$ 200	\$ 800	\$ 216
					\$ 16,200	\$ 83,739	\$ 7,560
						Total	\$ 107,499

OFF-ROAD TRAILS - HIGH PRIORITY

TRAIL	FROM	TO	LENGTH (FEET)	LENGTH (MILES)	ASPHALT	CONCRETE	COMMENT
WIOUWASH	RIVERMILL RD	US HWY 41	6883	1.30	\$ 139,746	\$ 284,576	Currently constructed
ARBORETUM DR & RIVER MILL RD	CONGRESS AVE	WIOUWASH	1323	0.25	\$ 26,861	\$ 54,699	Currently constructed
BUTTE DES MORTS BRIDGE	WIOUWASH	OSHKOSH AVE	8507	1.61	\$ 172,718	\$ 351,719	Currently constructed
SOUTH PARK SOUTH			1643	0.31	\$ 33,358	\$ 67,929	Currently constructed
SOUTH PARK NORTH			2259	0.43	\$ 45,865	\$ 93,398	Currently constructed
PIONEER MARINA POINT			968	0.18	\$ 19,653	\$ 40,022	
RIVERWALK	JACKSON ST	N MAIN ST	1398	0.26	\$ 28,384	\$ 57,800	Constructed under separate funding
RIVERWALK	N MAIN ST	BROAD ST	1273	0.24	\$ 25,846	\$ 52,632	Constructed under separate funding
RIVERWALK	OHIO ST	DEMPSEY TR	1692	0.32	\$ 34,353	\$ 69,955	Constructed under separate funding
RIVERWALK	OREGON ST	OHIO ST	4288	0.81	\$ 87,059	\$ 177,286	Constructed under separate funding
RIVERWALK	S MAIN ST	OREGON ST	1492	0.28	\$ 30,292	\$ 61,686	Constructed under separate funding
PIONEER ISLAND			3133	0.59	\$ 63,609	\$ 129,533	
PIONEER DR	S MAIN ST	E 15TH AVE	3859	0.73	\$ 78,349	\$ 159,549	
RIVERWALK	WISCONSIN	JACKSON ST	2915	0.55	\$ 59,183	\$ 120,520	Constructed under separate funding
RIVERWALK	CONGRESS AVE	WISCONSIN ST	6764	1.28	\$ 137,330	\$ 279,656	Constructed under separate funding
S KOELLER ST	W 7TH AVE	W 9TH AVE	270	0.05	\$ 5,482	\$ 11,163	
BROAD ST	RIVERWALK	CEAPE AVE	773	0.15	\$ 15,694	\$ 31,959	
					\$ 1,003,782	\$ 2,044,082	

Total to be constructed (Ashpalt) **\$ 182,788** and/or
Total to be constructed (Concrete) **\$ 372,226**

Total for Priority Improvements - Asphalt Trails	\$ 354,817
Total for Priority Improvements - Concrete Trails	\$ 544,255

Appendix G:
Supplemental Road Diet
Information

Road Diets

Losing width and gaining respect

Can our nation's roads gain efficiency, mode share and safety by getting leaner? Many are doing just that.



Turn Lanes Help Road Capacity

Capacity remains the same. By keeping the full number of lanes at intersections, 4-lane to 2-lane conversions often keep the same high capacity of original 4-lane roadways. Turn lanes can be created at intersections.

Nationwide, engineers are putting roads on “diets,” helping them lose lanes and width. In the process formerly “fat” streets often become leaner, safer, and more efficient. They become multi-modal and more productive. In many cases these former “warrior” roadways are tamed and turned into “angels.”

Often these changed roads set the stage for millions or megamillions of dollars in new commercial and residential development. The change can increase value of existing properties. In some cases costs of reconstructing roadways are repaid in as little as one year through increased sales tax or property tax revenue.

Roadway conversions discussed here may be just the ticket to start remaking unhealthy, unsafe city neighborhoods or commercial districts and turn them into more robust, vital, economically sound places. Road conversion may be undertaken to create safer, more efficient ways to provide access and mobility for pedestrians, bicycle riders and transit users, as well as motorists. They improve livability and quality of life for residents and shoppers. Just as with human diets, road diets without doctors’ (transportation planners and engineers) analyses and prescriptions, might be foolhardy.

Mobility and Access Improve. Four-lane roadways significantly discourage mobility and access of transit users (cannot cross these streets), pedestrians and bicyclists. Communities, interested in providing higher levels of service and broadening transportation choices, find street conversions essential to success. Cities like Toronto in Ontario, Canada; Santa Monica, Pasadena, Arcada and Mountain View in California; Seattle, Kirkland, Gig Harbor, University Place and Bellevue in Washington; and Portland, Eugene and Bend in Oregon; are finding funds to increase mobility and access by reducing the number of lanes and widths of arterial and collector streets.

Conversions are Not New. Transportation engineers and safety specialists have long known that overloaded two-lane or four-lane roads of any volume can be risky places to drive, conduct business, attempt to access transit, walk or bicycle. On such roadways, frequent turning movements into commercial and residential driveways can result in high crash levels. On multi-lane roadways lane swapping adds friction and reduces performance.

Safety Improvements. In the 1980’s Pennsylvania DOT engineers used FHWA safety monies to fully fund a study and to convert a one-mile section of Electric Avenue in Lewistown, Pennsylvania, from four lanes to three. The roadway was carrying 13,000 ADT. After reviewing hours of time-lapse video

and analyzing crash statistics and other data, the team concluded that more uniform flow, reduced conflicts and great reduction in crashes would result from four to three-lane conversion. The change was made facing 95% opposition from local residents, who felt that their trip times would increase.

