City of Appleton
On-Street Bike Lane Plan

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Schreiber Anderson Associates
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1 INTRODUCTION

The City of Appleton has created this On-Street Bicycle Lane Plan to guide decision-making for facility improvement and installation, education programming, and funding acquisition. It is also being prepared to recommend appropriate facilities types and locations to enhance the existing transportation network for bicyclists in the City of Appleton. The plan will prioritize and determine a project timeline for implementation of improvements over the next 20 years.

Majority funding for this plan was provided by a successful Bicycle & Pedestrian Facilities Program (BPFP) grant through the Wisconsin Department of Transportation.

This chapter sets a framework for bicycle facilities development, discusses the public process and preferred routes, and details the results of a bicycle audit of the community.

1.1 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 a larger portion of the population, bicycling and walking gradually dropped in priority. 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 some types of trips. The benefits of alternative modes of travel such as bicycling and walking are particularly significant for short urban trips. The arguments for encouraging these modes of travel are both functional and philosophical:

a. Bicycling and walking are two of the most cost efficient modes of transportation with regard to operation, development and maintenance of facilities.

b. Bicycling and walking are two of the best forms of physical exercise and therefore can effectively enhance the health of the user.

c. Bike and pedestrian facilities developed for transportation purposes can simultaneously enhance recreation and tourism opportunities.

d. National, state and local units of government increasingly acknowledge the benefits of bicycling and walking beyond merely recreational values. Recognizing the efficiency

of bicycling and walking for certain types of trips among the other modes of travel is the basis for multi-modal transportation planning.

e. Bicycling and walking do not contribute to noise or air pollution and thus contribute to the health of the community. Off-road facilities developed for bicycling and walking can protect and enhance natural resources.

f. 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 society as a whole. More than 49% of Wisconsin residents engage in bicycling for recreation, according to the 2005-2010 Wisconsin Statewide Comprehensive Outdoor Recreation Plan (WDNR, 2006). Converting a portion of these recreation bicyclists to commuting cyclists is a primary goal of this plan.

Local investments in bicycling can lead to a large economic impact. A January 2010 study[1] indicates the annual economic impact of bicycle recreation and tourism in Wisconsin to be over $920M. In addition, development of bicycle facilities can have a positive effect on real estate values. A 1998 study found that lots adjacent to the Mountain-Bay Trail in Brown County sold faster and for an average of 9% more than similar property not located next the Trail.

Statewide, bicycling and walking have been promoted through a variety of plans, including the latest multimodal planning document, *Connections 2030*. The Connections plan calls for bicycle and pedestrian provisions on state highway projects, inclusion in the Metropolitan Planning Organization's (MPO) plans and also recommends continued investment through dedicated funding programs such as Transportation Enhancements. Biking and walking will continue to be vital components of Wisconsin's multimodal transportation system.

Bicycling is an underutilized mode of transportation in Appleton. While the majority of city residents reported a travel time to work of just over 16 minutes in 2000, very few chose to commute by bicycle (<1%). The relatively small number of bicycling trips can be attributed to traffic conditions, safety concerns, distance, and to some extent weather. This plan is designed to increase levels of bicycle use by removing barriers to cycling and by changing the prevailing attitude that using an automobile is easier and more convenient than bicycling.

1.2 Public Process

Development of this plan was administered by City staff with oversight from a Stakeholders Group and the Municipal Services Committee. The plan was prepared by Schreiber|Anderson Associates, Madison, Wisconsin.

The planning process began with an inventory of conditions including historical data, field observations (conducted by traveling the planning area), research of local and county planning

[1] Grabow, Hahn, and Whited. Valuing Bicycling's Economic and Health Impacts in Wisconsin. The Nelson Institute for Environmental Studies. January 2010.

documents and meetings with the public and government agency staff. Planning and design criteria derived from Wisconsin Bicycle Facility Design Handbook, AASHTO Guidelines for Developing Bicycle Facilities, and The Manual for Uniform Traffic Control Devices (2009 Edition) were used as general analysis criteria.

The following sections describe the public process used to generate the content and recommendations contained within this plan.

1.2.1 City Staff

In 2005, the Bicycle and Healthy Lifestyles Group set out to create a more bicycle friendly Appleton. Key initiatives included adding bike racks to downtown and on buses, working with local bike clubs and schools, and fundraising. City staff and community advocates promoted the idea of a bicycle master plan in 2006. The plan received funding in 2008 through a WisDOT Bicycle and Pedestrian Facilities Program (BPFP) grant.

For this plan, the Department of Public Works has provided direct oversight on plan progress and published all meeting notices, assembled the Stakeholder Committee and reviewed all work products.

1.2.2 Stakeholders Group

The City of Appleton assembled the Stakeholder's Group to represent a broad cross-section of interests and user groups. This group was the public review authority for the working draft and met three times to discuss progress and provide direction and feedback on plan recommendations. The group contains representatives from the following committees or organizations:

- City of Appleton Police Department
- City of Appleton Trails Advisory Committee
- WisDOT
- Appleton Area School district
- Appleton Papers Activate Fox Cities Group
- Fox Cities Greenways
- ECWRPC
- City of Appleton Valley Transit
- City of Appleton Engineering Department
- City of Appleton Municipal Services Committee
- Appleton Bicycle & Fitness
- City of Appleton Department of Community Development

1.2.3 Municipal Services Committee

The Municipal Services Committee was utilized as an oversight committee to review plan elements and monitor plan progress. The draft plan was presented to the Committee before being sent to the Common Council for approval.

1.2.4 Public Information Meeting

There was one public information meeting held during the process. Details and outcomes for this meeting are listed on the following page.

Public Information Meeting #1

The purpose of this meeting was to discuss results of the planning and public information process, to obtain feedback on the proposed bicycle route maps, and to generate a downtown routes map. The meeting also provided a venue for discussion and interaction of bicycling advocates.

This memo concerns the first of these two meetings, the public information meeting. There will also be a public meeting held before the Municipal Services Committee when the plan is in draft form.

The meeting was held April 27, 2010 in Room 6A of City Center and was publicly noticed. The meeting was attended by approximately seventy (70) individuals including members of the local news media (print, radio, and television) who summarized meeting events and preliminary recommendations in articles and newscasts.

Outcomes included comments on display maps (primarily the "Proposed Bicycle Routes Maps" 4A, 4B, 4C) and generation of some downtown bicycle routes. A worksheet that was administered also revealed primary hopes and concerns for the planning effort. Results are shown in Table 1.

Table 1: Hopes and Concerns

Hopes	Concerns
Painted lanes to reserve space for bikes	Group rides that do not observe lawful behavior
Educate both drivers and cyclists	Roudabouts can be an impediment
Make Appleton more attractive for creative class	Not involving schools
Multimedia campaign to encourage and educate cyclists	Wisconsin Ave will not have bike lanes
Prioritize routes (signs up ASAP)	Not enough secure bike parking
Increase sweeping and maintenance programs	Need for a good public relations campaign to educate and inform drivers and cyclists
Appleton will invest resources in a bicycling program	Additional costs may be unpopular
Consistency from city officials on bicycle policy	Downtown is hard to access via bicycle, too much traffic, and not enough bike parking
Safety is always the primary consideration for adding bike lanes	Bike lanes will be used by cars for parking or unloading
Engage "Type B" cyclist through facilities development and encouragement activities	Snow and debris will collect in bike lanes
Frequent sweeping of bike lanes (esp. College Avenue Bridge)	Will take too long to implement changes; advocacy fatigue
Better engage volunteer organizations for fund raising and programming	
Better access to College Avenue	
Need some "quick win" projects	
Traffic calming	

1.3 Stakeholder Routes

During the first meeting of the Stakeholders Group a map was developed with meeting attendees to identify primary origins and destinations for bicyclists. See Maps 1 and 1A (Appendix A). In addition, members of the committee offered their preferred routes and identified road segments that currently accommodated bicycles. They also identified impediments, or places in the network that offered a low level of comfort for bicycling. See Map 2: Bicycling Routes Identified by Stakeholders (Appendix B).

1.3.1 Appleton Trails Advisory Committee Routes

The Trails Advisory Committee developed a preferred bicycle routes map that was used to populate the stakeholder committee routes with a series of east/west and north/south street segments. The map was generated with the understanding that not all streets in city are suitable for bicycle travel. The Trails Advisory Committee routes are shown as blue lines on Map 2.

1.3.2 Activate Fox Cities Proposed Bike Route

The Corridors and Connectivity Committee of Activate Fox Cities has been working with representatives of the cities of Appleton, Menasha and Neenah, the town of Menasha and Fox Cities Greenways to determine a safe and practical bicycle/pedestrian transportation corridor connecting the four municipalities.

The conceptual route extends from the existing bike facilities at First Street and STH 114 in Neenah on the south to the intersection of Valley Road and STH 47 (Memorial Drive) in Appleton on the north. The proposed route is shown as a blue and pink line on Map 2.

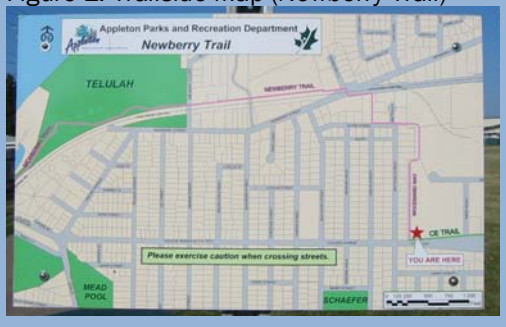
1.3.3 Stakeholders Group Routes

The committee reviewed three sub-area maps that divided Appleton into smaller geographic areas. The maps contained preliminary recommendations for on-street bicycle accommodation based on existing city data. The committee reviewed the maps and identified additional routes that provided easy access to key destinations. Major activity generators such as major employment centers, parks, and schools, were also identified on the maps as were difficult intersections and other barriers that impeded safe bicycle transportation. See Map 2. The routes identified were tested using a combination of bicycle and "windshield" field review.

1.3.4 Existing Off-Road Network

While not the focus of this planning document, off-road paths throughout Appleton provide necessary connections between neighborhoods and recreation, commercial, and institutional destinations. Primary path connections on N Ballard Rd and N Meade St provide direct connections over USH 41. There is also an extensive path network north of USH 41, another south of the Fox River (Newberry Trail; see Figure 1), and a major intercommunity connection along E College Avenue (CE Trail).

Figure 1: Trailside Map (Newberry Trail)



1.4 Bicycling Audit (Fall 2009)

SAA audited the city of Appleton for bicycle friendliness on November 10, 2010. The audit process involved testing each of the route segments proposed by stakeholders. Due to time constraints, a portion of the audit (mostly north Appleton) was performed via "windshield survey" (in car) while most of the southern portion and downtown was audited on bicycle. The purpose of the audit was to identify which corridors provided the highest subjective level of appropriateness for bicycle travel. The results were recorded on a series of maps (Map 3A, 3B, and 3C: Opportunities and Constraints). See Appendix C.

1.4.1 Legend Description

The legend on each sub-area map differs depending on the conditions present in any one area. For example, where a special condition exists, such as the striped curb lane extending through a right-turn lane on S Oneida St south of W Lawrence, this area was identified with a symbol or text box to identify there exists an impediment to safe bicycle travel. General legend items include the following:

a. Bicycle/Automobile Conflict Area – the intersection configuration creates a low level of bicyclist comfort. This may be due to added turn lanes, traffic volume, short signal phases, irregular intersections (especially along Badger Ave), or other conditions.
b. Improve Trail Connection – the trail terminates at a roadway but does not provide clear direction for how users should transition from one facility to another. There may also be curbs or other hazards present.
c. Could add bike lane now (where wide enough) – the roadway segment appeared wide enough to accommodate side-by-side travel of an automobile and a bicycle in the travel lane.
d. Should add bike lane (requires improvement) – a bicycle lane is the preferred treatment for bicycle accommodation but the roadway segment does not appear wide enough to accommodate the facility due to a number of factors which may include the presence of on-street parking, or a narrow road face curb-to-curb.
e. Explore adding shared lane marking – the roadway has value because it provides a valuable linkage but is probably too narrow or does not carry enough traffic to install bike lanes. The roadway may benefit from a pavement marking alerting road users to the presence of cyclists. A shared lane marking (sharrow) may be an option.
f. Bike Route (would work as is) – a valuable bicycle linkage that accommodates automobiles and bicycles adequately in its current design.
g. Should add paved shoulder – on roadways that do not include an urban cross section (curb and gutter) but bicycle accommodation is desirable, a paved shoulder should be installed. The decision to install a wide shoulder may be impacted by the right-of-way restrictions or the desire to upgrade the roadway with curb and gutter in the future.
h. Existing Trail – an off-street shared-use path exists in this location.
i. Proposed Trail – the city of Appleton database used to compile the street network included a layer of proposed trails. Some of these trails may be long-term linkages, while others are in the planning stages for development. Not all trails delineated are located within the city limits.
j. Recommended Study Area (no easy fix to impediments) – areas where the road network has been optimized for automobile travel and it does not appear as though bike lanes or an off-street sidepath would connect easily within the existing design. These areas require additional study to determine the most appropriate bicycle facility.

1.4.2 General Observations

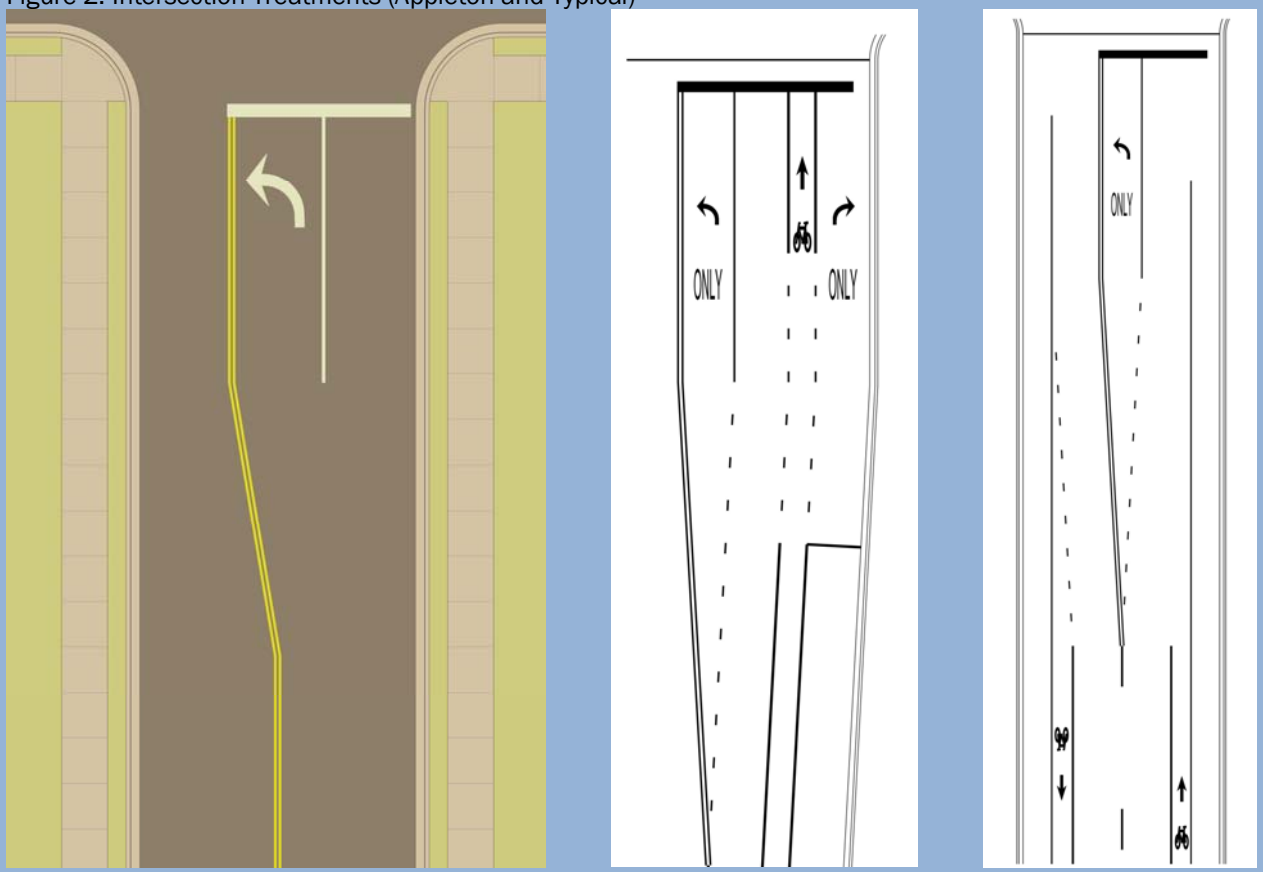
General observations recorded during the audit are listed by topic below.

Squeezing in a turn lane

There are many residential streets that include a turn lane at intersections with arterial streets. This appears to have been accomplished by narrowing the travel lanes and adding a third lane (the turn lane). This precludes installation of a bike lane at intersections. See Figure 2.