Once the new roadway section was completed, new time-lapse photography and data collection began. Dangerous maneuvers and crashes dropped to nearly zero. Overall trip times were unaffected. Today nearly 95% of those fearing the change are openly thankful to PennDOT for making the roadway better for safety, mobility and access.



Full roadway diets still move cars, but now the corridor moves people as well. Both Bellevue, Washington, and Mountain View, California, have converted formerly four-lane sections to pedestrian and bicycle friendly roads. Motorists benefit from more border width to fixed objects and are more comfortable with bicyclists and pedestrians.

Many Roadways Await Change. America has a plethora of “leftover” four-lane roadways. Many bypasses and other road improvements leave four-lane roads ready for conversion. At the same time thousands of miles of new four-lane sections are proposed and built each year. Many of these roadways would be better designed with odd numbers of lanes or two lanes, plus medians with turning pockets.

During the past twenty years many new roadways have been constructed with three or five lanes. (Third or fifth lanes are scramble or two-way left turn lanes - TWLTLs.) These lanes add as much as 30 percent to efficiency of movement, and they often cut number of crashes in half. Significant bodies of research have

proven the value of shifting left turn movements from main through movement. Typically in these cases, however, roadways have been widened from two to three lanes or from four to five lanes.

This widening often converts sidewalks and paved shoulders or requires high cost, right-of-way acquisition. In many such cases “roadway improvements” only allow more cars into traffic streams, encouraging communities to become more car dependent. Increased congestion sends roadway’s level of service into long-term slide. Changes often generate more speed, noise and danger to people trying to walk, shop or live on main streets or neighborhood collectors. Property values can diminish, and towns lose their livability factors and competitive edges. This process of roadway widening can be thought of as fattening a patient. The belt is let out another notch, and the patient puts on a few more unhealthy pounds toward auto dependency.

The Road Diet. “Road dieting” is a new term applied to “skinnying up” patients (streets) into leaner, more productive members of society. The ideal roadway patient is often a four-lane road carrying 12-18,000 auto trips per day. Other roadway patients may be helped through this same process. Some especially sick four-lane patients may be carrying 19-25,000 cars per day, but still qualify for diets. What are the symptoms that scream for change? What roadways are ideal patients? And what are the upper limits?



Spare Lanes Reward Speeders

NW 8th Avenue in Gainesville, Florida. This four-lane roadway is an excellent candidate for “road dieting.” Today, motorists race from the signal anticipating the merge to 2-lanes, 3000 feet ahead. Excessive speeds of 50 mph are common. School, park and bicycle trail crossing are located here. Two-lane roadway with bike lanes, medians and turning lane at the intersection is suggested by safety advocates as an alternative. The redesigned roadway would increase capacity by lowering speed.

Sick Road Patient Symptoms. Four lane roadways often generate excessive speeds. These roadways also erode the ability for transit, walking and bicycling to succeed. How does this happen? Motorists using four-lane roadways, note that there are always spare lanes in their direction. They tend to drive faster than they should. Motorists using multi-lane roads seek to match speeds of other drivers. Imprudent, speeding drivers tend to set prevailing speeds. As traffic volumes increase, especially at rush hour, risk of high-speed driving increases. During peak volumes, right or left-turning movements occur. Also during these times, many motorists drive close to one another creating “screens” of impeded view. Last minute, instant swapping of lane behavior to stay in motion leads to serious rear-end crashes. Motorists move from lanes of slowing vehicles directly into the backs of other motorists who have already slowed for their turns. The upper comfort range for arterial conversions appears to be between 20-25,000 ADT. Higher numbers have been achieved. Santa Monica officials feel most comfortable capping at 20,000, although they have hit 25,000.

Pedestrians at Risk. Pedestrians have rugged times finding gaps across four lanes. Crash rates and severity of conflicts with autos result in almost certain death (83% of pedestrians hit at 40 mph die). Many bicyclists find four-lane roads too narrow to ride comfortably. Transit users cannot safely cross streets at most locations. Thus, many people, who have formerly had mode choice, give up trying to cross streets converted to four lanes. Instead they join the daily traffic stream and add to the roadways’ level of service drain.

Typical Patient and Process. Burcham Road in East Lansing, Michigan, was formerly a “fat road.” Speeds were excessive. Pedestrians near the high school found it unsafe to cross the four-lane roadway. Neighbors complained about noise and danger. East Lansing’s traffic engineer, John Matusik, P.E., felt that this roadway was a prime candidate for a road diet. The roadway carried 11-14,000 cars per day (AADT). Viewed from another perspective, 14,000 cars in four lanes over a ten hour period is only 3,500 per lane per day, or 350 per hour for a ten- hour period. Each lane is capable of carrying 1,900 cars per hour. Thus, cutting the number of lanes in half wouldn’t affect traffic capacity.

The Diet Begins. The change on Burcham Road was made (see picture). With “leftover” road space John added turn lane (TWLTL) and bike lanes. The bike lanes give motorists more border width, moving them six feet further from fixed objects such as utility poles, hydrants and other fixed objects. Cars move today at more uniform speeds (prudent drivers set prevailing speeds). People are able to enter and exit driveways more easily.



Burcham Road's Four-Lanes to Three-Lanes

Pedestrians and motorists are more comfortable today. Motorists are easily 10 feet from fixed objects. As much as sixteen feet separate pedestrians from motorists.

have six feet more separation from Pedestrians motorists. Comfort levels of all people using the corridor have markedly improved.

Bigger Roads, Same Diet. Once John had proven he could make a moderate volume, four lane into a healthier patient, he pushed Michigan DOT to use the same diet strategy on a higher volume road, the central artery through East Lansing, Grand River Boulevard. The 23,000 AADT roadway had been sluggish and risky for years. People did not enjoy living along it or driving, walking, using transit or bicycling this corridor. This roadway section was 1.1 miles in length. The roadway serves as a regional traffic distributor. It has minimal number of commercial driveways, thus turning movements are modest.

Two Stage Implementation. Michigan DOT staff took deep, uncertain breaths and made this higher volume road conversion in two safe, evaluative steps. As Michigan DOT resurfaced Grand River Boulevard, they wanted the option of going back to four lanes if the "experiment" didn't work. They painted new lane markings, using two-lanes, plus center turn lane (TWLTL). They omitted bike lanes in the first stage. Some drainage grates needed to be swapped before they added bike lanes. But they also wanted the chance to switch back. The conversion worked, but it was slightly shaky. With the loss of two lanes on the departure side of signalized intersections, traffic now merged into orderly, lower paced movement. Speeds came down to more preferred speed of around 35 mph (down from 40). Yet, some confusion remained. Resulting travel lanes were sixteen feet wide. Second stage markings were made six months later. Bike lanes were added, narrowing travel lanes to twelve feet. Speeds were reduced slightly more, and confusion ended. Today planners and engineers from both city and state report greater safety, efficiency, and more than adequate movement during peak hours. Again, people walking, using transit and bicycling find the area more comfortable and safe. Crash records are being kept. Potential conflicts and speeds are greatly reduced. Property owners are pleased with reduced speeding, noise and challenge of entering and exiting their driveways safely. Bike lanes give them more turning radius and improved sight triangles.

Today East Lansing is in the early stages of converting two to six more roadways. They find that they can make many of these conversions at no cost. They wait for lane markings to fade (easy with winter snow plow scraping), or they make changes with resurfacing projects.

Other Cities, Higher Numbers. East Lansing is not the first community to make these changes. Seattle, Portland and Santa Monica are three communities that have been making these lane

High Volume Conversion in Kirkland



For a short period during area road construction, Kirkland's Lake Washington Boulevard picked up additional load and was successfully carrying 30,000 ADT. This four-lane to three-lane conversion has been very successful. Note how much easier it is for motorists to enter and exit driveway., Added border width provides motorists safer conditions. Caution, this 30,000 figure is real for one portion of this roadway, but may be beyond the comfort range of many. For a more comfortable number 20-23,000 is achievable in most areas.

reductions for years. Seattle made its first conversion (N 45th Street in 1972. Since then they have successfully converted 8 additional roadways. Many of these include commercial sections.

Kirkland, Washington, Pushes Numbers to the Limit. So far, the record for roadway conversion with highest traffic counts is Lake Washington Boulevard in Kirkland, Washington. This largely residential street travels by high priced homes with spectacular views of Lake Washington. When Lake Washington Boulevard was operated with four lanes, capacity problems were reached most evenings. Residents trying to enter or exit driveways on both sides of the road tended to constrain the flow on the 20,000 AADT roadway. Switching to three-lanes on the roadway was easy. The results were impressive not only to drivers, but to pedestrians, transit users and bicyclists as well. Motorists now had substantial added border width to fixed objects. Residents saw reduction in speeding and noise levels, and they could now enter and exit their driveways much more easily.

Kirkland Tests Ceiling with Lake Washington Boulevard. In 1995, Kirkland closed another roadway for reconstruction. They forced totals of 30,000 vehicles (ADT) onto the two + TWLTL roadway. The roadway never crashed. These extremely high numbers continue to astound researchers. What is the upper limit? This 30,000 ADT may be it. In most cases carrying capacity numbers must be lower.

Researchers do not have enough knowledge to say where and how peaks are reached, but many feel comfortable with 20-23,000 ADT's. Each community must set its own upper limits.

Four-Lane to Two-Lane Conversions. More aggressive diets drop four lanes down to two. Fewer roadways can undergo this more aggressive conversion. Roadway conversions in Toronto, Ontario, are proving safety and livability benefits of these changes, while holding to previous capacities. More than six formerly four-lane roadways have been converted to either two-lane roads with medians and turning pockets, or simply two lanes. St. George Street, a principal arterial through the University of Toronto Campus is perhaps the best known. This 16,000 ADT roadway owes its success to low number of driveways. The roadway holds its full capacity at intersections by keeping the previous number of storage lanes. The 1.1 mile roadway project was launched when a local benefactor to the University of Toronto challenged the city to the improvement by putting up her \$1 million in match money. The University contributed \$500,000 (Canadian), and the City of Toronto gave the additional \$2.5 million match for a total rebuild price of \$4 million. The road was totally reconstructed. New foundations, improved intersections, greatly widened sidewalks, bike lanes and full canopy of

St. George Street in Toronto, Ontario



(Right and Above) In 1997 this one-mile section of St. George Street was converted from four lanes to two lanes at a cost of \$4 M Canadian. The roadway carries the same capacity as before. Note capacity is well handled at each intersection. The project began when a benefactor to the University of Toronto pledged \$1M on the condition that the University and City would contribute the balance of \$3 million.

trees were placed. Today walking, transit and bicycling are pleasurable activities; speeding has dropped, and the center of campus has come alive with people.