As a result, a general policy should be to end bike lanes before the intersection. While not preferred, there are some advantages to doing so, especially if a high number of bicyclists will be executing a turning movement. Two approaches to intersection treatments with bike lanes are shown in Figure 2.

Figure 2: Intersection Treatments (Appleton and Typical)



Left: This is a typical intersection design for a residential street in Appleton. The two travel lanes are narrowed at the intersection to provide room for a turn lane. This design will not accommodate a bike lane.

Middle: The preferred treatment for bicycle lanes is to carry them through to the intersection.

Right: If bike lanes cannot be carried through to the intersection the desired intersection treatment is to end the bike lane before the turn lane begins so that bicyclists can use the lane like an automobile.

Figure 3: S Oneida Street Bridge - Curb Lane

Figure 4: Typical residential street in Appleton

Figure 5: Stencil on College Avenue sidewalk

Bridges

The Fox River divides the city of Appleton and bridges provide vital connections. The S Oneida Street bridge, for example, is a primary route into downtown. While it contains a striped curb lane, it is too narrow to be called a bike lane and includes stormwater grates and other features that decrease the effective travel width (See Figure 3). It does however function like a bike lane, and many cyclists were witnessed riding inside the striped area.

Some bridges are also very old and narrow (S Olde Oneida, S Lawe St) and were not designed to accommodate bicyclists and automobiles side-by-side in one travel lane.

Newer bridges, like the E College Avenue Bridge contains bike lanes on both sides. The challenge will be to continue the bike lanes into the existing street network.

Neighborhood streets are very bikeable

Like most communities, neighborhood streets, or streets that are designed primarily to carry traffic through residential areas to larger collector or arterial streets, function fine for bicycles. Most of these streets carry low levels of automobile traffic at slow speeds. Most of these streets will not require a bicycle facility other than route signage. See Figure 4.

Downtown is a challenge

The predominance of one-way streets, short segments, and volume of traffic make the downtown area (College Avenue) difficult for bicycling. There are also very few bicycle parking racks and bicycles are not allowed to ride on the sidewalk (Figure 5) due to the commercial nature of the corridor and potential for conflicts with pedestrians especially near entrances fronting the sidewalk.

Lack of bike parking

There were very few bicycle racks observed during the audit. Those that were spotted were often mounted incorrectly (Figure 6). There are also

regional destinations, such as the Performing Arts Center, that do not contain bicycle parking at all. Some areas are also underutilized. For example, there appears to be room in the Washington St Parking Ramp to accommodate bicycle parking on the first floor. This would provide covered parking and direct access to the Performing Arts Center (Figure 7).

Bike Route Signs

There are no bike route signs within the city of Appleton. Adjacent communities do have established bike routes (like W Kimberly Ave/E Newberry St) so this plan will need to ensure intercommunity connections and provide clear signage to promote continuous travel to, and through, Appleton.

Reconstruction

Some major roads (N Ballard Rd; S Kensington Drive south of Calumet; Eisenhower Dr) are currently configured to carry motorized traffic (See Figure 8). These roads would require a bicyclist to take the travel lane, and since traffic volume and speeds are high, this is an uncomfortable scenario for most cyclists. Off-street trails may prove effective in some locations but should not be the primary bicycle accommodation because the presence of commercial driveways can create user conflicts and provide a false sense of security for path users. On-street facilities are generally preferred though reconstruction is required for some of these segments (N Ballard Rd). In other areas, such as S Kensington Dr, the identification of parallel routes precludes the need to reconstruct a new street and provides bicycle accommodation in the near-term.

Figure 6: Racks are mounted incorrectly near Houdini Plaza (rotate 45 degrees)

Figure 7: Potential covered bike parking location in Washington St Ramp

Figure 8: S Kensington Dr is an example of a street that may require reconstruction to accommodate bikes.

1.5 Bicycling Level of Service

Bicycle Level of Service (BLOS) is a standard for quantifying the bike-friendliness of a roadway. The level of service rating, used for on-road facilities only, indicates bicyclist level of comfort with specific traffic conditions and roadway geometries. BLOS evaluation can be useful in determining the most appropriate routes, finding priority areas for roadway improvement, and

evaluating the use of alternate traffic control treatments.

The League of Illinois Bicyclists has an online BLOS calculator that was utilized for this report. The BLOS Calculator uses the following data to determine a level of service rating.

- Number of through lanes per direction
- Width (in feet) of outside lane
- Width (in feet) of paved shoulder (state highways only)
- Bi-directional Traffic Volume in AADT
- Posted speed limit in mph
- Percentage of heavy vehicles (see sidebar)
- Pavement condition ratings (PASER and PDI)
- Presence of residential zoning

The results were recorded on a series of maps (Map 4A, 4B, and 4C: Bicycle Level of Service). See Appendix D.

1.4.1 BLOS Calculations

For this analysis, pavement width, traffic volume, number of lanes, speed limits, on-street parking, and pavement rating data were all obtained using Appleton data. The Appleton pavement rating data was provided on a scale of 1-10 and required modification in order to be used in the BLOS calculator, which uses a scale of 1-5. The percentage of heavy vehicles was assumed to be 2% (the BLOS calculator default).

The BLOS calculator produces both a numerical score and an alphabetical level of service rating based on a range of scores. According to Ed Barsotti, creator of the League of Illinois Bicyclists BLOS Calculator, most experienced cyclists feel comfortable on roads with a "C" rating or better and will ride on many "D" rated roadways. In comparison, casual cyclists prefer to ride only on "B" or better roads. See Table 2 below for BLOS Score Ranges, Level of Service ratings and Compatibility Levels.

Table 2: BLOS Rankings

BLOS Score Range	Level of Service	Compatibility Level
<1.50	A	Extremely High
1.51-2.50	B	Very High
2.51-3.50	C	Moderately High
3.51-4.50	D	Moderately Low
4.51-5.50	E	Very Low
>5.50	F	Extremely Low

1.4.2 BLOS Interpretation

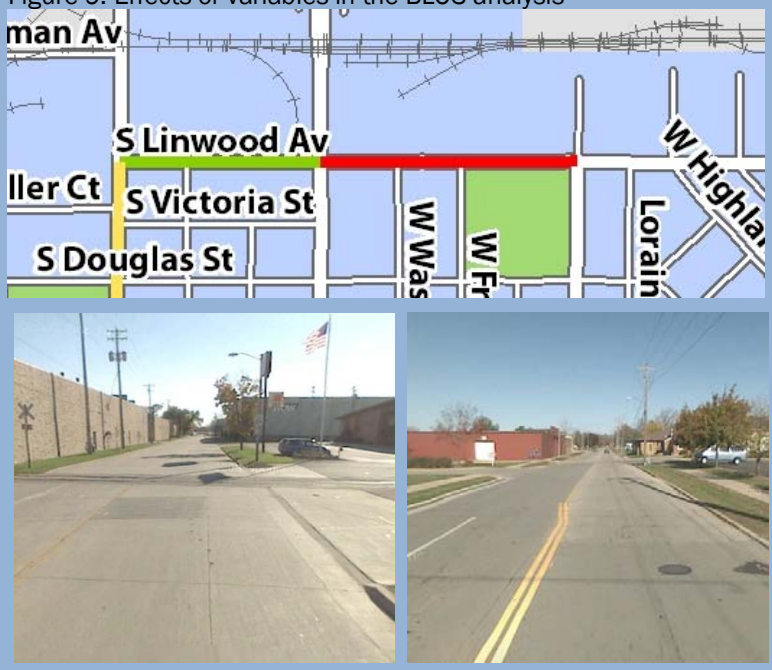
The general findings indicate that in Sub Area 1 (Map 4A) many segments rank a D – Moderately Low bicycle level of service. In Sub Area 2 (Map 4B), the lowest ranked segment is N Ballard Rd which ranks an F – Extremely Low. North of USH 41 in Sub Area 3 (Map 4C), only two segments were evaluated with N Ballard Rd ranking a D-rating, and E Apple Creek Rd ranking a B - Very High.

In practice, there are some limitations with this analysis. One issue is the accuracy of the data used. For example, both E John St and S Telulah Ave are rated F – Extremely Low, the lowest

designation for bicycle service. However, in practice, they function very well for bicycles. The big factor in these rankings seems to be the PASER (pavement condition) rating. On many segments rated with a low BLOS the PASER rating is 1 or 2. The difference is striking – for example – S Linwood Ave ranked a C - Moderately High rating south of College Ave and an F - Extremely Low ranking north of College Ave. It's the same road, but the pavement ratings are perfect south of College Ave, and very low north of College. If pavement is really poor it does indicate that there may be issues for bikes, however, this issue is better addressed in a pavement resurfacing plan.

The BLOS helps to identify areas were additional facilities should be explored. For the purposes of this plan, a low BLOS ranking alone will not discount the segment from being a reasonable route for bicycles. Instead, the analysis was used to test observations from the field review (e.g. the bicycle level of service on N Ballard Rd was rated extremely low during the field review and in the BLOS). It should be noted that only segments that were identified as part of the preliminary bicycle network as potentially requiring bike lanes were evaluated, others were not tested.

Figure 9: Effects of variables in the BLOS analysis



Top: BLOS map for Linnwood Avenue.
Left: S. Linwood (Green); segment data showed high pavement rating and resulted in high BLOS ranking (C – Moderately High).
Right: N. Linwood Ave (Red); the segment appears to have been resurfaced recently, but a low pavement rating resulted in a low BLOS ranking (F – Extremely Low).

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2 GOALS AND OBJECTIVES

This chapter contains goals and objectives to enable Appleton to achieve a bicycle system that will benefit area businesses, visitors, and residents.

2.1 Goals and Objectives

Goals and objectives that should be followed by all entities working toward an improved multimodal transportation network are listed below. Numerical listing is for reference purposes only and should not suggest order of importance.

Goal 2.1.1: Develop a well-connected bicycle network that links a variety of destinations together into a cohesive transportation system.

Objectives:

a. To utilize on- and off-street bicycle facilities to link places of residence to places of work, school, and shopping.
b. To capitalize on the availability of easements and access corridors to enhance the existing linear trail network throughout Appleton. This includes improving connections between off-road and on-road facilities (especially near the Fox River).
c. To work with other communities and organizations to enhance connections throughout the Fox Valley.
d. To create a central clearinghouse for bicycle issues including an on-line reporting mechanism for hazards, maintenance concerns, and facility improvements.

Goal 2.1.2: Increase the utilization, availability, and demand for funding to improve bicycle facilities.

Objectives:

a. To target resources for bicycle improvements to areas of greatest need.
b. To leverage funding that may be available through Safe Routes to School monies to augment the bicycle network for all users.
c. To increase education that encourages bicycle and pedestrian commuting and creates advocates.
d. To identify and pursue all available grants.
e. To earmark annual monies to implement this Bike Lane Plan.

Goal 2.1.3: Design roads to be compatible with surrounding uses and be pedestrian, bicycle and transit friendly.

Objectives:

a. To integrate the existing trail system into a bicycle and pedestrian transportation network.
b. To identify priority origins and destinations and increase access to these locations through a variety of travel modes.
c. To better accommodate the provision and identification of bicycle facilities on roadways including use of appropriate striping or signage.
d. To form linkages with other communities and places of recreational and commercial value.

Goal 2.1.4: Reduce the number and severity of vehicular crashes with particular emphasis on reducing vehicle-bicycle conflicts and crashes.

Objectives

a. To increase reporting and tracking of crashes throughout the Fox Valley.
b. To reduce speeding in high-traffic areas.
c. To increase the media attention given to bicycle, pedestrian, and automobile responsibilities.
d. Work with Bicycle Federation of Wisconsin to air public service announcements focused on educating bicyclists and motorists alike.

Goal 2.1.5: Supplement facilities improvements with adequate education, encouragement, and enforcement programs.

Objectives:

a. To increase educational opportunities to educate pedestrians, bicyclists, and motorists about rights and responsibilities on roadways and shared-use facilities.
b. To promote incentives for biking to work.
c. To increase the safety of transportation facilities by enforcing speed limits, rights of way, etc.
d. To promote safe driving, especially in school zones, by working with local police to increase periodic enhanced enforcement efforts.
e. To encourage healthy lifestyles and reduce obesity rates.
f. Work with organizations, such as Appleton School District ("Lifestyle Enhancement Program") and YMCA of Fox Cities, to expand or enhance current bike to work programs and incentives throughout the city.

Goal 2.1.6: Enhance intergovernmental cooperation and coordination for improving multimodal transportation.

Objectives:

a. To work jointly with multiple jurisdictions in planning and funding linear trail and dedicated on-street transportation facilities.
b. Work with key organizations within the Fox Valley, including Fox Cities Greenways, to realize interurban connections and to increase the capacity for implementation through full utilization of community resources.
c. To increase political buy-in by engaging elected officials and residents in development and utilization of bicycle and pedestrian facilities.
d. To work cooperatively in developing grant-writing workshops, maintenance seminars, and training sessions. This includes coordinating with WisDOT and the Bicycle Federation of Wisconsin to hold local workshops.

Goal 2.1.7: Enhance the livability of the Fox Valley by improving transportation variety throughout the region and establishing Appleton as a bicycling destination.

Objectives:

a. To showcase the natural beauty of the Fox Valley through appropriate placement and development of multimodal transportation resources.
b. To promote economic vitality by utilizing and preserving access to natural and recreational features within the city and region.
c. To increase the amount of facilities along routes and trails (including benches, rest areas, trailheads).
d. To engage local advocacy organizations in developing healthy lifestyles activities and events, such as Sunday Parkways or Bicycle Rodeos, to encourage active recreation and transportation.

Goal 2.1.8: Increase the numbers of commuters that bicycle to work.

Objectives:

a. To require secure bicycle parking at all new employment centers with 30 or more employees and encourage adequate bicycle parking outside existing structures.
b. To work with the Bicycle Federation of Wisconsin, local certified instructors, or other groups to increase bicycle education for bicycle commuters.
c. To work with neighborhood organizations and business improvement districts to match potential bicycle commuters together to increase ridership, camaraderie, and encouragement.
d. To encourage provision of appropriate worksite accommodations for bicycle commuters.

Goal 2.1.9: Continue to monitor progress toward implementing this plan and increasing mode share for non-motorized transportation.

Objectives:

a. To work with other Fox Valley communities to perform periodic bicycle counts.
b. To set a benchmark for pedestrian and bicycle mode share over the next ten years.
c. To regularly monitor police reports to determine if the incidence of vulnerable user crashes is affected by safety education programming and/or increased enforcement.
d. To formalize events, such as Bike to Work Week, with recorded data so empirical data for number of trips (or other measures) can be compared year-to-year.
e. To survey participants of education workshops or encouragement programs to see if these programs have an effect or could be better administered to enhance effectiveness or delivery.

3 BEST FACILITY PRACTICES

Accommodating a variety of transportation modes is the idea behind "complete streets" and improves mobility for all users. The purpose of this chapter is to provide clear and consistent information about how to plan and design bicycle facilities. Much of this document is based on existing published standards and guidelines through the Wisconsin Department of Transportation (WisDOT), the Manual of Uniform Traffic Control Devices (MUTCD) or the American Association of State Highway and Transportation Officials (AASHTO).

3.1 Bicycle Facilities

The best strategy for accommodating bicycle trips is to provide adequate on-street bicycle lanes and to educate the driving public on the need to share the road with bicyclists. Signs, off-road bicycle paths, proper bike parking facilities, and non-infrastructure initiatives also facilitate safe bicycle travel. Facility sheets describing the design and application of facilities are located at the end of this chapter.

3.1.1 Bike Lanes

Bike lanes can be incorporated into a roadway when it is desirable to delineate available road space for preferential use by bicyclists and motorists, and to provide for more predictable movements by each. Bike lane markings provide greater comfort for bicyclists who are not used to operating on a roadway with other traffic. See Figure 1.

Bike lanes should be one-way facilities and carry bike traffic in the same direction as adjacent motor vehicle traffic. On one-way streets, bike lanes should generally be placed on the right side of the street. However, bike lanes on the left side of the street may be appropriate when it will substantially decrease the number of conflicts, such as those caused by heavy bus traffic or unusually heavy turning movements to the right, or if there are a significant number of left-turning bicyclists.

Curbside bike lanes and bike lanes adjacent to parking are common treatments. It is important that a curbside bike lane include at least 5 feet of space outside of the gutter pan to allow for snow storage and to discourage bicyclists from riding in the gutter pan. In corridors with limited space an innovative 5 foot gutter pan bike lane with saw cut joints can be installed to accommodate bicycles. See Facility Sheet 3.1.