Other Four-Lane to Two-Lane Conversions. Toronto has also converted five other roadways. In each case the same volume of auto traffic is serviced, always at lower, more appropriate speeds. As with four-lane to three-lane conversions, prudent drivers set the speed. Many of these additional roadways operate with 11-17,000 ADT. Some sections are reduced from four lanes to two lanes to incorporate critical pedestrian crossings; then they widened back out 1,000 feet further downstream. Many combinations of road diet techniques are practicable. Seattle, Washington; Portland, Oregon; Santa Monica and Mountain View, California; and dozens of other cities are making similar conversions. These streets are made more business, resident, transit, bicycle and pedestrian friendly by placing medians with turning pockets and bike lanes in the mix.

What is the future? In the past two years the principle author of this article, Walkable Communities Director, Dan Burden, has been to more than 500 cities in North America. Almost every town he visits has at least two or three streets ideal for conversion. In California, alone, more than 20 cities have made successful conversions. Dan's advice, "Elected officials, business leaders and engineers should look for easy conversions first." All but the most self-evident projects are likely to generate concern from business leaders and nearby residents who worry that traffic might back into their neighborhood streets. The public has come to believe that the only way to improve roadways is to widen entire sections. Model projects are needed.

Best Model Projects. First projects should include roadways with some of the following criteria:

- Ö Moderate volumes (8-15,000 ADT)
- Ö Roads with safety issues
- Ö Transit corridors
- Ö Popular or essential bicycle routes/links
- Ö Commercial reinvestment areas
- Ö Economic enterprise zones
- Ö Historic streets
- Ö Scenic roads
- Ö Entertainment districts
- Ö Main streets

The Process of Change. Street conversions are as much process as they are product. Due to the controversial nature of the first road diet conversions, it is essential to involve the public through highly interactive processes. As pointed out earlier in this article with Electric Avenue in Lewistown, Pennsylvania, 95 percent of the citizens were against the change.



Effective process often includes focus groups, and highly interactive workshops and designs. Citizens, residents and business owners should help design both process and product. Many cities are learning to conduct 3-6 day planning charrettes to gain input from a variety of people who then gain ownership of the results. Atlantic Boulevard in downtown Del Ray Beach, Florida, was converted from four-lane to two-lane roadway at the request of retailers. This request was the reverse of previous thinking. Merchants often feel that more traffic passing their doors is better for business. In Del Ray Beach the decaying downtown forced merchants to take another look. Retailers worked with the city manager, elected officials, and chamber of commerce to weigh their risks and suggest changes. The net result of this street conversion is one of the more successful downtowns in Florida, and significant increase in local sales and tax base for the town. Motorists did not leave Atlantic Boulevard to take advantage of two new lanes of travel on parallel streets. They come through the now attractive center, cruising at 15 mph.

Lane Reductions of Select Street Conversions-- Volume Changes					
Roadway Section	Change	ADT	(Before)	(After)	Notes
1. Lake Washington Blvd., Kirkland, Washington South of 83	4 lanes to 2 + TWLTL + bike lanes	23,000		25,913	
2. Lake Washington Blvd, Kirkland, Washington Near downtown	4 lanes to 2+ TWLTL + bike lanes	11,000		12,610	
3. Electric Avenue, Lewistown, Pennsylvania	4 lanes to 2 + TWLTL + bike lanes	13,000		14,500	
4. Burcham Road, East Lansing, Michigan	4 lanes to 2 + TWLTL + bike lanes	11-14,000		11-14,000	
5. Grand River Boulevard, East Lansing, Michigan	4 lanes to 2 + TWLTL + bike lanes	23,000		23,000	
6. St. George Street, Toronto, Ontario, Canada	4 lanes to 2 + bike lanes + wide sidewalks	15,000		15,000	
7. 120th Avenue, NE Bellevue, Washington	4 lanes to 2 + TWLTL	16,900		16,900	
8. Montana (commecial street) Bellevue, Washington	4 lanes to 2 lanes + TWLTL 4 lanes to 2 + median + bike lanes	18,500		18,500	
9. Main Street Santa Monica, California	4 lanes to 2 lanes + TWLTL 4 lanes to 2 + median + bike lanes	20,000		18,000	

Lane Reductions of Select Street Conversions-- Volume Changes

Roadway Section	Change and Date	ADT (Before)	ADT (After)
9. Danforth Toronto, Ontario, Canada	4 lanes to 2 + bike lanes 4 lanes to 2+ turning pockets+ bike lanes	22,000	22,000
Seattle, Washington			
10. Greenwood Avenue N, from N. 80th St to N 50th	4 lanes to 2, plus TWLTL Plus Bike lanes April, 1995	11,872	11,2427
11. N 45th Street in Wallingford Area Seattle, Washington	4 lanes to 2 lanes plus TWLTL December, 1972	19,421	20,274
12. 8th Ave. NW in Ballard Area Seattle, Washington	4 lanes to 2 lanes plus planted median with turn pockets January, 1994	10,549	11,858
13. Martin Luther King Jr. Way, north of I-90	4 lanes to 2 lanes plus TWLTL, plus bike lanes Jan 1994	12,336	13,161
14. Dexter Avenue, N. East side of Queen Anne Area	4 lanes to 2 lanes plus TWLTL and bike lanes	13,606	14,949
15. 24th Ave. NW, from NW 85th St. to NW 65th St.	4 lanes to 2 lanes plus TWLTL	9,727	9,754
16. Madison St., from 7th Ave. to Broadway	4 lanes to 2 lanes plus TWLTL	16,969	18,075
17. W. Government Way/Gilman Ave. W., from W Ruffner St. to 31st Ave. W.	4 lanes to 2 lanes plus TWLTL plus bike lanes	12,916	14,286

Dan Burden served for sixteen years as state bicycle and pedestrian coordinator for the Florida Department of Transportation. In his new role as the director of Walkable Communities, Inc., Dan has promoted and helped the process for more than a dozen conversions of collector and arterial streets. Dan teaches courses for the Federal Highway Administration, National Highway Institute and the National Highway Traffic Safety Administration. Dan is the author of the Healthy Streets booklet which provides guidelines for building traditional neighborhood development (TND), published by the Local Government Commission, Center for Livable Communities. For more information contact webpage: www.lgc.org/clc/

Peter Lagerwey is the pedestrian/bicycle coordinator for the City of Seattle Engineering Department. Peter has overseen and monitored conversion of four street lane reduction projects. Peter recently spent a full year on assignment as pedestrian/bicycle planner for Perth, Australia. Peter is an instructor for FHWA's Pedestrian Road Show, as well as for a number of state agencies.

Additional Article: See Andrew G. MacBeth, P.E. Calming Arterials in Toronto, paper delivered to the 68th ITE Annual Meeting, August 10, 1998 (Accepted by ITE for 1999 publication in ITE Journal)

Data on Street Conversions - Seattle, Washington

ROADWAY SECTION	DATE CHANGE	ADT (BEFORE)	ADT (AFTER)	CHANGE
Greenwood Ave. N, from N 80th St. to N 50th St.	April 1995	11872	12427	4 lanes to 2 lanes plus TWLTL plus bike lanes
N 45th Street in Wallingford Area	December 1972	19421	20274	4 lanes to 2 lanes plus TWLTL
8th Ave. NW in Ballard Area	January 1994	10549	11858	4 lanes to 2 lanes plus planted median with turn pockets as needed
Martin Luther King Jr. Way , north of I-90	January 1994	12336	13161	4 lanes to 2 lanes plus TWLTL plus bike lanes
Dexter Ave. N, East side of Queen Anne Area	June 1991	13606	14949	4 lanes to 2 lanes plus TWLTL plus bike lanes
24th Ave. NW, from NW 85th St. to NW 65th St.	October 1995	9727	9754	4 lanes to 2 lanes plus TWLTL
Madison St., from 7th Ave. to Broadway	July 1994	16969	18075	4 lanes to 2 lanes plus TWLTL
W Government Way/Gilman Ave. W, from W Ruffner St. to 31st Ave. W	June 1991	12916	14286	4 lanes to 2 lanes plus TWLTL plus bike lanes
12th Ave., from Yesler Way to John St.	March 1995	11751	12557	4 lanes to 2 lanes plus TWLTL plus bike lanes

			CAR & CAR		Subtotal			Subtotal	CAR & PED		Subtotal	Total	% Change	FATAL		Total	INJURIES		Total	% Change
			I	M-B		I	M-B		I	M-B				I	M-B		I	M-B		
1	Greenwood Ave N & N 80 Street	BEFORE	19	5	24	0	0	0	0	0	0	24	-58.3	0	0	0	10	5	15	-20.0
		AFTER	5	4	9	0	1	1	0	0	0	10		0	0	0	6	6	12	
2	N 45 Street & Wallingford Av N	BEFORE	6	37	43	0	0	0	1	1	2	45	-48.9	0	1	1	2	5	7	+14.3
		AFTER	11	12	23	0	0	0	0	0	0	23		0	0	0	3	5	8	
3	8 Ave NW & NW 65 Street	BEFORE	8	7	15	2	0	2	0	1	1	18	-61.1	0	0	0	6	2	8	-37.5
		AFTER	5	1	6	0	0	0	1	0	1	7		0	0	0	4	1	5	
4	ML King Jr Wy & Yesler Way	BEFORE	8	7	15	0	0	0	0	0	0	15	-60.0	0	0	0	4	6	10	-80.0
		AFTER	4	2	6	0	0	0	0	0	0	6		0	0	0	2	0	2	
5	Dexter Ave N & Roy Street	BEFORE	12	4	16	1	0	1	2	0	2	19	-15.8	0	1	1	6	1	7	+114.3
		AFTER	9	7	16	0	0	0	0	0	0	16		0	0	0	6	9	15	
6	24 Ave NW & NW 80 Street	BEFORE	11	3	14	0	0	0	0	0	0	14	-28.6	0	0	0	9	1	10	+60.0
		AFTER	5	4	9	0	0	0	1	0	1	10		0	0	0	10	6	16	
7	Madison Street & Boren Avenue	BEFORE	12	15	27	0	0	0	0	1	1	28	0	0	0	0	9	7	16	-37.5
		AFTER	9	18	27	0	0	0	1	0	1	28		0	0	0	5	5	10	
8	Gilman Ave W & W Emerson Pl	BEFORE	5	1	6	0	0	0	0	0	0	6	0	0	0	0	0	2	2	-100.0
		AFTER	3	3	6	0	0	0	0	0	0	6		0	0	0	0	0	0	
9	12 Avenue & Cherry Street	BEFORE	5	8	13	1	0	1	2	0	2	16	0	0	0	0	5	1	6	+16.7
		AFTER	4	11	15	1	0	1	0	0	0	16		0	0	0	3	4	7	
	TOTAL	BEFORE	86	87	173	4	0	4	5	3	8	185	-34.1	0	2	2	51	30	81	-7.4
		AFTER	55	62	117	1	1	2	3	0	3	122		0	0	0	39	36	75	

*LEGEND: I = Intersection
M-B = Mid-Block

Additional Road Diets Experiences

Santa Barbara

Over a decade ago, the City of Santa Barbara created bike lanes on two parallel one-way streets by removing one of the two existing traffic lanes. The City's original proposal was to remove parking from one side to keep two traffic lanes plus put in a bike lane. But since the streets are mostly residential, the people pressured the City to keep parking and lose a traffic lane instead. Just about everybody thinks that it's a good solution.