Figure 1: Bike Lanes

Figure 2: Shared Lane Marking

Figure 3: Multi-Use Path

3.1.2 Shared-Use Roadway

A shared-use roadway is typically a neighborhood street where traffic volumes and traffic speeds are low and bicyclists and motorists can comfortably share the road. Width is the most critical variable affecting the ability of a roadway to accommodate bicycle traffic. In order for bicycles and motor vehicles to share the use of a roadway without compromising the level of service and safety for either, the facility should provide sufficient paved width to accommodate both modes. This width can be achieved by providing wide outside lanes or paved shoulders. Where there is not enough width for a motor vehicle and a bicycle to operate side-by-side, a shared-lane marking can be installed to communicate that the roadway should function as a single-file facility. See Figure 2 and Facility Sheet 3.2.

It is important to note that all streets should be designed to be bicycle friendly. Roadways should be designed so that catch basins or roadway joints will not entrap a bicycle tire. In addition, manholes should be placed in locations that will not impede bicycle travel. Efforts should also be made to keep roadway surfaces smooth and free from potholes.

3.1.3 Multi-Use Path

This facility is located within its own right of way, is usually 10-14 feet wide and is commonly designed for two-way travel. See Figure 3. Multi-use paths can serve a variety of purposes. They can provide users with a shortcut through a residential neighborhood, provide access to school sites, and can provide an enjoyable recreational opportunity. Shared use paths can be located along rivers, lake fronts, canals, abandoned or active railroad and utility rights-of-way, limited access freeways, within college campuses or within and between parks. Paths can also provide bicycle access to areas that are otherwise served only by limited access highways closed to bicycles. See Facility Sheet 3.3.

Paths should be thought of as a complementary system of off-road transportation routes for bicyclists and others that serve as a necessary extension to the roadway network. Paths should not be used to preclude on-road bicycle facilities, but rather to supplement a system of on-road bike lanes, wide

outside lanes, paved shoulders and bike routes. In Appleton, the off-road network includes a number of paths that lead over highways and are vital multimodal connections.

3.1.4 Bicycle Routes and Other Signs

Suitably designed bikeways can be identified formally as "Bike Routes." Bike routes are segments of a system of roads that are designated by a jurisdiction having authority with appropriate directional and informational markers, with or without a specific bicycle route number (AASHTO definition). These routes should 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 Appleton, will find these routes useful for getting to know the area by bicycle.

There are several reasons for designating signed bike routes:

a. The route provides continuity to other bicycle facilities such as bike lanes and multiuse paths.
b. The road is a common route for bicyclists through a high demand corridor.
c. The route extends along local neighborhood streets and collectors that lead to an internal neighborhood destination such as a park, school or commercial district.

Bike route signs may be used on shared streets, streets with bike lanes, and on multiuse paths. Regardless of the type of facility or roadway where they are used, it is recommended that bike route signs include destination information, as shown in Figure 4. See Facility Sheet 3.4.

"Bike Route" or "Share the Road" signage can be used to encourage bicyclists to use a given corridor and to remind motorists that they may encounter a bicycle. Bike Route signage should be placed at key decision points along a corridor and Share the Road signage should be spaced at regular intervals.

3.1.5 Bicycle Parking Facilities

Bicycle racks are necessary for cyclists to secure their bicycles once they reach their destination. Choosing

Figure 4: Destination-based Bike Route Sign (Portland, OR)

Figure 5: Inverted-U Racks

Figure 6: Dismount Zone Sign

the appropriate style of bicycle rack is based on how much security is required at a location. Available space is also a factor in determining what style of rack should be installed. Some bicycle rack styles take up more space than others and position parked bicycles differently. Choosing the right bike rack involves looking at utility locations, fire escapes, sidewalk dimensions, and visibility. Design is a critical component in bicycle rack selection. In general, a bicycle rack should include two points of contact with the bicycle to keep it from falling and damaging the bicycle. The "inverted-u" is considered one of the most functional and cost effective designs. See Figure 5 and Facility Sheet 3.5. The hitch post rack, or hoop and bollard design currently used on College Avenue is also considered an attractive and space efficient bike rack that is designed for sidewalks and other narrow space applications.

3.1.6 Additional Design Considerations and Facilities

Catch Basins: A properly designed catch basin should be entirely located within the gutter pan and catch basin covers should be placed to avoid catching the tires of a bike. Drainage grates (catch basin covers) should be placed perpendicular to the direction of travel.

Transitions (On- and Off-Street): The transition of paths to roadways is particularly important for creating a functional bicycle network. Special design treatments should be applied depending on the relative volume of motor vehicle and bicycle traffic.

a. Bicycle-Pedestrian Signal: for mid-block crossing of higher volume roadways, where the crossing is located a sufficient distance from adjacent signalized intersections.
b. Roundabout: standard roundabout design on the motor vehicle approaches, with modified design for the bike path approaches.
c. Raised Crossing: maintains the grade of the path across the roadway.
d. Multi-way Stop Control: requires all approaches to stop, which can be desirable in locations with limited sight distance.

Bike Station: A Bicycle Station is a full service indoor bicycle storage facility that is typically staffed or has membership access. Bicycle Stations generally include a secure place to store a bike and may provide services such as bike repair, bike rentals, concessions, bicycle sales, and merchandising. Some bicycle stations include restrooms, drinking fountains, lockers, and shower facilities. Bicycle Stations are excellent locations to distribute maps and to provide the public with basic information about local paths, safety, and rules of the road.

***Dismount Zone*:** Dismount zones are often needed when bicycles and pedestrians cannot safely share the same space. Signage and pavement markings are often helpful in informing bicyclists (See Figure 6), however in some areas it is not practical or necessary to sign or mark the dismount zone because of a known statute or ordinance. Dismount signage and pavement markings should be minimized and should only be used when one or more of the following criteria are met:

a. The location presents a clear safety problem such as a narrow sidewalk or a steep slope. Clear zones, sight distances, and crash history should be evaluated.
b. The location has a substantial number of pedestrians such as a college campus or a sidewalk in front of numerous businesses. Both pedestrian and bicycle volumes and level-of-service should be considered and compared.
c. The location is in an area with a high number of children or elderly pedestrians.
d. The location has a suitable alternative route for bicycles within a reasonable distance.

Crosswalk Enhancements: Crosswalks are typically intended for pedestrians, however some bicyclists choose to ride on sidewalks and often use pedestrian crosswalks. Unless a path approaches an intersection, crosswalk design and crosswalk enhancements should be based on pedestrian needs and not designed specifically for bicycle use.

Many intersections in Appleton have striped crosswalks. Striped crosswalks are permitted at signalized intersections and typically consist of two solid parallel white lines. In some cases when the crossing distance is long or there are very high volumes, a zebra crosswalk may be used. Crosswalk enhancements may include zebra/continental crosswalks, crosswalk bollards, flashing warning signs, enhanced pavement markings, and lighted crosswalks.

Refuge Islands: Pedestrian refuge islands are defined as the areas within an intersection or between lanes of traffic where pedestrians or bicyclists may safely wait until vehicular traffic clears, allowing them to cross a street. Refuge islands are commonly found along wide, multilane streets where adequate pedestrian crossing time could not be provided without adversely affecting the traffic flow.

In areas of heavy traffic, a Z-crossing can be used to increase safety. A Z-crossing utilizes a median island and crosswalks laid out in a staggered configuration at uncontrolled intersections. The configuration requires pedestrians or bicyclists to walk or ride toward traffic to reach the second half of the crosswalk.

Bicyclists may benefit from pedestrian refuge islands if they choose not to utilize a travel lane to execute a turning movement. For this reason, refuge islands should be wide enough to accommodate a bicycle (preferably one with a trailer).

Lead Pedestrian Intervals: At some locations, bicyclists may encounter signal controlled intersections, especially when a multiuse path carries through or terminates at an intersection. In most cases, bicyclists will use the pedestrian signal to cross the intersection. When pedestrian signals are timed with a green phase at an intersection both pedestrians and motor vehicles (particularly right-turning vehicles) start at the same time and conflicts can result. A lead pedestrian interval is a change in signal phasing that allows a pedestrian phase to begin a short time (generally 4 seconds) before the green phase for motor vehicle traffic. This allows pedestrians and bicyclists a "head start" utilizing crosswalks in the intersection. This facility requires the intersection to be signed for "no turn on red". This signal phase enhances visibility of pedestrians and bicyclists at crossings and alerts motorists to the existence of vulnerable users in the right-of-way.

Facility Sheet 3.1

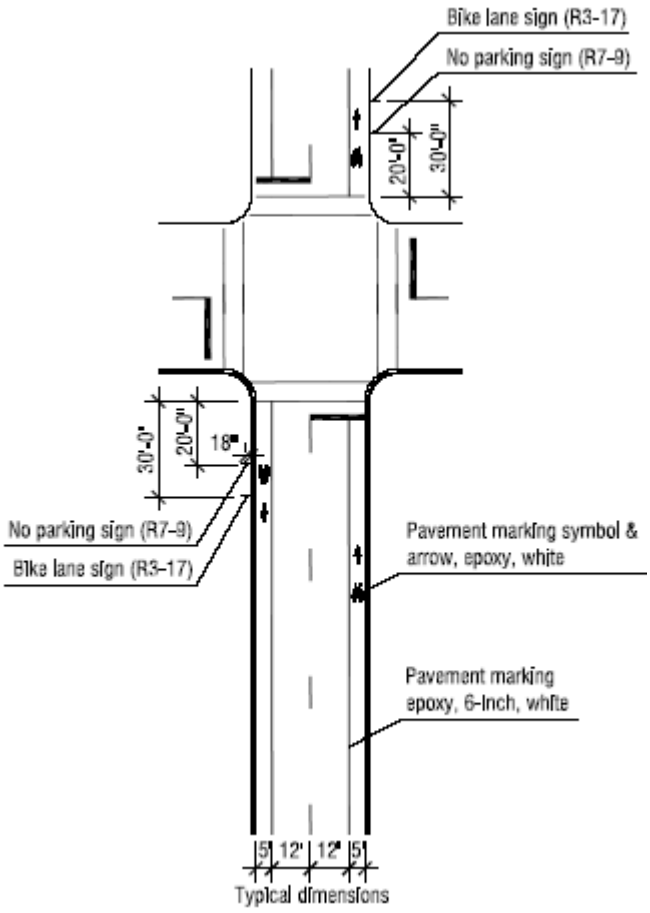
Bike Lane

Description/Purpose
Marked space along length of roadway for exclusive use of cyclists. Bike lanes create separation between cyclists and automobiles.

Advantages
- Provides bicycle access on major through street
- Clarifies lane use for motorists and cyclists
- Increases cyclist's comfort through visual separation

Disadvantages
- Space requirements may preclude other possible uses like parking or excess travel lane width

Design



Application
- On roadways with 3,000 motor vehicles per day or higher
- Any street with excessive curb-to-curb space where bike lanes could help reduce vehicle lane widths

Design/Maintenance Considerations
- Bike lane width
- Frequency of bike lane symbol
- Keep bike lane symbols out of the path of turning vehicles
- Typically placed on right side of roadway (unless one-way street)
- Automobile "door zone" clearance when bike lanes are adjacent to parked cars
- One-way facility carrying traffic in same direction as adjacent traffic

Design Guidance
- Minimum 4 feet width for roadways with no curb and gutter
- If parking is permitted, the bike lane should be placed between the parking area and the travel lane and have a minimum width of 5 feet
- Where parking is permitted but a parking stripe or stalls are not utilized, the shared area should be a minimum of 11 feet without a curb face and 12 feet adjacent to a curb face

Facility Sheet 3.2

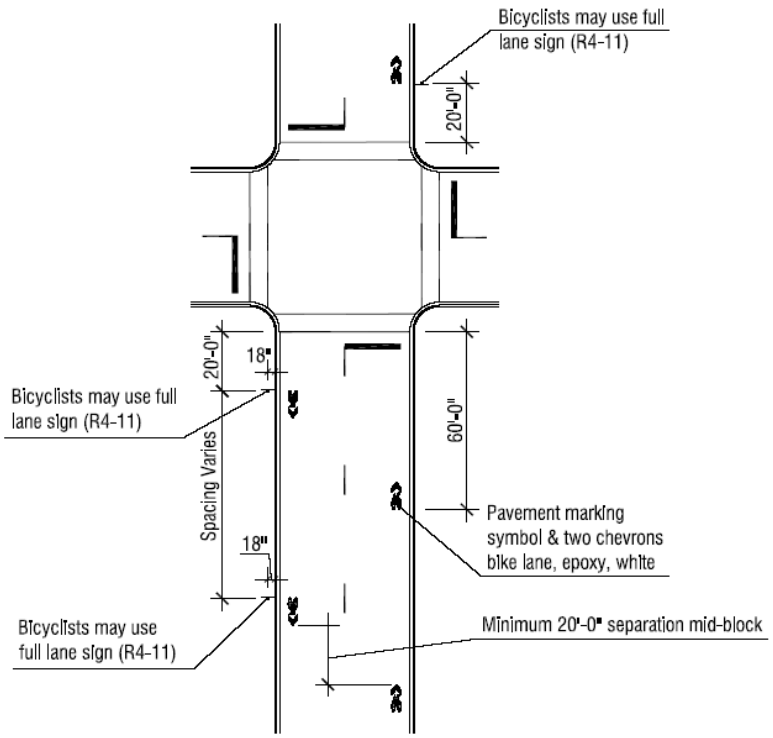
Shared Lane

Description/Purpose
Shared roadway pavement markings, or "sharrows", are marking used to indicate a shared lane environment for bicycles and automobiles. Sharrows identify to all road users where bicycles should operate on a street where a separated facility is not feasible.

Advantages
- Helps cyclists position themselves in lanes too narrow for a motor vehicle and a bicycle to travel side-by-side
- Provides pavement markings where bike lanes are not possible

Disadvantages
- Maintenance requirements
- Not as effective as a separated bicycle facility

Design



Application
- Roadways with moderate motor vehicle traffic volumes but where bike lanes cannot be installed due to insufficient right-of-way
- Short gaps between bike lanes
- Low traffic shared roadways
- Where bike route passes by angled-parking

Design/Maintenance Considerations
- Marking placed a minimum of 11' from curb face where on-street parking exists
- Pair with "Share the Road" signage

Design Guidance
- Frequency of "sharrow" symbol should correspond to the difficulty for cyclists (conflict areas may require greater frequency of markings)
- Ensure placement of pavement marking is out of the "door zone"

Facility Sheet 3.3

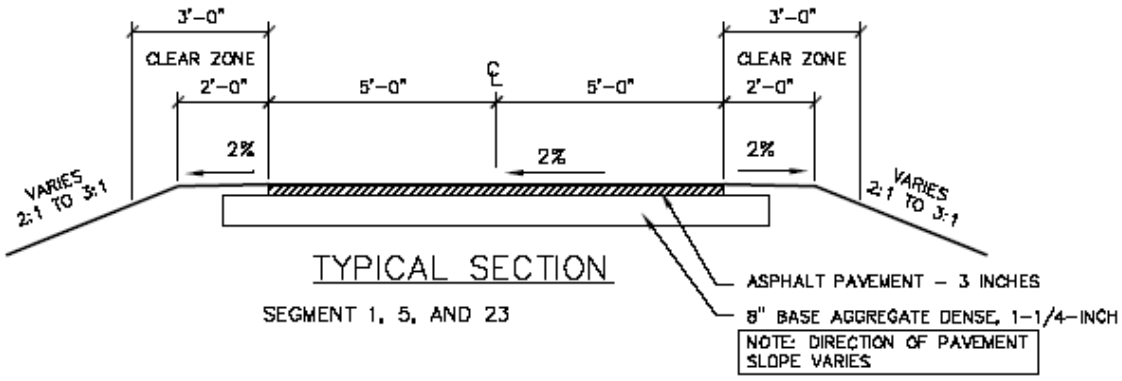
Multiuse Path

Description/Purpose
Multiuse paths effectively maximize available right-of-way by combining uses. They accommodate several types of non-motorized users including bicyclists, pedestrians, joggers, and roller bladers.