In the next two months, another street will change from 4 traffic lanes to three (middle turn lane) plus bike lanes on both sides.

Ralph Fertig
Santa Barbara Bicycle Coalition
www.sbbike.org

Palo Alto

Palo Alto did so on two streets (University Ave. & East Meadow Drive) in 1974 as part of its overall bikeways plan. Since then Mountain View has done so on at least two streets, and just recently Sunnyvale has approved doing so on part of Mathilda.

Ellen Fletcher

Sacramento

In Sacramento, on Auburn Boulevard, the city installed a bike lane by taking out on-street parking. After a few months of this, the businesses howled. The City Council decided that the viability of the businesses were more important, so they took the bike lane back out and put the parking back in.

This didn't happen that easily, though, since I put the question to the traffic engineers about taking the travel lane space and give it to bikeway space. We were lucky this time, since there were two travel lanes one direction and one travel lane going the other. When we challenged the staff to find out if they could shift the center line over so that it was one travel lane in each direction, they answered that, yes, indeed this was a possibility. So they did it, and we got our bike lanes back and the businesses had their parking! My only complaint was the time it took to get the final product. It took them less than a week to re-establish the on street parking, and over a year to re-adjust the lane striping. So, in a round-about way, we did get a travel lane removed for the installation of a bike lane. But it was with a lot of luck that this happened. It isn't that common to find a spare travel lane that has a low enough ADT to let the traffic engineers feel like giving it over to the bicycles. This incident is unusual for Sacramento, so I wouldn't necessarily consider it to be the result of progressive thinking--they still need some help in that department.

Ed Cox
edcox@jps.net

Santa Cruz

Santa Cruz has proposed reducing Soquel Avenue from 4 lanes to 3 (two plus turn lane) in order to install bike lanes, but has not yet done so.

Cambridge

A portion of Massachusetts Avenue, the main drag of Cambridge, MA (also a state numbered route) was redesigned, going from 4 lanes to 3, allowing not only bicycle lanes but also wider sidewalks and maintaining parking. ADT is approx. 21,000. There are a couple of turning lanes. The project was completed about a year ago.

Cara Seiderman
City of Cambridge, MA

Mountain View and Sunnyvale

1) A few years ago Mountain View, CA restriped the section of Dana Street from Calderon to Pioneer (across Highway 85, the Stevens Creek Freeway), from 2 lanes each direction to 1 lane + bike lane in each direction, adding a planted median. Contact rene.dalton@ci.mtnview.ca.us, their BAC staffer, for details.

2) Mountain View also restriped Cuesta (Drive?) west of Miramonte from 4 lanes down to 3 (i.e. center turn) with bike lanes. This was done during a sewer line upgrade that required tearing up that whole stretch anyway. That end of Cuesta abuts neighboring Los Altos, which never did 4-lane their collector streets back when Silicon Valley was rapidly building out its street network; I believe that stretch of Cuesta didn't really need 4-lane capacity anyway.

3) Sunnyvale, CA just decided to restripe Mary Avenue between Fremont Avenue and Homestead Road to add bike lanes. I don't know the details on before and after lane counts on that stretch, but believe it's currently 2 lanes with on-street parking and a center 2-way left turn lane. Contact pubworks@ci.sunnyvale.ca.us or BAC staffer Jack Witthaus <jwitthaus@ci.sunnyvale.ca.us>.

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Greenbelt, MD

Glad you asked. The City of Greenbelt, MD eliminated two traffic lanes on Ivy Lane and Cherrywood Lane to make room for bicycle lanes to the new Greenbelt Metro Station. The objectives were to (1) improve bicycle access to the Metro Station (2) to calm traffic (3) to improve aesthetics and (4) to provide a median area for pedestrians crossing the road. We are very happy with the results. Eventually, we plan to landscape the median. The plans caused a tremendous uproar in 1996. The City received letters and complaints from the County Executive, the Governor and our Congressman. They called Cherrywood Lane crucial to development plans near the Greenbelt Metro Station.

The configuration was 12'-12'-12'-12'-12' narrowing to 12'-12' 12'-12' at an overpass. The configuration today is 8'-6'-11'-18'median-11'-6' narrowing to 6'-11'-14'median-11'-6' at the overpass. The 8' lane is a parking lane. The 6' lanes are marked and signed as bike lanes.

Greenbelt has a 60 year tradition of innovative planning and of making bicycle and pedestrian access a priority. Our City Council loves to talk about Greenbelt's bike lanes.

Bill Clarke
Chairman, Greenbelt Bicycle Coalition

Austin, TX

To date we have removed travel lanes from two streets to make bike lanes. These streets were operating below capacity as striped and we could demonstrate that the level of service would be acceptable after the changes. There has been serious opposition to one near a federal IRS/Treasury/Veteran's complex. The administrators were convinced that the roadway with bike lanes would make their lives miserable due to increased congestion. They continue to pressure the department and City Council so the final outcome is uncertain at this time.

We are considering several other streets to remove travel lanes in favor of bike lanes, but it will take some time to go through the political process to get this done.

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Road Diets by Dan Burden and Peter Lagerwey

Ottawa

We have a project in Ottawa where a bridge is being reconstructed. The original cross-section included two HOV (buses only) lanes and four car lanes (2 in each direction). The new cross-section includes two HOV (buses only) in the outside lanes, then two car lanes and two bicycle lanes (one in each direction). A median was also added. In essence, two car lanes were given over to bicycle lanes and a median. The bridge opens this spring

- we can hardly wait!

Daphne Hope

Alternative Transportation Planner

Denver

In Denver, we are removing 2 lanes of traffic on a collector street for approximately 2000' alongside a city golf course so that we can build a 12' wide bikeway/multi use trail alongside the golf course frontage. The lanes on the street were very narrow (10' wide I think) and the center turn lane served little purpose. The bike route that we will sign runs the full width of the city - this was the major missing link. The process to do this was NOT FUN.

James MacKay

Boulder

Last year, after significant public process, the City of Boulder also removed a traffic lane to add a bike climbing lane on Table Mesa Drive. The roadway was built in a era of different development expectations, and traffic counts indicated that this could easily be done. However there was still significant public concern, which was in part addressed by first doing a trial run where we blocked the lane with barricades for three weeks and collected data, and then by selecting a non-structural project design where the changes were made by paint rather than moving the curb face. This addition links several significant bike facilities and is working great.

Randall Rutsch

Transportation Planner

City of Boulder, CO

Salem, OR

The city of Salem, Oregon reconfigured 4 lanes to two lanes plus center turn lane and bike lanes on 17th Street and possible others.

Michael Moule

Oregon Department of Transportation

Bend, Oregon

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<http://www.odot.state.or.us/techserv/bikewalk/index.htm>

Portland & Corvallis

The cities of Corvallis and Portland removed a travel lane from one-way couplets that had 4 lanes in each direction (they now have 3). On top of bike lanes, motorists benefit from the reduced need to weave (getting from one side to the other in anticipation of having to turn left or right), and pedestrians benefit from easier crossing (Portland reduced pavement width and widened sidewalks and built curb extensions at sidewalks). ODOT bi- cycle and pedestrian program was instrumental in preventing a couplet project from going to four lanes in one direction, and keeping at 3 (Albany). So it's not uncommon. Seattle does it for traffic-calming.

Michael Ronkin
Bicycle and Pedestrian Program Manager
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London, UK

I think it has been done here in London, England. For example, the London Borough of Ealing, has, I believe, removed some car lanes on the Uxbridge Road, the A4020, that heads west out of London, adding bike lanes instead. The current cry by bike activists here in England is 'reallocating road space' How much it is actually being done, though, I do not know. Bike lanes are somewhat new here in England, and all the fiascoes of a quarter a century ago in the USA seem to be being repeated here

JeremyParker@compuserve.com
London, England

Toronto

In Toronto, we have removed traffic lanes on approximately 18 km (12 miles) of downtown streets (eight different streets) to provide bike lanes. These routes represent about two thirds of our existing bike lanes.

Typical downtown arterial widths are 12.8 to 14.0 meters wide and striped as four lane two way roads with both curb lanes accommodating parking in the off-peak hours. During peak hours parking is generally prohibited on both sides so the roads operate as four lane roads.

To incorporate bike lanes on a road 12.8 meters (42 feet) wide we permit 24-hour parking on one side (2.0 meters wide) , provide a bike lane (2.0 meters) next to parking, two general traffic lanes (3.5 meters) and a bike lane next to the curb (1.8 meters). Left turn lanes are provided at signalized intersections to maintain capacity. The length of the left turn slot is determined by the left turn demand, with a typical length being 15 meters. Curbside parking stops in advance of the intersection to accommodate the additional lane required for left turns and to make the transition between a bike lane adjacent to parking and a bike lane next to the curb. It is a fine balance because the longer the left turn slot the less parking we can provide. Parking is definitely the most politically sensitive issue when implementing bike lanes.

To incorporate a bike lane on a road 14.0 meters (46 feet) wide we permit 24-hour parking on both sides (2.0 meters wide), provide two bike lanes (1.8 meters) next to parking and two general traffic lanes (3.2 meters). Again, left turn lanes are provided at signalized intersections to maintain capacity.

Based on our experience in the past few years we have concluded that the two above designs can work well on roads with up to approx. 18,000 vehicles per day.

We have also provided bike lanes through three railway underpasses by, in each case, eliminating two general traffic lanes (from four to two lanes -one in each direction) in order to provide two bike lanes. One of these carried 22,000 vehicles per day.

On another 1.6 km stretch of roadway (55,000 vehicles per day) we reduced six general traffic lanes to five lanes to accommodate two bike lanes over a bridge connecting east end neighborhoods to the Central Area. Bicycle volumes on this route increased to approximately 3,000 bicycles per summer weekday; weekday average throughout the year is 1,800 bicycles per day). In another case we reduced a six lane road with 30,000 vehicles per day to four general traffic lanes (five at signalized intersections) to accommodate bicycle lanes in each direction.