Advantages
- Can enhance access to destinations
- Wide range of user comfort

Disadvantages
- Right-of-way acquisition
- Cost

Design



Application
- Connections between cul-de-sacs
- Linear trail network
- Rails-to-trails conversions
- Along waterways

Design/Maintenance Considerations
- Speed of cyclists
- Slope, grade
- Pedestrian use volumes
- Lighting
- Signage
- Markings

Design Guidance
- Some multiuse paths are striped with a centerline to delineate direction
- Must be at least 10 feet wide; wider paths are preferred on busier paths
- Ideally, bicyclists and pedestrians should be separated
- Vegetation can be used adjacent to catch run-off

Facility Sheet 3.4

Bicycle Wayfinding

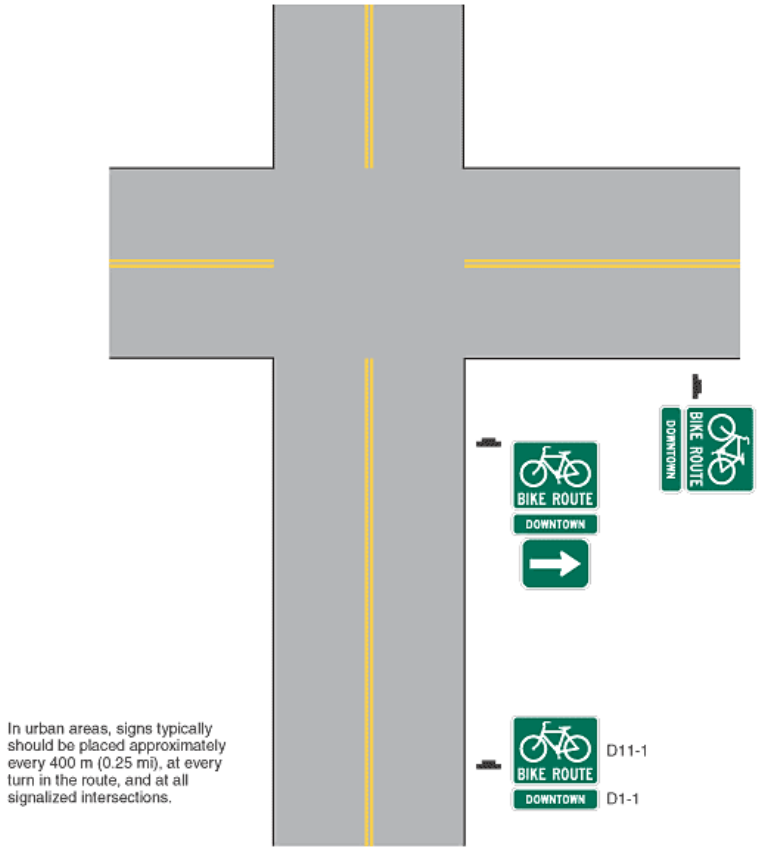
Description/Purpose
Informational signage tells a cyclist where they are located or which facility they are using. Signs for bike routes or lanes also communicate to motorists that bicycles may be present. Wayfinding signage provides destination information at decision points and enhances the usability of the bicycle network.

Advantages
- Tells users where a route or path goes
- Can identify distance to destination
- Can name certain segments or paths

Disadvantages
- If there's a lot of information it may require frequent updating
- Names listed may be unfamiliar to users

Design

Figure 9B-6. Example of Signing for an On-Roadway Bicycle Route



Application
- Bike Route and Destination signs only on designated routes
- Destinations mentioned must accommodate bikes

Design/Maintenance Considerations
- All signs retroreflectorized
- Detour signs when under repair
- Limit number of signs per location

Design Guidance
- "No Motor Vehicles" sign at path entrance
- Warning signs at crossings
- Trail signs located 3' to 6' from trail edge
- Overhead signs on trails require 8' clearance

Facility Sheet 3.5

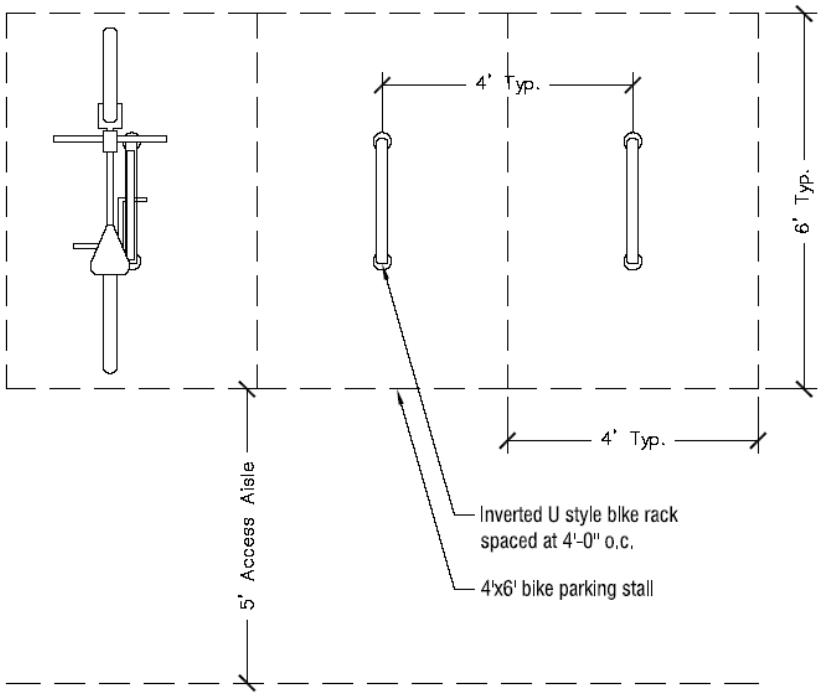
Bicycle Parking

Description/Purpose
Bicycle parking allows bicyclists secure parking upon reaching their destination. Racks should be ideally located near a building entrance to encourage bicycle use and increase security.

Advantages
- Provides a dedicated space for bicyclists
- Can encourage bicycle trips if well placed
- Formalizes access corridors for site planning

Disadvantages
- Requires maintenance
- Substandard designs can be a disincentive
- Security can be a concern

Design



Application
- Use to identify where bikes should be secured

Design/Maintenance Considerations
- Must be cleared of snow in winter
- Place in well lit area
- Mopeds allowed?

Design Guidance
- Place on paved surface
- Surface should not exceed 2% slope
- Utilize 4' (preferred) x 6' stall with 5' access aisle (36" minimum spacing between racks)
- Locate within 50' of a building entrance

4 RECOMMENDATIONS

This chapter addresses the issues and opportunities identified throughout this plan. It presents actionable solutions to grow the bicycle network in Appleton. Recommendations are categorized into two sections 1) Programmatic Recommendations and Policies, and 2) Facilities Recommendations.

4.1 Programmatic Recommendations and Policies

This section contains programmatic (operational) recommendations and policy statements that will help to improve the level of safety and convenience for bicyclists in Appleton. Policy statements outline the way in which Appleton will support bicycle transportation. Operational recommendations focus on education, encouragement, enforcement, engineering, and evaluation. Attention to operational procedures and programs is critical for growing enthusiasm and support for bicycling in the Fox Cities. The recommendations listed should be pursued by interested parties, organizations, and individuals. Implementation of these recommendations may be impacted by any number of factors including roadway improvement schedules, funding, and political will.

4.1.1 Policy Statements

A. On designated arterial streets, Bike Routes will consist of bike lanes with painted stripes and stencils. Appleton will endeavor to install bike lanes on all designated bicycle routes with 3,000 AADT or greater, and will examine the need for bike lanes on segments linking to primary destinations such as parks or schools even where traffic counts do not meet the AADT threshold. Most residential streets will be assumed "safe" for bicycles and won't be marked as Bike Routes. This is not an indicator that the street is unsafe for bicyclists.

B. Where a bike lane approaches an intersection that contains turn lanes, the bike lane will end a reasonable distance from the intersection to allow bicyclists to take the proper lane. Where practicable, the bike lanes will be extended all the way to the stop line at the intersection.

C. Designated bike routes will be signed. Wherever feasible, signs will include destination panels and arrows to direct users to primary destinations along the bicycle network.

D. Inter-governmental Cooperation: The City will pursue cooperative efforts with surrounding communities and counties, the State of Wisconsin, and Federal levels of government to promote this plan.

E. The City will use its media resources to educate the public about bicycle and pedestrian safety.

F. The City will promote safe, non-aggressive driving and riding practices to both drivers and riders of all ages.

G. Maps: The City will work with community partners to print a well-designed map, showing Bike Routes and appropriate landmarks. The map should be simple, easy to read and interpret, and also contain relevant rules and safety information.

H. The City will fund bikeway projects and programs through existing and new sources of local, regional, state, and federal funding programs. Where feasible, Appleton will coordinate with other jurisdictions to fund projects or pursue funding.
I. Where street parking is incompatible with bike lanes, Appleton will prioritize bike lanes except in business districts, where on-street parking is necessary.
J. The City of Appleton will monitor progress toward achievement of goals and policies within this plan and update this plan frequently to ensure relevancy, awareness, and consistency.

4.1.2 Education Recommendations

Education programs include identifying bicycling routes, teaching proper techniques for riding near automobiles, and demonstrating how to maintain a bicycle in good working order. Education may also include discussing where and how to properly lock bicycles or identifying areas where conflicts may occur between users of different modes within transportation network.

a. Work with volunteers and staff from area organizations and bicycle businesses to promote bicycle repair education and training.
b. Create informational packets demonstrating the benefits of active transportation modes. Utilize library, city offices, and other gathering locations to display materials and event information.
c. Identify League Cycling Instructors through the League of American Bicyclists to teach cyclists to ride safely and confidently. Bike Education programs include basic traffic skills, commuting, and motorist education curricula.
d. Work with local bike shops, service organizations, and other agencies to sponsor helmet giveaways and fit clinics.
e. Encourage inclusion of bicycle and pedestrian education as part of Driver Safety Education programs within the community.
f. Create PSA's for use on community radio and television programming.
g. Invite guest speakers and hold seminars on safe and effective non-motorized transportation. Seek the help of user groups to run programs and seminars on safe bicycling.
h. Consider holding bicycle rodeos. While these events are generally held for people new to cycling (i.e. children) the curricula can be developed to initiate users new to Appleton about local routes and opportunities. It may also encourage new users to try bicycling for the first time.
i. Create a Bicycle Ambassador Program that enlists volunteers to periodically interact with others around the city and give out free safety gear and resources, teach "ABC Quick Check" techniques, and speak with motorists about bicycle and pedestrian issues.

4.1.3 Encouragement Recommendations

Encouragement programs should be used to enable and promote biking. This can be done through incentives (or rewards) and through provisions (such as bicycle racks). Encouragement activities should utilize social marketing techniques to make it attractive and rewarding to participate in bicycling activities.

a. Promote the idea of employer incentive programs to encourage local workers to try bicycling and walking to work. Company programs may include flexible arrival and departure times, or games such as "fantasy" teams that compete against each other for prizes. Organizations, such as Appleton School District ("Lifestyle Enhancement

Program") and YMCA of Fox Cities, currently provide bike to work programs and incentives.

b. Work with local service organizations, sports associations, and police departments to develop a *Sunday Parkways* event. *Sunday Parkways* are times set aside on weekends and holidays for traffic-free bicycling, skating, and walking on a network of selected streets. Existing automobile infrastructure is effectively transformed into bicycle and pedestrian trails gathering neighbors outdoors to celebrate walking and bicycling. The program has been successful in promoting public health and alternative transportation in cities from New York City, NY to San Francisco, CA but is scalable and can be implemented in smaller communities. Local examples include "Ride the Drive", held in Madison, WI on June 6, 2010 where six miles of downtown streets where closed to motorized traffic. (Figure 1)

Figure 1: Ride the Drive (Madison, WI)

c. Promote public bicycle rides, events, programs, and bicycle advocacy groups including Bike to Work Week, bike swaps, club rides, fundraising events, and competitive sporting events.
d. Commit Appleton to becoming a recognized Bicycle Friendly Community (BFC) a designation sponsored by the League of American Bicyclists. The program recognizes the city's efforts to encourage a more bicycle friendly atmosphere for residents and visitors.
e. Include a "transportation" page on the city website that includes bicycle and pedestrian maps, flyers, and materials. Consider working with local groups to develop organized rides and events.
f. Explore developing bicycle parking standards, like automobile parking standards, for multifamily residential and commercial developments to ensure secure and accessible bicycle parking is available on-site. The standards should include dimensions for the parking space and acceptable rack facilities.
g. Provide additional bike parking at major events and event centers.

4.1.4 Enforcement Recommendations

Consistent enforcement of traffic laws plays an important role in advancing bicyclist and pedestrian safety.

a. In conjunction with local and county police, hold periodic traffic stops where motorists, bicyclists and pedestrians may be stopped, given a Share the Road flyer, and have the opportunity to provide feedback to officers regarding the campaign.
b. Implement a trained bike patrol officer or Community Service Officer program during special events to engagement other bicyclists and model good behavior.
c. Educate and train law enforcement personnel in the enforcement of laws concerning bicyclists' rights and responsibilities. Consider sending an officer to the WisDOT-Bureau of Transportation Safety (DOT-BOTS) Pedestrian and Bicycle Law Enforcement training course, new recruit training, and refresher courses.

d. Encourage police to work with local schools, businesses, and residents to stage periodic enhanced enforcement efforts in areas where motorists exhibit unlawful or dangerous behavior.

4.1.5 Engineering Recommendations

Development of bicycle facilities can greatly enhance the usability and safety of the transportation network for bicyclists.

a. Develop a sign plan for placement of bike route signs as well as any regulatory signs (bike lanes, etc.) prior to facility installation.
b. Ensure that repair and construction of transportation facilities minimize disruption to the bicycling and pedestrian environment. Develop a detour protocol when bicycle and pedestrian facilities are under construction. This includes identifying alternate routes and signing them accordingly.
c. Regularly inspect and resurface bikeways when needed, and provide regular cleaning (especially in spring).
d. All bike paths should be paved. Gravel paths can be initially used when paving is financially impractical.
e. When rebuilding streets, those designated as bike routes should be improved for increased bicycle and pedestrian safety and comfort. Establishing sidewalks, widening streets, installing crossing islands, improving street lighting and other relevant improvements must be considered.
f. Create a consistent and accurate method for reporting collisions and monitor collision data to identify problem locations.
g. Provide sufficient lighting on all bikeways, walkways, and bicycle parking areas.
h. Implement bicycle and pedestrian satisfaction surveys to monitor changes in perceived safety, barriers/hazards, and travel mode share.

4.1.6 Evaluation Recommendations

Evaluation of bicycle activity includes documenting trends and preferences. Surveys and audits can help provide quantitative support for bicycle improvements.

a. Work with local police, volunteers, and sports associations to perform bicycle counts at least once every two years.
b. Perform a regular tally of bicycle rack usage and document requests for bicycle racks as part of street reconstruction projects.
c. Consider developing an online reporting instrument where bicyclists and pedestrians who encounter barriers, such as bad pavement or overgrown shrubs, can report issues.
d. Provide transportation surveys for residents and visitors that wish to comment on the ease of use for each transportation mode in the city, including integration of multiple modes of transportation, to identify gaps in the system.

4.2 Facilities Recommendations

The following facilities recommendations focus on physical improvements to the transportation network. This plan was developed for on-street facilities. In most cases, bike lanes can be installed through redesign and restriping of current travel lanes. In other cases, the roadway would need to be widened, or reconstructed with urban facilities to accommodate all roadway users. Bike lanes are the primary facility recommendation though related bike lane signs, and route signs are critical improvements for enforcement and functionality.

4.2.1 System Improvements (Master List)

This section details all on-street bicycle facilities recommendations for the City of Appleton. Careful consideration was used when determining the best connections between origins and destinations within the existing transportation network. These routes and facilities also recognize how mobility will be expanded through continued connections to the off-road network (CE Trail, Newberry Trail, etc.) and how increased access to this and other regional trails and bicycle routes will benefit bicyclists throughout the Fox Cities. Maps delineating the proposed bicycle network can be found in Appendix E. The improvements table (Table 4-1) includes the following information:

Term

1-5 ..... targeted for implementation in the next five years
5-10..... targeted for implementation in the next ten years
10-15 ..... long-term recommendation that should be evaluated when plan is updated
15-20 ..... long-term recommendation that may require substantial reconstruction or intergovernmental coordination

Note: facilities phasing maps (Maps 7A, 7B, 7C and7D) show the bicycle network in 5-year increments over the next twenty years. See Appendix G.