Greater Vancouver's experience:

"In the Greater Vancouver Region, two municipalities have removed a traffic lane for bikes. The City of Surrey along their East Whalley Ring Road and the City of Richmond along Williams Road. In both instances, four lanes of traffic (two in each direction) were reduced to three lanes to provide bike lanes. The third middle lane functions as a left turn lane for both directions of traffic. I can give contacts if anyone wants more details.

Doug Louie, P.Eng.
City of Vancouver."

Appendix H:

Table of Suggestions/Comments for Consideration

Pedestrian and Circulation Plan Suggestions/Comments for Consideration

	Suggestion/Comment	Staff Response
1	Create a pedestrian mall on North Main Street (ban cars on some blocks).	Could be included in the Policy Recommendation Section (8.2.4). Staff feels closure of Main Street to automobiles is unfeasible at this time considering uses on Main Street. Possibly add policy recommendation that Streets be considered for temporary closure to motor vehicles for special events such as farmers markets, festivals, etc.
2	Institute a wheel-tax, which could offset some of the expenses of bicycle/pedestrian facility installation.	Policy Recommendation Section (8.2.4) and Funding Opportunity Section (8.5) addition. This would be a potential funding source that staff feels could be added as a policy to consider.
3	Institute a bike-sharing program sponsored by the City, possibly supplied with Police confiscated / unclaimed bikes.	Could be included in the Education, Encouragement and Outreach Section (8.2.1). Staff feels that this program would be an encouragement to biking, especially for those who do not own bikes or are visitors to the area. However there is a high cost associated with the program. They have been instituted in other communities/areas with mixed results ranging from failure in that the bikes are often stolen/destroyed to success in that they promote tourism bicycle travel. Staff believes that if the program is designed right and managed properly, it could work for Oshkosh.
4	Add a definition of "Shareway" (a shared roadway) in definition section.	A shareway, as referenced in the plan, is the same as a shared roadway and the definition should be added to the Definition of Terms Section (2.3).
5	Change image of the Sharrow to better reflect the intended design and function.	The current image associated with the explanation of the sharrow in the Best Facilities Section (6.2.2) is misleading in that it shows both car and bicycle traveling next to each other. Staff agrees the image should be replaced with one that better reflects the function of a sharrow in that the travel lane is used either for an automobile <u>or</u> a bicycle but not both at one time.

Pedestrian and Circulation Plan Suggestions/Comments for Consideration

6	Add a WIOUSASH trail trailhead at Steiger Park with Ho-Chunk dedicating/naming it	The plan does not go into such detail as recommending individual trailheads at specific location but does recommend in the Program Priorities Section (8.3.2) to “incorporate best facility practices within the design and construction of all street and trail segments” as well as in the Policy Recommendations (8.2.4) under item 9 which recommends the “increase of multimodal transportation options by employing the use of items such as racks on buses, at park-and-rides, public parking lots and trail heads”. If it is felt to be important to further emphasize the use of trail heads, staff recommends a new policy recommendation be added to the Policy Recommendations Section (8.2.4) specifically promoting the installation of trail heads at parks and other public facilities, where feasible.
7	Remove the Overpasses from the 5 year priority maps or include as a 5 year priority project	The Pedestrian Overpass symbolization was inadvertently included in the 5 year Priority Facility Improvement Map in Appendix F. Though the Steering group felt the overpasses are important and needed to be included in the Recommended Bicycle Route/Improvement Maps in Appendix E, it was not intended to be included in the 5 year installation plan based on the extremely high cost of engineering and construction as well as the political feasibility of getting such a facility improvement approved and funded by controlling jurisdictions in such a short timeframe. Staff recommends removing the recommendations from the 5 year Priority Facility Improvement Map.
8	Add pushbutton pedestrian crossing signals at roundabouts including audible messages for the visually impaired.	Specific facility design recommendations for roundabouts are located in the Bicycle Facilities Section (6.2.2) under Additional Bicycle Facility Considerations-Roundabouts. It is true that roundabouts are not extremely friendly to bicycle and pedestrian movement. They are even more problematic for the visually impaired as the typical sounds associated with a traffic controlled crossing are not present and the flow of traffic is generally continuous and the noise associated with moving vehicles does not stop so as to provide an audible break in the sound of vehicles signifying that the crossing is clear. Staff recommends the inclusion of pushbutton pedestrian crossing signals with audible messages/sound in the Bicycle Facilities Section (6.2.2) under Additional Bicycle Facility Considerations-Roundabouts.

Pedestrian and Circulation Plan Suggestions/Comments for Consideration

9	Have the make-up of the Pedestrian and Bicycle Commission include members of other related commissions such as the Sustainability Board, Plan Commission, Traffic Review, etc. rather than citizens-at-large	The plan recommends that the Bicycle and Pedestrian Commission be made up of 7 members - 1 Council representative and 6 citizen members with interest in bicycling and walking. While it would be advantageous to require representatives from related commissions/boards the Stakeholder/Steering Group felt that it could force membership by individuals that may not truly have interest or knowledge of pedestrian and bicycle issues who are serving only because it is required. Additionally, it was thought that the individuals volunteering for the city are already burdened with many hours of volunteer time on their respective commissions/boards and that requiring them to sit on an additional commission may discourage them from participating in any city commission/board at all. That being said, staff does see an advantage to having specific people interested in pedestrian and bicycle issues represented such as members of the Oshkosh Area School District, the Universities, the elderly and disabled community, etc.. If included, we suggest that encouraging those types of individuals rather than requiring them would be more suitable. In the end, it will be up to the discretion of the Mayor and Common Council on which applicants are most suitable and appointed to the Bicycle and Pedestrian Commission.
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