Project

Name of street segment

Limits

Project limits from beginning to end

Facility

Suggested improvement (Bike Lane or TBD – To Be Determined)

Length (in feet)

The approximate length of the project within defined limits; "TBD" used when the extent of the project is unknown

Total Cost

$ figures..... represent estimated total cost of project, unless unit costs are shown
TBD..... costs to be determined because project scope is unknown at this time

Map

The map number where the project is delineated or described

Funding

Potential funding sources (see Chapter 5 for complete list)
TE: Transportation Enhancement
BPFP: Bicycle and Pedestrian Facilities Program
STP-U: Surface Transportation Program – Urban
SRTS: Safe Routes to School

Table 4-1: Improvements Table

Project	Limits	Facility	Length (ft)	Total Cost	Map	Funding	Term
E Apple Creek Rd *	N Ballard Rd to E Apple Hill Blvd	Bike Lanes	5119	$ 307,140	5C	TE, BPFP	15 to 20
N Appleton St	W Prospect Ave to W College Ave	Bike Lanes	1051	$ 2,102	5B	SRTS, TE, BPFP, STP-U	5 to 10
N Appleton St *	W College Ave to W Washington St	Bike Lanes	410	$ 24,600	5B	SRTS, TE, BPFP, STP-U	5 to 10
N Appleton St	W Washington St to W Pacific St	Bike Lanes	1336	$ 2,672	5B	SRTS, TE, BPFP, STP-U	5 to 10
N Appleton St *	W Pacific St to N Oneida St	Bike Lanes	686	$ 41,160	5B	SRTS, TE, BPFP, STP-U	10 to 15
N Ballard Rd	E Wisconsin Ave to E Northland Ave	Bike Lanes	5225	$ 10,450	5B	TE, BPFP	1 to 5
N Ballard Rd	E Northland Ave to E Capitol Dr	Bike Lanes	2636	$ 5,272	5B	SRTS, TE, BPFP, STP-U	10 to 15
N Ballard Rd *	E Edgewood Dr to Apple Hill Blvd	Bike Lanes	6102	$ 366,120	5C	TE, BPFP	5 to 10
Capitol Dr	N Mason St to Roemer Rd	Bike Lanes	15224	$ 30,448	5B	SRTS, TE, BPFP, STP-U	5 to 10
Capitol Dr	N Lynndale Dr to N Mason St	Bike Lanes	5370	$ 10,740	5B	SRTS, TE, BPFP, STP-U	10 to 15
E College Ave *	N Rankin St to bridge	Bike Lanes	613	$ 36,780	5A/5B	SRTS, TE, BPFP, STP-U	1 to 5
N Division St	W College Ave to W Packard St	Bike Lanes	1408	$ 2,816	5B/5D	SRTS, TE, BPFP, STP-U	1 to 5
N Drew St	E College Ave to E Randall St	Bike Lanes	4378	$ 8,756	5B/5D	SRTS, TE, BPFP, STP-U	1 to 5
Edgewood Drive (CTH JJ)	N Meade St to Apple Creek Trail	TBD	TBD	TBD	5C	TE, BPFP	1 to 5
W Franklin St *	N Richmond St to N Drew St	Bike Lanes	3856	$ 7,712	5A/5B	SRTS, TE, BPFP, STP-U	1 to 5
E Fremont St	S Oneida St to S Telulah Ave	Bike Lanes	6261	$ 12,522	5A	SRTS, TE, BPFP, STP-U	5 to 10
E Glendale Ave	N Ballard Rd to Roemer Rd	Bike Lanes	1644	$ 3,288	5B	SRTS, TE, BPFP, STP-U	1 to 5
E John St	E College Ave to E Calumet St	Bike Lanes	7177	$ 14,354	5A	SRTS, TE, BPFP, STP-U	1 to 5
Kensington Dr	Rail Rd to Oriole Ct	Bike Lanes	2916	$ 5,832	5A	SRTS, TE, BPFP, STP-U	10 to 15
Kensington Dr	Oriole Ct to Warehouse Rd	Bike Lanes	1060	$ 42,400	5A	SRTS, TE, BPFP, STP-U	10 to 15

Project	Limits	Facility	Length (ft)	Total Cost	Map	Funding	Term
Kensington Dr	Warehouse Rd to E Newberry St	Bike Lanes	1992	$ 3,984	5A	SRTS, TE, BPFP, STP-U	10 to 15
W Lawrence St	S State St to S Appleton St	Bike Lanes	1662	$ 3,324	5B/5D	SRTS, TE, BPFP, STP-U	1 to 5
W Lawrence St *	S Appleton St to S Oneida St	Bike Lanes	355	$ 21,300	5B/5D	SRTS, TE, BPFP, STP-U	1 to 5
W Lawrence St	S Oneida St to S Morrison St	Bike Lanes	401	$ 802	5B/5D	SRTS, TE, BPFP, STP-U	1 to 5
S Linwood Ave	W Spencer St to W Packard St	Bike Lanes	2651	$ 5,302	5B	SRTS, TE, BPFP, STP-U	10 to 15
S Mason St	W Prospect Ave W Capitol Dr	Bike Lanes	14636	$ 29,272	5B	SRTS, TE, BPFP, STP-U	1 to 5
N Meade St *	E Longview Dr to E Capitol Dr	Bike Lanes	2996	$ 179,760	5B	SRTS, TE, BPFP, STP-U	1 to 5
S Memorial Dr	City limits to W Seymour St	TBD	TBD	TBD	5A	TE, BPFP	1 to 5
Morrison St	E Lawrence St to E Washington St	Bike Lanes	803	$ 1,606	5B/5D	SRTS, TE, BPFP, STP-U	1 to 5
E Newberry St	S Telulah Ave to east city limits	Bike Lanes	6902	$ 13,804	5A	SRTS, TE, BPFP, STP-U	1 to 5
S Olde Oneida St	S Oneida St to E Water St	Sharrows	2577	$ 2,060	5A	SRTS, TE, BPFP, STP-U	5 to 10
S Oneida St *	Midway Rd to E Roeland Ave	Bike Lanes	2767	$ 166,020	5A	SRTS, TE, BPFP, STP-U	10 to 15
S Oneida St	W Seymour St to W Lawrence St	Bike Lanes	4831	$ 9,662	5A/5B/5D	SRTS, TE, BPFP, STP-U	1 to 5
N Oneida St	W Pacific St to W Capitol St	Bike Lanes	10112	$ 20,224	5B	SRTS, TE, BPFP, STP-U	10 to 15
W Packard St	N Locust St to N Richmond St	Bike Lanes	461	$ 922	5B/5D	SRTS, TE, BPFP, STP-U	5 to 10
W Packard St *	N Richmond St to N Division St	Bike Lanes	1313	$ 78,780	5B/5D	SRTS, TE, BPFP, STP-U	5 to 10
W Packard St	N Division St to N Appleton St	Bike Lanes	896	$ 1,792	5B/5D	SRTS, TE, BPFP, STP-U	5 to 10
W Prospect Ave	S Mason St to S State St	Bike Lanes	3156	$ 6,312	5B	SRTS, TE, BPFP, STP-U	5 to 10
W Prospect Ave *	S State St to W Sixth St	Bike Lanes	1634	$ 98,040	5B	SRTS, TE, BPFP, STP-U	5 to 10
W Prospect Ave	W Sixth St to S Oneida St	Bike Lanes	681	$ 1,362	5B	SRTS, TE, BPFP, STP-U	5 to 10

Project	Limits	Facility	Length (ft)	Total Cost	Map	Funding	Term
E Plank Rd	260' east of Tahoe La to 790' east of S Lake Park Rd	Bike Lanes	2266	$ 4,532	5A	SRTS, TE, BPFP, STP-U	1 to 5
Roemer Rd	E Glendale Ave to E Capitol Dr	Bike Lanes	5096	$ 10,192	5B	SRTS, TE, BPFP, STP-U	5 to 10
E South River St	S Olde Oneida St to E John St	Bike Lanes	5748	$ 11,496	5A	SRTS, TE, BPFP, STP-U	1 to 5
W Spencer St	S Linwood Ave to S Mason St	Bike Lanes	2014	$ 4,028	5B	SRTS, TE, BPFP, STP-U	5 to 10
S Telulah Ave	E Midway Rd to E John St	Bike Lanes	9162	$ 18,324	5A	SRTS, TE, BPFP, STP-U	5 to 10
Valley Road	S Oneida St to S Memorial Dr	TBD	TBD	TBD	5A	TE, BPFP	5 to 10
S Walter Ave	E College Ave to S Telulah Ave	Bike Lanes	1558	$ 3,116	5A	SRTS, TE, BPFP, STP-U	1 to 5
E Water St/S Drew St *	S Olde Oneida St to E College Ave	Bike Lanes	1732	$ 103,920	5B/5D	SRTS, TE, BPFP, STP-U	15 to 20
E Wisconsin Ave	N Ballard Rd to N Grand View Rd	Bike Lanes	1165	$ 2,330	5B	SRTS, TE, BPFP, STP-U	1 to 5
				TOTAL: $1,737,430			

*See cross section. Requires road widening

**Plus signing all bicycle routes

Cost by Term (5-Year Increments)

1 to 5**	5 to 10	10 to 15	15 to 20
$365,160	$660,276	$300,934	$411,060

4.2.2 Proposed Routes

The process for developing the proposed bicycle route network was developed utilizing initial input from the Stakeholders Group and the Appleton Trail Advisory Committee. These routes were then mapped and audited using a combination of bicycle and automobile. Some routes remained as initially mapped, while others were eliminated due to perceived difficulty for a majority of bicyclists. Major concerns and barriers are documented in Chapter 1. Additional input was also obtained from Fox Cities Greenways and additional public input elicited at Public Information Meeting #1. The city was divided into 3 sub-areas so they could be drawn at a scale that included road labels. The proposed routes are described below. See Appendix E.

Sub Areas (Maps 5A, 5B, and 5C)

These maps delineate proposed bike routes by facility type. Facility types include:

- Existing Bike Lane: outside city limits
- Existing Bike Route: outside city limits
- Existing Trail: these were identified because they provide key connections
- Existing Paved Shoulder: identified as accommodating bicycle travel
- Proposed Bike Route: the segment functions fine "as is" and should be signed as a route
- Proposed Bike Lane (AADT > 3000): the segment should be included in the bicycle network with a bike lane
- Proposed Trail: future trails identified on the city of Appleton database

- Proposed Bicycle Accommodations: these corridors should be reconstructed with bicycle and pedestrian facilities; both off-street or on-street facilities should be considered
- Bicycle/Automobile Conflict Area: usually an intersection that requires a cyclist to take a travel lane; there may also be a short signal phase or other physical condition that reduces cyclist comfort
- Improve Trail Connection: some trails terminated near roadways with no clear delineation for continued travel
- Sidewalk Connection: a short-term solution in a congested area is to encourage cyclists to use the sidewalk until bicycle facilities can be installed
- Bike/Ped Bridge: there is a bicycle and pedestrian overpass that crosses STH 441on Carpenter Street

Downtown (Map 5D)
The downtown is difficult to negotiate on bicycle. College Avenue has narrow travel lanes, on street parking, and a high frequency of turning movements and one-way streets. No bicycle route will be established on College Avenue. This map was developed at Public Information Meeting #1 to identify preferred routes to downtown on alternative streets. The map also identifies existing and recommended bike rack locations. The intent is to allow cyclists to pedal up to College Avenue, then either park their bicycle at a corner bike rack, or walk the bicycle to another rack location closer to their destination. The intersection of College Avenue and Division Street has been identified as a "Study Area" because bike racks are needed in that location but may interfere with current activities (such as placement of food vendor trailers near the Performing Arts Center).

Sample Downtown Bike Rack Placement (Map 5E)
To illustrate the intent of the downtown bicycle routes and parking locations (Map 5D), this map was developed to show sample design and placement of bicycle racks along College Avenue. Bicycle racks are shown in groups at the corners of the intersections, with single racks located mid-block or near business entrances. Bicyclists will not be allowed to ride their bicycles on the sidewalk, and "dismount zones" signage may be utilized to help reinforce compliance. A sample on-street bike corral is also shown. These may be helpful during Farmer's Markets or other downtown events that draw large numbers of cyclists. They may either be temporary or permanent structures depending on use.

College Avenue Bridge Approach Map (Map 5F)
An area map was prepared for the western approach to the College Avenue bridge to demonstrate how bicyclists should handle the transition from bike lanes on the bridge, to no bike lanes west of S Alton Court on College Avenue (where inadequate width exists for bike lanes). The options for cyclists include taking the travel lane before/after entering/exiting the bike lane, or using the adjacent sidewalk. Depending on weather conditions and the speed of the cyclist, both on- and off-street options are viable. Cyclists traveling north off College Avenue, or accessing downtown Appleton, should use the sidewalk network to access N Green Bay Rd/N Catherine St. or continue on College Avenue to N Rankin St.

4.2.3 New Urban Sections
The Improvements Table (Table 4-1) includes two pricing structures for bike lanes. Most bike lanes will be able to be installed within the existing built right-of-way. This will involve moving paint, such as centerlines, the possibility of removing on-street parking in select locations, or

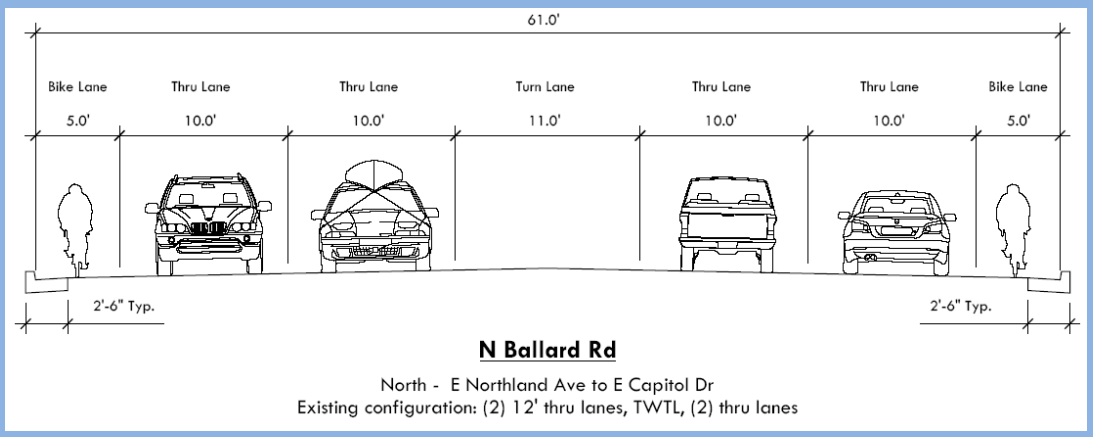
simply adding pavement markings for bike lanes where the travel lanes are wide enough. However, some segments will require construction of an urban roadway (including curb and gutter) which is forecast to occur with roadway reconstruction. These segments exist due to annexation from rural areas and will eventually be upgraded because the functional classification of the roadway is changing (increasing traffic), or to ensure proper drainage and stormwater control. Reconstruction may also be necessary for road widening. Differences in pricing are described below.

Striping Bike Lanes

This includes striping a bike lane without widening the road. This is a relatively inexpensive option with costs from $1/linear foot (paint) to $2.50/linear foot (epoxy). Signing bike lanes is an additional expense.

If we look at N Ballard Road, for example, from E Northland Ave to E Capitol Dr there is enough room for bike lanes from curb-to-curb with four (4) twelve-foot travel lanes and a thirteen-foot two-way left turn lane. See Figure 2 for a possible reconfiguration of this segment.

Figure 2: Potential Reconfiguration of N Ballard Road (with bike lanes)



Construct Urban Roadway w/ Bike Lane

This includes constructing urban roadway with curb and gutter. Or, if curb and gutter already exist, it may also include widening the roadway to accommodate bicycles and painting a bike lane. Typical costs for this improvement average $60/linear foot.

4.2.4 Parking Lanes (Bike Lane Feasibility)

On-street parking is common on many residential and commercial streets in Appleton. On-street parking can provide a buffer for pedestrians, and increases access to buildings facing streets for automobile drivers. When trying to accommodate bicycles, however, parking lanes can interrupt the flow of bicycles if they are operating in the right-most portion of the roadway. Operating too close to a parked vehicle also poses a safety risk if a door is

opened into the street. This crash type is often referred to as "dooring" and the area of conflict is often called the "door zone". Bike lanes should be placed to avoid possible conflicts between users within the door zone.

This plan advocates for bike lanes over parking lanes where insufficient width for both facilities exists. In an effort to identify possible locations where on-street parking may need to be removed, a series of maps were created. The "Proposed Bike Lane Feasibility" maps (Maps 6A, 6B, and 6C) identify widths where bike lanes and/or parking lanes would be allowed based on these labels:

- ***Bike lanes only***: the roadway is only wide enough for travel lanes and bike lanes
- ***Bike lanes and parking lanes***: the roadway will accommodate both bike lanes and parking lanes in addition to the current configuration of travel lanes
- ***Bike lanes and one parking lane***: the roadway will accommodate on-street parking on only one side of the street in addition to existing travel lanes and bike lanes
- ***Insufficient width for bike lanes or parking lanes***: roadways that do not allow for bike lanes or parking lanes in the current configuration

Cross-sections (alternative configurations) for each road segment identified as a component of the Appleton bicycle network are located in Appendix F. These figures identify an alternative roadway design that would improve the level of service for bicyclists. Roadways that cannot accommodate bike lanes as currently constructed are labeled "Insufficient Width".

4.2.5 Improvements Phasing Map

An improvements phasing map for the entire city was developed to demonstrate the potential growth of the bicycle network in 5-year increments over the next twenty years. See Map 7A in Appendix G. Maps 7B-7D are sub-area maps containing the same information as the aggregate map (7A), but at a larger scale for each sub-area.

Scheduling, available budget, and competing interests may all impact development of the bicycle network. The improvements phasing map was developed to show a potential progression of the bicycle network over time. There may be segments of the network that are developed outside the 5-year range specified. This plan should be reviewed and amended as appropriate to track progress toward achieving a complete interconnected bicycle network in Appleton.

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5 IMPLEMENTATION

This chapter includes strategies for implementing, funding, and updating this plan. It also includes an action table that consolidates recommendations found within this plan.

5.1 Using this Plan

The success of this plan is largely dependent on the actions and support of local people. Implementation of roadway improvements, bike facilities, and programs are the responsibility of local individuals, businesses, adjacent communities, the City of Appleton, and regional and state authorities. This section identifies strategies to grow local interest for enhancing bicycling in Appleton.

5.1.1 General Actions

Individuals

a. Wear a helmet when bicycling and respect the rules of the road.
b. Talk to employers about providing incentives and bicycle parking facilities.
c. Form, or become active in, local bicycle focus groups. The purpose of these groups is to influence local policies and capital improvement project decisions.
d. Indentify strategies to beautify a walking or bicycling route by working with local parks departments, master gardeners, and others.

Commercial Businesses

a. Encourage employees to bicycle and walk to work by offering incentives and by providing needed facilities at the workplace such as bicycle parking and improved connections to the site.
b. Sponsor bicycling promotional activities like "Bike Rodeos" and "Bike to Work Days" to show support and create enthusiasm.
c. Promote the use of the federal Bicycle Commuter Tax Provision.

Health and Educational Institutions

a. Offer bicycling and pedestrian education curricula.
b. Continue to promote Safe Routes to School campaigns.
c. Continue to grow current Appleton Area School District and YMCA of Fox Cities bike to work programs and incentives.
d. Work with local health organizations to increase the availability of programs, information, and organizational capacity to hold and market events.

City Agencies and Organizations

a. Integrate bicycling and walking into city comprehensive transportation and land-use plans.
b. Promote bicycling through special events.
c. Improve facilities for bicyclists and integrate improvements into the Capital Improvement Plan.

d. Provide and regularly maintain bicycle route maps and signs.
e. Act as a "clearinghouse" for bicycle and pedestrian related information.
f. Annually monitor and evaluate the progress of projects and condition of existing facilities.
g. Update plans for non-motorized transportation with the same frequency as other transportation plans and continue to explore alternative funding sources.
h. Develop a bicycle and pedestrian subcommittee to coordinate local bicycle and pedestrian improvements and coordinate with the county and other jurisdictions on multimodal transportation initiatives. This committee should be part of a transportation committee as opposed to recreation committee to emphasize biking and walking as transportation alternatives, not just recreational pursuits.

5.1.2 Formal Plan Approval

Adoption and subsequent Department of Transportation acceptance of a local bicycle facilities plan increases the likelihood of acquiring state funding and communicates to the state the city's intention of growing bicycling for transportation.

This plan records desires and itemizes recommendations for future bicycle improvements. It should be viewed only as the first step in the development of a bicycle network. This On-Street Bike Lane Plan should be approved by the local governing body. A copy of the resolution of approval can be found in Appendix I.

5.1.3 Amending the Plan

Plan amendments are common and should be considered part of the planning process. They frequently represent good implementation or plan usage and should be acceptable for consideration by local decision-makers. Amendments must follow the same process as the original plan and should be developed in coordination with the Municipal Services Committee before presented to Common Council for approval. Amendments generally prolong the effectiveness of the parent plan.

5.1.4 Oversight Committee

This plan was prepared with review by a Stakeholders Group appointed by the Municipal Services Committee. This ten-person committee included a diverse membership and was instrumental in developing plan strategies. This group should be maintained as a special committee and charged with oversight and implementation of this plan.

5.1.5 General Implementation Strategies

Listed below is a summary of key implementation strategies. Appleton will be the lead implementation authority for local projects, however joint cost sharing approaches may be reasonable for projects, such as state highway improvements, or where more than one jurisdiction has authority.

General strategies to assist all entities, agencies, and individuals in carrying out this plan are offered below:

a. Whenever possible, implement projects based upon need-based priority, whereby improvements are first made to critical missing links and the least suitable portions of the roadway system.

b. Allocate annual funding to implement the citywide bicycle network and to develop partnership arrangements for implementation of projects which involve other jurisdictions. Prioritizing funding should be overseen by the Oversight Committee (See 5.1.4).
c. Whenever possible, maximize use of available funding to secure matching funds from state, federal and private funding sources. As a companion strategy, seek private donations to secure grant matches.
d. Show public support for multimodal transportation and recreational trails funding at the state and federal level.
e. Maximize opportunities to implement bicycle facilities and sidewalks as a routine part of all new development and roadway retrofit projects. This includes support for "Complete Streets" legislation at the state (adopted July 2009) and local levels.
f. Continue the work of the Stakeholders Group (Oversight Committee used to generate this plan) to routinely reprioritize projects and assess levels of need based upon development patterns or emerging destinations.
g. Actively involve Fox Valley residents in the ongoing implementation and operation of new facilities through Friends groups and Adopt-a-Trail programs.
h. Actively involve local businesses in providing convenient and secure bicycle parking.

5.2 Facility Costs and Funding Opportunities

This section explores typical costs for installation of bicycle facilities and potential sources of funding. Costs are provided as estimates to enhance the transportation network for bicycle accommodation. However, these costs should not be seen as additions to the transportation system, rather, they are elements of a complete street that functions for all potential transportation users. Including these facilities in preliminary designs and estimates now will result in lower overall costs than retrofitting facilities at a later date.

5.2.1 Facility Development Costs

General costs for projects related to bicycle accommodation are shown below. Not all facilities are recommended for Appleton, but can be used to compare alternative design scenarios.

5' Sidewalks: $4 per square foot (concrete).

10' Paved Trail Facilities: $150,000 per mile, including excavation, base course, asphalt, salvaged topsoil, and drainage (assume two pipes per mile).

10' Gravel Trail Facilities: $85,000 per mile, including excavation, base course, and salvaged topsoil.

Bicycle Rack (inverted U): $99-250 each

Constructing a Bike Lane (5'): $60 per linear foot (urban cross section includes curb and gutter)

Crosswalk (wide continental pattern): $300 each

Curb ramp (with truncated dome): $1,500 each

Pedestrian Refuge Island: $15,000 each

Striping (Bike Lane): $2.50 linear foot (epoxy) or $1 per linear foot (paint).

Stencils: words each ($60 epoxy, $40 paint), symbols each ($120 epoxy, $70 paint), arrows each ($120 epoxy, $70 paint).

Aluminum Sign Panel: $20 per square foot (example: D11-1 bike route sign is 24"x18" = 3 square feet * $20 = $60)

Steel Sign Post: $11 per linear foot [example: sign mounted at 7' would be 7' (bottom edge of sign above ground) + 2' (height of sign) + 2.5' (length of post to ground) = 11.5 feet *$11 = $126.50]

This plan recommends a sign plan is developed that identifies placement of signs for all proposed routes and bike lane or shared lane locations prior to installation of signs.

5.2.2 Facility Maintenance Costs

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 a per mile/per year basis.

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

Paved Paths: $600 - $900 per mile, including barriers, spot repairs, vandalism, striping stencils, clean-up and shoulder grading (MinDOT and C. Madison, WI)

Gravel Paths: $1,200 - $1,500 per mile, depreciation and spot repairs, signs, litter clean-up and mowing ditches (WDNR)

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

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

Maintenance costs can be offset through cooperative agreements with public and private agencies. Adopt-a-Bikeway programs and other similar programs can provide reliable routine clean up and repair activities.

5.2.3 Funding Sources

Appleton should appropriate annual funds for bicycle and pedestrian improvements just as they do for other roadway projects. In addition, many of the proposed bicycle projects may be eligible for state or federal funding.

As part of the state and federal initiatives to enhance bicycling and walking as regular transportation modes, several grants and funding sources are available to communities for planning, facility development, and land acquisition.

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. City officials should coordinate with WisDOT's Northeast Region for available grant funding.

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

The following programs provide funds 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.

Contact: John Duffe, State Coordinator at 608-264-8723 or john.duffee@dot.state.wi.us

Bicycle and Pedestrian Facilities Program (BPFP)

Program description: Bicycle and pedestrian facility projects costing $200,000 or more and planning projects costing $50,000 or more are eligible for BPFP 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 the other 20%. Because of the similarities between the BPFP and the Transportation Enhancements (TE) program objectives and eligibility criteria, applications and funding for both programs are undertaken together.

Contact: John Duffe, State Coordinator at 608-264-8723 or john.duffee@dot.state.wi.us

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

Contact: Renee Callaway, State Coordinator at 608-266-3973 or renee.callaway@dot.wi.gov

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.

Contact: Robert Wood Johnson Foundation http://www.rwjf.org/applications/index.jsp

Wisconsin Department of Natural Resources Stewardship Program (Stewardship)

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. This program is primarily used for acquisition of park lands.

Contact: Sue Kocken, Environmental Grant Specialist for the Northeast Region, Wisconsin Department of Natural Resources, 920-662-5487 or Susan.Kocken@Wisconsin.gov

Wisconsin DNR Recreational Trails Program (RTP)

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. Eligible projects include:

- Maintenance and restoration of existing trails.
- Development and rehabilitation of trailside and trailhead facilities and trail linkages.
- Construction of new trails (with certain restrictions on Federal lands).
- Acquisition of easement or property for trails.

Contact: Sue Kocken, Environmental Grant Specialist for the Northeast Region, Wisconsin Department of Natural Resources, 920-662-5487 or Susan.Kocken@Wisconsin.gov

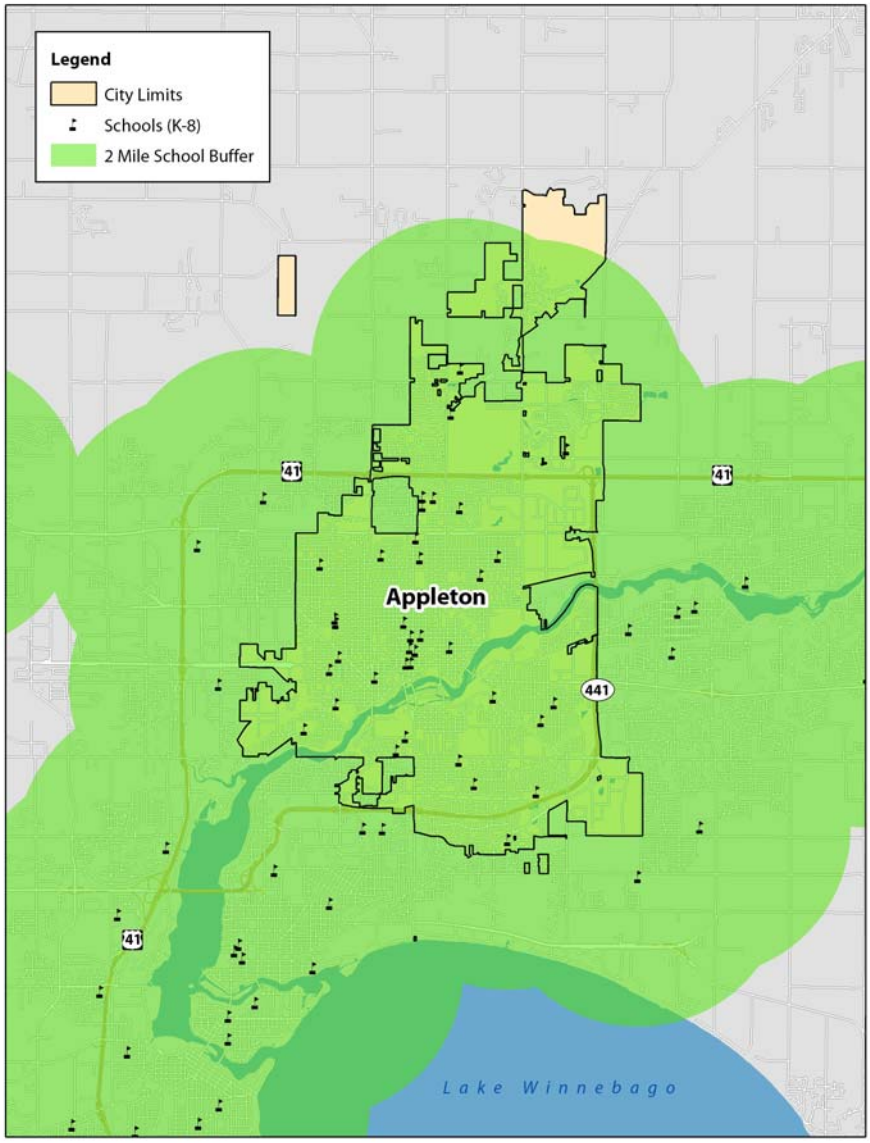
Safe Routes to School (SRTS)

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 (K-8). Safe Routes to School grants fully fund accepted projects (100% funding). A majority of Appleton is eligible for SRTS funding. See Figure 1.

Contact: Renee Callaway, Wisconsin Safe Routes to School Coordinator, Wisconsin Department of Transportation at 608-266-3973 or renee.callaway@dot.state.wi.us

Figure 1: Appleton Areas Eligible for SRTS Funding (shown in green)



5.3 Action Plan

The following operational recommendations focus on education, encouragement, enforcement, and evaluation. Attention to operational procedures and programs is critical if Appleton wants to improve the level of safety and convenience for bicyclists. This list also provides a number of initiatives that can be worked on by independent groups or organizations while bike facilities are being designed and constructed.

Table 5-1 identifies the strategy type, action to initiate, a timeline for implementation, and who should take the lead role. See Chapter 4 for a complete listing of recommendations (Sections 4.1.2 through 4.1.5).

Table 5-1: Action Plan

Strategy Type	Action	When	Who
Education includes identifying safe routes, teaching proper riding techniques, and how to handle potentially dangerous situations. This strategy is closely tied to Encouragement strategies.	Work with volunteers and staff from area organizations and bicycle businesses to promote bicycle repair education and training.	Immediate	Appleton, Region, Volunteers
	Create informational packets demonstrating the benefits of active transportation modes.	Immediate	Appleton, Region, Volunteers
	Identify League Cycling Instructors through the League of American Bicyclists to teach cyclists to ride safely and confidently.	Periodic	Volunteers
	Work with local bike shops, service organizations, and other agencies to sponsor helmet giveaways and fit clinics.	Ongoing	Volunteers
	Encourage inclusion of bicycle and pedestrian education as part of Driver Safety Education programs within the community.	Immediate	Appleton, Region, Volunteers
	Create PSA's for use on community radio and television programming.	Immediate	Appleton, Region, Volunteers
	Seek the help of volunteers to run programs and seminars on safe bicycling.	Periodic	Appleton
	Consider holding periodic bicycle rodeos.	Ongoing	Appleton, Region
	Create a Bicycle Ambassador Program	Long-Term	Appleton
Encouragement combines the results of the other "E's" to improve knowledge, facilities and enforcement to encourage safe bicycling. Most importantly, encouragement activities build interest and enthusiasm.	Promote the idea of employer incentive programs to encourage commuters to try bicycling and walking to work	Periodic	Appleton, Region, Volunteers
	Contact local governments and police departments to develop a *Sunday Parkways* event	2013	Appleton, Region, Volunteers
	Promote public bicycle rides, events, programs, and bicycle advocacy groups including Bike to Work Week, bike swaps, club rides, fundraising events, and competitive sporting events	Ongoing	Appleton, Region, Volunteers
	Commit Appleton to becoming a recognized Bicycle Friendly Community (BFC)	2012	Appleton
	Include a "transportation" page on the city website that includes transit, bicycle and pedestrian maps, flyers, and materials	Immediate	Appleton
	Develop a detour protocol when bicycle and pedestrian facilities are under construction	Immediate	Appleton
	Explore developing bicycle parking standards, like automobile parking standards, for multifamily residential and commercial developments	Immediate	Appleton
	Provide additional bike parking at major events and event centers.	Immediate	Appleton

Strategy Type	Action		Who
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.	In conjunction with local and county police, hold periodic traffic stops where motorists, bicyclists and pedestrians may be stopped, given a Share the Road flyer, and have the opportunity to provide feedback to officers regarding the campaign	Periodic	Appleton
	Implement a trained bike patrol officer or Community Service Officer program during special events to engagement other bicyclists and model good behavior.	Immediate	Appleton
	Send an officer to the WisDOT-Bureau of Transportation Safety (DOT-BOTS) Pedestrian and Bicycle Law Enforcement training course, new recruit training, and refresher courses	Immediate	Appleton
	Consider installing driver feedback signs to display driver's rate of speed in real time	Long-Term	Appleton
	Encourage police to work with local schools, businesses, and residents to stage periodic enhanced enforcement efforts in areas where motorists exhibit unlawful or dangerous behavior	Immediate	Appleton, Region, Volunteers
Evaluation of bicycle and pedestrian activity includes documenting trends and preferences.	Work with local police, volunteers, and sports associations to perform bicycle counts at least once every two years.	Periodic	Appleton, Region, Volunteers
	Perform a regular tally of bicycle rack usage and document requests for bicycle racks as part of street reconstruction projects.	Periodic	Appleton
	Consider developing an online reporting instrument where bicyclists and pedestrians who encounter barriers, such as bad pavement or overgrown shrubs, can report issues.	Immediate	Appleton
	Provide transportation surveys for residents and visitors that wish to comment on the ease of use for each transportation mode in the city, including integration of multiple modes of transportation, to identify gaps in the system.	Immediate	Appleton

Appleton: City of Appleton departments and agents

Region: Fox Cities municipalities, school districts, counties, and regional agencies

Volunteer: volunteers can help fill a resource gap through donations, special events, or assistance in implementation

Immediate: initiate as soon as possible

Ongoing: initialize immediately or continue to operate

Periodic: perform on a semi-regular basis

Long-Term: this action is not a current priority or requires resources that are not currently available

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Appendix A:

Map #1 Bicycle Trip Generators (Origins and Destinations)

Appendix B:

Map #2 Bicycle Routes Identified by Stakeholders

Appendix C:

Map #3 Opportunities and Constraints (Bicycle Audit)

Appendix D:

Map #4 Bicycle Level of Service

Appendix E:

Map #5 Proposed Bicycle Routes

Appendix F:

Map #6 Proposed Bike Lane Feasibility (Maps and Cross Sections)

Appendix G:

Map #7 Improvements Phasing

Appendix H:

Public Participation Results and Proceedings Memoranda

Stakeholder Meeting #1
Appleton On-Street Bike Lane Plan
Thursday, October 22, 2009

This memo provides an overview of the public participation process and meeting outcome for Stakeholder Meeting #1 held as part of the Appleton On-Street Bike Lane Plan process.

This was the first official meeting for the project and was used to catalogue existing and outstanding data, review the timeline, discuss hopes and concerns for the plan, and to delineate alternative bicycle routes for review. The results of the bicycle mapping exercise generated Map #2: Bicycle Routes Identified by Stakeholders.

Public Process

The City of Appleton assembled the Stakeholder's Committee to represent a broad cross-section of interests and user groups. This group will be the review authority for the working draft and will meet at least three times to discuss progress and provide direction and feedback on recommendations produced during plan development. The committee contains representatives from the following groups or organizations:

- City of Appleton Police Department
- City of Appleton Trails Advisory Committee
- WisDOT
- Appleton Papers Activate Fox Cities Group
- Fox Cities Greenways
- ECWRPC
- City of Appleton Valley Transit
- City of Appleton Engineering Department
- City of Appleton Municipal Services Committee
- Appleton Bicycle & Fitness
- City of Appleton Department of Community Development

There will also be two public meetings held as part of the plan development process. Both meetings will occur as part of a regular Municipal Services Committee meeting. The process is anticipated to be completed in six months, with final deliverables received in April 2010 (Edit: due to project delay, the timeline will be pushed back approximately 3 months – July 2010).

Hopes and Concerns

Committee members were asked about hopes and concerns for this process, and possible or preferred outcomes for implementation of the plan recommendations. Results follow:

- On-street bikes lanes need to serve a transportation function (not just recreation)
- The Trails Advisory Committee has developed a preferred bicycle routes map and realizes not all streets in city are suitable for bicycle travel
- Limiting parking on some streets would help accommodate cyclists
- This plan should identify facilities and programs to:
    - Increase the number of commuters
    - Reduce automobile traffic congestion
    - Effect the number of parked cars in certain areas
    - Increase health communitywide
    - Increase safety for bicyclists
    - Improve signage for wayfinding on bicycles
    - Enhance connections to priority destinations

- Use existing trails as a starting point and create on-street segments to link these facilities to other recreational, work, or commercial destinations
- There are lots of jurisdictions involved. This plan needs to recognize the value of linking to other communities and regional destinations as well as provide a framework for more effective intergovernmental cooperation
- Outcome of plan will be that "bikes belong" and will be considered alongside cars as "traffic"
- Sharing roads is important, but sometimes existing road widths go from wide to narrow and create user conflicts; plans should emphasize continuation of facilities for as long as possible along primary routes
- Education is key (need to educate potential bicycle users, as well as inform motorist behavior)

Other notes:

- Plan will be used for budgeting purposes so construction estimates need to be included
- The plan will include facilities designs, or typical cross-sections, for facilities design (such as bike lanes with on-street parking, intersection treatments, etc.)
- The City of Appleton Capital Improvement Plan identifies sections of roadway that will be redesigned, but there isn't necessarily a design in mind. The plan has the capability to effect the facilities design on these roadways

Bicycle Route Alternatives

The committee was asked to review three sub-area maps that divided Appleton into smaller geographic areas. The maps contained preliminary recommendations for on-street bicycle accommodation based on existing city data. The committee reviewed the maps and identified additional routes that provided easy access to key destinations. Major activity generators such as major employment centers, parks, and schools, were also identified on the maps as were difficult intersections and other barriers that impeded safe bicycle transportation. The aggregate map (Map #2: Bicycle Routes Identified by Stakeholders) is provided at the end of this memo. The routes identified will be tested using a combination of bicycle and "windshield" field review. After the field review, the consultant will generate a series of recommended routes that will be brought back to the committee for review.

Next Steps

The consultant will field review alternative bicycle route segments and draft a recommended bicycle route map. This subjective map will be accompanied by a bicycle level of service analysis to provide objective analysis on street segments. These maps will be reviewed by the Stakeholder Committee at the next meeting. A public meeting will be planned for 2010 to verify recommended routes, report on progress, and gather additional public input on preferred route segments and on-street facilities.

Stakeholder Meeting #1b
Appleton On-Street Bike Lane Plan
Thursday, February 25, 2010

This memo provides an overview of the public participation process and meeting outcome for Stakeholder Meeting #1b held as part of the Appleton On-Street Bike Lane Plan process.

This was the first official meeting for the project since it was delayed over contract issues. The first meeting (October 2009) with this group was used to catalogue existing and outstanding data, review the timeline, discuss hopes and concerns for the plan, and to delineate alternative bicycle routes for review. The results of the bicycle mapping exercise generated Map #2: Bicycle Routes Identified by Stakeholders. Since this meeting, the stakeholder routes were audited, and a series of maps were created – Map #3: Opportunities and Constraints (Map 3a, 3b, 3c).

Meeting #1b was used to reacquaint committee members with the plan process and goals, to verify preferred facilities types (bike lanes, trails, etc.), and to discuss the results of the bike audit.

Public Process
The City of Appleton assembled the Stakeholder's Committee to represent a broad cross-section of interests and user groups. This group will be the review authority for the working draft and will meet at least three times to discuss progress and provide direction and feedback on recommendations produced during plan development. The committee contains representatives from the following groups or organizations:

- City of Appleton Police Department
- City of Appleton Trails Advisory Committee
- WisDOT
- Appleton Papers Activate Fox Cities Group
- Fox Cities Greenways
- ECWRPC
- City of Appleton Valley Transit
- City of Appleton Engineering Department
- City of Appleton Municipal Services Committee
- Appleton Bicycle & Fitness
- City of Appleton Department of Community Development

There will also be two public meetings held as part of the plan development process. Both meetings will occur as part of a regular Municipal Services Committee meeting. The process is anticipated to be completed in six months, with final deliverables received in July 2010.

Review and Discuss Maps
Committee members were asked to review the maps created to date. The comments for each map are identified below by map number and title.

Map #1: Bicycle Trip Generators

a. Include any trails or routes outside the city so that connections can be established to/from Appleton
b. Include transit routes to better integrate multimodal transportation

Map #2: Bicycle Routes Identified by Stakeholders

a. Include bike lanes on STH 96 (W Main St) between Grand View Road and Adams Street (Little Chute)

b. Add Activate Fox Cities bike route from First Street/STH 114 on the south (Neenah) to Valley Road/STH 47 on the north (Appleton)

Map #3: Opportunities and Constraints (divided into 3 sub-areas – 3a, 3b, 3c)

Sub-Area 3a

a. No Badger Ave route is necessary
b. Connect STH 96 to N. Ballard Rd (current route might utilize Amelia St to connect to N Owaissa St)
c. There are existing bike lanes on STH 96 (W Main St) from Grand View Road to Adams St (Little Chute)

Sub-Area 3b

a. There is an existing striped shoulder that would accommodate bikes on N. Oneida St between E. Capitol Dr and E. Northland Ave
b. N. Meade St is not a good road for bikes between E Northland Ave and E Capitol Dr; there is an off-street facility for bikes north of E. Capitol Dr
c. Roemer Rd is wide enough for bikes now, but there should be a policy determination about whether bikes should be directed into the industrial park where conflicts with trucks can be expected
d. E Capitol Dr east of N. Ballard Rd is wide enough for bike lanes now
e. E. Service Rd south of E Northland Ave has no outlet; move route one street south to E Longview Dr
f. Recommend moving centerline and on-street parking on N Oneida St
g. Double stop sign at railroad tracks on N Owaissa St near E Randall is not optimal for bikes (also a hill)
h. Need to clarify where bikes should go after exiting the west end of the College Avenue Bridge; there is a small sidewalk connection that links to N Green Bay Rd that might be utilized
i. N Bennett St currently has a lot of stop signs and yield signs (cyclists are unlikely to stop; or will feel frustrated with frequent stops)
j. Identify a western route from Downtown – possible connections include W Lawrence St, W Spencer St, and W Eighth St

Sub-Area 3c

a. Discussion about how to connect Appleton North High School and Fox Valley Lutheran High School along Edgewood Dr

Other Comments

a. Ballard Road is scheduled for reconstruction/redesign in 2013 – it should link up with the bike lanes on STH 96 (W Main St)
b. Wisconsin Avenue (STH 96) has been redesigned but will not include bike lanes
c. City of Appleton/Town of Grand Chute and Outagamie County planning to hire a consultant in 2011 for design alternatives for CTH JJ

Discuss On-Street Facilities Types and Bike Rack Designs

Committee members were asked to review two facilities boards. The comments for each board are identified below by board title.

Bicycle Facilities Types (Board)

a. Add a TWLTL (Two-Way Left-Turn Lane) design to the board – this might be an option on such roads as N Ballard Rd when redesigned
b. Sharrows might be used on recommendations maps (Map 4a, 4b, 4c); consultant will differentiate facilities type by color on recommendations maps

Bicycle Parking Facilities (Board)

a. Benches by bike racks would be nice so that cyclists can change their shoes
b. Proper installation of bike parking facilities is essential (there are examples of improperly installed hitch-post racks on College Ave; see Figure 1)
c. Utilizing the appropriate bike parking facility is important; don't use "ribbon" racks or "wheel benders" (See Figure 1)

Next Steps

Draft bike routes will be developed based on the results of the Opportunities and Constraints maps (3a, 3b, 3c) and committee response to comments identified along proposed routes. The methodology for assigning facilities type will include a Bicycle Level of Service Analysis that will be used on arterial and collector streets where routes might be appropriate. Based on the results of the BLOS analysis a bike lane may be recommended as the preferred treatment, or the route may be altered if it's determined bicycles cannot be safely accommodated without a major street reconstruction. Map 4a, 4b, 4c: Proposed Bike Routes will be generated based on these data. Segments recommending bike lanes will be identified separately from segments that do not require separate bicycle facilities. In addition, a separate downtown sub-area plan will be developed to identify routes and parking locations for bicyclists accessing College Avenue businesses.

A Stakeholder's Committee meeting is tentatively scheduled for April 1st at 1pm in Room 6A of City Center. This meeting will be used to review the proposed bike routes and to plan the first public information meeting (PIM #1) tentatively planned for April 27th in Room 6A of City Center (Appleton Public Library is not available; meeting changed from 4/20 to 4/27).

Figure 1: Bike Racks

Top: hitch-post rack is installed incorrectly in Houdini Plaza. The rack should be rotated 90 degrees so it's in-line with bicycles that will be secured.

Bottom: improper bike racks include any rack that does not provide two points of contact with the bicycle. "Wheel benders" are shown at top with a "ribbon" rack below.

Stakeholder Meeting #2
Appleton On-Street Bike Lane Plan
Thursday, April 1, 2010

This memo provides an overview of the public participation process and meeting outcome for Stakeholder Meeting #2 held as part of the Appleton On-Street Bike Lane Plan process.

The purpose of this meeting was to discuss three draft bicycle route maps, facility preferences, and potential policies for facilities design. The meeting was also used to set an agenda for the first public information meeting.

Public Process
The City of Appleton assembled the Stakeholder's Committee to represent a broad cross-section of interests and user groups. This group will be the review authority for the working draft and will meet at least three times to discuss progress and provide direction and feedback on recommendations produced during plan development. The committee contains representatives from the following groups or organizations:

- City of Appleton Police Department
- City of Appleton Trails Advisory Committee
- WisDOT
- Appleton Papers Activate Fox Cities Group
- Fox Cities Greenways
- ECWRPC
- City of Appleton Valley Transit
- City of Appleton Engineering Department
- City of Appleton Municipal Services Committee
- Appleton Bicycle & Fitness
- City of Appleton Department of Community Development

There will also be two public meetings held as part of the plan development process. Both meetings will occur as part of a regular Municipal Services Committee meeting with the first meeting scheduled for April 27th in Room 6A of City Center. The process is anticipated to be completed in six months, with final deliverables received in July 2010.

Review and Discuss Maps
Committee members were asked to review and discuss the draft bicycle route maps. The comments for each map are identified below by map number and title.

Map #4: Proposed Bicycle Routes (divided into 3 sub-areas – 4a, 4b, 4c)

Sub-Area 4a

a. Add a new line type for Appleton Road/S Memorial Dr (this route is part of a multijurisdictional effort to create a bicycle route linking Appleton, Neenah, and Menasha as proposed by Activate Fox Cities). The facility type has not yet been determined (on-street or off-street).
b. There was some discussion about whether there was an existing off-street trail on Midway Road west of S Oneida Street. Aerial photos show the facility to be a sidewalk.
c. A connection from S Oneida Street/Midway Rd north to Valley Road should be added as a long-term improvement.
d. There is a bike/ped bridge over STH 441 connecting Carpenter Street. The bike route should be extended south of the highway to Midway Rd.

e. W Seymour Street should include a bicycle route if a connection on S Oneida Street from W Seymour St to E Fremont St can be established (possible sidewalk connection in the short-term).
f. E. Wilson Ave from S Jackson St to Southwood Dr could be a bike route.
g. East of the city there will be an off-road trail constructed from approximately Valley Ln to Manitowoc Rd.
h. Extend bike route on E Newberry St to STH 441 where it connects outside city limits to W Kimberly Ave which is an existing bicycle route.
i. Add a sidewalk connection on W Wisconsin Ave between the existing off-street trail and S Linwood Ave (near Badger Avenue).

Sub-Area 4b

a. Change the segment of S Matthias St between E Bona Ave and E John Street from bike lane to bike route.
b. Connect N Oneida St/W Pacific St to downtown.
c. Identify STH 96 as having existing bicycle lanes east of Grand View Rd.
d. Identify N Ballard Rd with bike lanes between E Wisconsin Ave and E Capitol Dr. This is a long-term improvement.
e. Identify a sidewalk route on N Ballard Rd from E Wisconsin Ave to Amelia St. This is a short-term connection.
f. There is a pedestrian connection on W Glendale Ave across the railroad tracks near N Birchwood Ave. Change the route from W Marquette St to W Glendale Ave through this connection and to the west (N Rexford St to W Brewster St to Fox Valley Technical College).

Sub-Area 4c

a. Add a new line type for Edgewood Dr (CTH JJ) between N Meade St and the eastern terminus of the Apple Creek Trail.

Other Comments

a. Map 4d will be a downtown-specific map; it has not yet been prepared.
b. A new map showing parking restrictions will be created and overlaid onto the Proposed Bicycle Routes Map to identify where parking might need to be removed.
c. City of Appleton/Town of Grand Chute and Outagamie County planning to hire a consultant in 2011 for design alternatives for CTH JJ.

Policies/Goals for Facilities Design

Committee members discussed policies for bicycle facilities design. In particular, goals for placement of bicycle routes, intersection design, and on-street parking. A discussion follows each topic below.

Frequency of Bicycle Facilities Goal

There was a discussion about development of a goal stating bicycle accommodations should be established every ½ mile in Appleton (½ mile was discussed, other densities would be considered). This would allow reasonable access to an established bicycle route from anywhere in the city. The consultant posted a question on the Association of Pedestrian and Bicycle Professionals asking for comparable cities that offer such a policy. The responses indicated that most cities that have developed a goal or a policy for bicycle accommodations require bike lanes on all arterial and collector streets when they are reconstructed or widened. Though there were some communities, like Roseville, CA that require a designated bikeway every 1/3-mile (where feasible). Communities in Canada also tend to have policies on this subject including the City of Vancouver which requires bicycle routes spaced approximately 1km apart (about ½ mile). Vancouver tries to space their bike boulevards parallel to their arterials.

Intersection Design Policy

There are two general design approaches for accommodating bicycles at intersections. The first approach is to drop a bike lane until after the intersection. This requires a cyclist to take a travel lane with automobile traffic. However, where sufficient width exists, a separate through bike lane should be placed to the right of the through travel lane unless conflicting with right-turning traffic. It is likely that in Appleton, due to the presence of a left-turn lane and insufficient room to add bike lanes at many intersections, dropping the bike lane will be the preferred option.

The second approach is to stripe the bike lane all the way to the stop line or crosswalk of an intersection. Various treatments can be used if there are dedicated turn lanes. Possible intersection scenarios are detailed below.

a. Bike Lane at Controlled Intersection: bike lane stripe should end at stop line or crosswalk. Bike lanes are generally not striped through controlled intersections, however, dashed lines may carry through some complicated intersections to identify lane positioning.
b. Bike Lane at Intersection with Right-Turn Lane: bike lane stripe should be located left of right-turning vehicles and lanes should not be marked on streets with multiple right turn lanes.
c. Bike Lane at Intersection with Left-Turn Lane: bike lane stripe should be located to the right of left-turning vehicles.
d. Bike Lane at Roundabout: bike lane is discontinued 35-65 feet prior to a traffic circle or roundabout and is not marked on the circular roadway. Bikes take a travel lane or if there is a separated path constructed for non-motorized traffic, cyclists may take the path around the circle.

Intersection policies will be developed more thoroughly in the plan document and typical plan layouts will be provided to show typical designs and spacing.

On-Street Parking Policy

Members of the committee discussed bike lanes and parking lanes and their use together on some segments. The preferred policy, where practicable, is to remove on-street parking where bike lanes are being installed to allow sufficient width for bicycles to operate. SAA will generate a map that overlays the proposed bicycle network to indentify locations where parking restrictions may be required.

Other Comments

a. There is a desire to have map kiosks at trailheads or other strategic locations identifying routes. Some cities place system maps at bicycle parking locations in addition to trailheads.
b. The consultant drove the Fox Cities Greenways/Activate Fox Cities proposed route from First Street and STH 114 (Neenah) on the south to the intersection of Valley Road and STH 47/Memorial Drive (Appleton) on the north. Notes follow:
    i. 1st Street looks good for bikes (there are no existing bike lanes as the map seems to indicate)
    ii. Depere Street contains bike route signs and looks good for bikes
    iii. Appleton Road is wide enough for bike lanes from Depere Street to 9th
    iv. Appleton Road from 9th to Airport Rd is 4-lane and 35mph; suggest alternate route or sidepath
    v. Appleton Road from Airport to Midway has 3' paved shoulder and looks functional for bikes
    vi. Midway to 441 underpass to Appleton city limits (Tuckaway Ln) is very busy; suggest alternate route or sidepath. Also, there is a desire line under 441 showing many pedestrians use this corridor even though there are gaps in the sidewalk network. At a minimum this segment should be updated with sidewalk facilities.

Next Steps
Map 4a, 4b, 4c: Proposed Bike Routes have been edited. A subsequent parking map will be developed to show on-street parking and overlaid on proposed bike route maps to identify locations where parking restrictions may need to be placed. The consultant will also develop a downtown specific map to identify gateways for bicyclists to enter downtown. A bicycle level of service map is also being generated and will be distributed to committee members before PIM #1.

A public information meeting (PIM #1) will be held Tuesday, April 27th at 5:30pm in Room 6A of City Center. The agenda will include a formal presentation by the consultant (20 minutes), a hopes and concerns exercise (20-40 minutes) and review of displays including maps generated to date (30 minutes).

Public Information Meeting #1
Appleton On-Street Bike Lane Plan
Tuesday, April 27, 2010

This memo provides an overview of the public participation process and meeting outcome for Public Information Meeting #1 held as part of the Appleton On-Street Bike Lane Plan process.

The purpose of this meeting was to discuss results of the planning and public information process, to obtain feedback on the proposed bicycle route maps, and to generate a downtown routes map. The meeting also provided a venue for discussion and interaction of bicycling advocates.

Public Process
The City of Appleton assembled the Stakeholder's Committee to represent a broad cross-section of interests and user groups. This group is the review authority for the working draft and will meet at least three times to discuss progress and provide direction and feedback on recommendations produced during plan development.

There will also be two public meetings held as part of the plan development process. This memo concerns the first of these two meetings, the public information meeting, held April 27th in Room 6A of City Center. There will also be a public meeting held before the Municipal Services Committee when the plan is in draft form.

Meeting Notices and Turnout
The meeting was publicly noticed and flyers were posted. The meeting was attended by approximately seventy (70) individuals including members of the local news media (print, radio, and television) who summarized meeting events and preliminary recommendations in articles and newscasts.

Comments on Display Maps
All map products were displayed for public review and comment. Written notes by map title are listed below. (Only maps that received written notes are listed.)

Map 4A: Proposed Bicycle Routes – Sub Area 1

a. Oneida Street is a great street for biking (size) but is unsafe for children; there are at least 5 schools along this road so a painted lane is requested.
b. S Oneida Street is part of a safe routes to school network to Foster Elementary but conflicts with local hospital traffic and busy pedestrian activity on sidewalks makes the street difficult for young cyclists.
c. Can there be an off-road trail developed from Peabody Park to N Ballard Road (through cemetery)?
d. Badger Avenue should be 2-lane with bike lanes on each side.
e. There should be a formalized connection through St. Elizabeth Hospital connecting W Seymour St to S Madison St.

Map 4B: Proposed Bicycle Routes – Sub Area 2

a. Bike lanes on N Drew St would increase functionality for cycling.
b. The centerline on E South River Street should be moved to the center of the road to allow more accommodation for bikes on both sides of the street.
c. Connect S. Walter Ave from E Newberry St to E John St.

Map 4C: Proposed Bicycle Routes – Sub Area 3

a. There should be a northern spur of the Thrivent Trail that connects the existing Hyview Trail west of N Meade Street to Wyndmere Drive.

b. E Edgewood Drive/CTH JJ should be a priority.
c. Please work with the neighborhoods when determining improvement options for CTH JJ.

Map 4D: Downtown Map (meeting participants were asked to draw in favorite roads or segments for accessing the downtown by bicycle)

a. Badger Avenue
b. State Street
c. W Packard Street
d. N Appleton Street
e. W Lawrence Street (from Badger)
f. S Morrison Street
g. S Durkee Street
h. Johnston Street
i. E Washington Street (to east)
j. N Water Street
k. W Sixth Street

Other Comments (comments about maps or routes written on worksheets)

a. On Map 4C, the facilities label "Proposed Bicycle Accommodations" is unclear (editor's note: the facilities type will need to be negotiated by a number of agencies and landowners so it's unclear at this point whether an on- or off-street connection would work best; the designation is a placeholder for a future facility)
b. Painted bike lanes are an absolute must – they identify spaces for bikes and for cars to operate.
c. Would like to see connection of Apple Creek Trail to CB Trail.

Comments on Worksheets

A worksheet was distributed to collect written comments on the process, current conditions for cycling in Appleton, and hopes or concerns about growing bicycling as a regular transportation mode. General comments are summarized below.

What is the ONE thing you truly hope will result from this bicycle plan?

a. SRTS Programming
b. Increased bicycle use for transportation
c. Bicycles being welcomed into the transportation network (promoted, accepted, appreciated)
d. Make drivers more aware of bicyclists
e. Create painted bicycle lanes
f. Dedicated painted lanes without on-street parking
g. Bike lanes are maintained
h. Bicycles become effective year-round means of transportation
i. Create easier way to get to Fox River Mall, Neenah, Menasha, etc.
j. Connectivity to other Fox Valley Communities
k. Better bicycle connections around schools
l. Intergovernmental cooperation on CTH JJ
m. Make downtown more accessible to bikes
n. Make Appleton as accommodating to bicyclists as Minneapolis (MN) or Portland (OR)
o. Gradual transformation from our current driving culture
p. Increase number of cyclists
q. Increased safety for cyclists
r. Ability to enjoy downtown Appleton safely
s. Public education about bicycle rights and rules to encourage commuting
t. Being able to travel around town via bicycle
u. Bike lanes will increase awareness of cyclists

v. Painted lanes will make it safer
w. Increased respect from auto drivers
x. Clearly marked routes through high-traffic areas
y. Educate drivers about safely operating near cyclists
z. Increase SRTS
aa. Make it easier for kids to bike to school
bb. A city ordinance that requires bicycle accommodation on all new city streets
cc. Routes that minimize bike/car conflict while preserving the flow of traffic
dd. Create safe routes between Appleton North HS, Apple Creek YMCA, and the expanding north side of Appleton
ee. Promote SRTS
ff. Develop the W Prospect Trail
gg. Easier and safer routes to school, work, and shopping
hh. Bike lanes on Ballard, Northland, Capital, College, Meade and N Oneida
ii. Install bike route signs ASAP and start public relations campaign
jj. Bike lanes on all minor arterials
kk. Post plans and maps on city's website ASAP
ll. Routes to Appleton North HS
mm. Attract young people and families to Appleton

Hopes and Concerns

HOPES	CONCERNS
Painted lanes to reserve space for bikes	Group rides that do not observe lawful behavior
Educate both drivers and cyclists	Roudabouts can be an impediment
Make Appleton more attractive for creative class	Not involving schools
Multimedia campaign to encourage and educate cyclists	Wisconsin Ave will not have bike lanes
Prioritize routes (signs up ASAP)	Not enough secure bike parking
Increase sweeping and maintenance programs	Need for a good public relations campaign to educate and inform drivers and cyclists
Appleton will invest resources in a bicycling program	Additional costs may be unpopular
Consistency from city officials on bicycle policy	Downtown is hard to access via bicycle, too much traffic, and not enough bike parking
Safety is always the primary consideration for adding bike lanes	Bike lanes will be used by cars for parking or unloading
Engage "Type B" cyclist through facilities development and encouragement activities	Snow and debris will collect in bike lanes
Frequent sweeping of bike lanes (esp. College Avenue Bridge)	Will take too long to implement changes; advocacy fatigue
Better engage volunteer organizations for fund raising and programming	
Better access to College Avenue	
Need some "quick win" projects	
Traffic calming	
Multijurisdictional Bike Committee that meets at least quarterly	

Next Steps

These comments and direction from the city and the Stakeholder's Committee will be used to generate a goals and policies document to implement proposed routes and increase mode share for bicycles within Appleton.

Stakeholder Meeting #3
Appleton On-Street Bike Lane Plan
Wednesday, June 23, 2010

This memo provides an overview of the public participation process and meeting outcome for Stakeholder Meeting #3 held as part of the Appleton On-Street Bike Lane Plan process.

The purpose of this meeting was to discuss the Draft Plan. The meeting was also used to discuss implementation strategies including opportunities to keep the Stakeholder Group intact, and to set a date for the Municipal Services Committee meeting to review the plan.

Public Process
The City of Appleton assembled the Stakeholder's Committee to represent a broad cross-section of interests and user groups. This group will be the review authority for the working draft and will meet at least three times to discuss progress and provide direction and feedback on recommendations produced during plan development. The committee contains representatives from the following groups or organizations:

- Appleton Area School District
- City of Appleton Police Department
- City of Appleton Trails Advisory Committee
- WisDOT
- Appleton Papers Activate Fox Cities Group
- Fox Cities Greenways
- ECWRPC
- City of Appleton Valley Transit
- City of Appleton Engineering Department
- City of Appleton Municipal Services Committee
- Appleton Bicycle & Fitness
- City of Appleton Department of Community Development

This was the final meeting of the Stakeholder's Committee for plan development. A major recommendation of the plan is to retain this group, or assemble a similar committee with a number of the Stakeholder's Committee members, to oversee implementation of the plan once approved.

The remaining public process includes introduction of the final draft plan to the Municipal Services Committee on August 10th, 2010. This meeting will include a formal presentation and display of the major routes and outcomes outlined in the plan.

Review and Discuss Maps and Document
Committee members were asked to review and discuss the draft plan. General comments on the draft plan and maps are summarized below.

Map #5A: Proposed Bicycle Routes – Sub Area 1

a. Eliminate the S Kensington Dr segment from Rail Road to Lake Park Road; replace with Rail Road to Sundown Lane to S Lake Park Rd (this will also need to appear on Map 7A)

Map #5D: Proposed Bicycle Routes - Downtown

a. Eliminate Washington St segment
b. Add Franklin St segment from Story to Drew (Road Diet w/ bike lanes from Richmond to Drew; route from Richmond to Story)
c. Extend route on Division St from College to Packard

d. Recommend placement of a bike rack in all city-owned parking ramps
e. Add additional bicycle parking at the library
f. The intersection of Division and College should be a "Study Area" to determine possible locations for bicycle parking – the area is currently heavily used by vendors and pedestrians

Map #5E: Sample Bike Rack Placement – College Ave & Oneida St

a. Questions about the quantity of racks at each corner – consultant suggested these "multiple rack groupings" which are proposed at several corners contain at least 4 bicycle racks each; a single rack should also be provided mid-block
b. The temporary on-street bike corral should include a modular design for easy assembly and removal at special events

Cross Sections

a. Update E College Avenue (N Rankin to Bridge) with reconfigured 4-lane approach
b. Remove duplicate Capitol Drive on CS-2
c. Word search for "Freemont" (change to Fremont) and for "Linnwood" (change to Linwood)

Map #7A: Proposed Bicycle Network

a. Update Map #7A to resemble #7B/C/D (update legend with routes and bike lanes)
b. Change Kensington/Division/Washington/Franklin segments

Document Comments

a. There should be more guidance about operations budgets – what are the long-term costs to maintain pavement markings? Also, do signs need to be updated every 10-15 years?
b. A discussion item was how the Stakeholder's Committee would live on in order to expedite implementation of plan objectives. The conclusion was that the committee should be a separate entity (separate from the Trails Committee) in the short-term, and that it should be a subcommittee to a transportation committee (not parks and recreation). Membership was also discussed with the conclusion that more health and wellness individuals should be included to expand the committee's reach and capability. However, the first objective is to get the plan approved.
c. The plan does not include a signage plan for costs and placement of route signage along official routes.

Next Steps

The final draft plan will be presented to the Municipal Services Committee on August 10th, 2010. This meeting will include a formal presentation and display of the major routes and outcomes outlined in the plan. The meeting will likely take place at a larger venue than the regular meeting room in City Center due to anticipated turnout. This meeting will be noticed like the Public Information Meeting which drew over 70 attendees.

Public Information Meeting #2
Appleton On-Street Bike Lane Plan
Tuesday, August 24, 2010

This memo provides an overview of the public participation process and meeting outcome for Public Information Meeting #2 (Municipal Services Committee review) held as part of the Appleton On-Street Bike Lane Plan process.

The purpose of this meeting was to unveil the draft on-street bike lane plan to the public and the Municipal Services Committee. The meeting also provided a venue for discussion and interaction of bicycling advocates.

Public Process
The City of Appleton assembled the Stakeholder's Committee to represent a broad cross-section of interests and user groups. This group is the review authority for the working draft and met four times to discuss progress and provide direction and feedback on recommendations produced during plan development.

Two public meetings were held as part of the plan development process. This memo concerns the second of these two meetings. The first meeting was held April 27th in Room 6A of City Center and was used to deliver information to the public and to gather data from meeting participants about hopes and concerns for bicycling in Appleton. The second meeting, also held in City Center, was held before the Municipal Services Committee to present the plan in draft form. The public was invited to attend this plan review meeting.

Meeting Notices and Turnout
The meeting was publicly noticed and flyers were posted. The meeting was attended by approximately thirty-one (31) members of the public plus the Municipal Services Committee and city staff. Local members of the news media (radio, television) were also in attendance.

Meeting Agenda and Summary
Formal Presentation
A PowerPoint presentation was given by the consultant and covered the rationale for developing the plan (mode share, environmental benefits, increasing safety, etc.), the plan objectives, process, and routes. Routes were discussed in the context of connecting origins (neighborhoods, etc.) with destinations (schools, places of employment, etc.). Bike lanes will be included on designated bicycle routes that carry a traffic volume greater than 3,000 vehicles per day. About 31 miles of Appleton's proposed bike routes were identified as requiring bike lanes. The total bike network (on-street) would comprise about 71 miles. Implementation steps, including establishing a dedicated Bicycle Committee and applying for grant funding, were also discussed.

Question and Answer Session
A question and answer session followed the formal presentation. General questions included specific examples of education and encouragement programs and a discussion about the need to enforce current laws. Attendees were also curious how long it would take to implement the plan and if there were any steps they could take to hasten the process. It was mentioned that employment centers, especially those with wellness programs, could adopt-a-bikeway and help to provide support or funding to increase the bicycle network. The connection of bikeways to transit routes was also discussed.

Map Review
A variety of final map products were displayed for public review and comment in the hallway outside rooms 6A and 6B. Maps included all route maps, the implementation table, field review

results, and downtown plans and sample bike rack locations. Informal discussions occurred. One question concerned the absence of S. Taft Avenue as a bike route in its entirety. A portion of this street is a bike route though a lack of connections to other routes east and west of the segment negated its selection from its eastern to western limits.

Next Steps

The Municipal Services Committee will take action on the plan at its regular meeting scheduled September 7th, 2010. The draft plan document and exhibits are available on the city's website at www.appleton.org.

Appendix I:

Plan Approval

Excerpts from…

COMMON COUNCIL PROCEEDINGS
Regular Meeting
City of Appleton, Wisconsin
September 15, 2010
7:00 P.M.
COUNCIL CHAMBERS, CITY HALL
100 North Appleton Street

Page 18 of the Minutes…

REPORT OF THE MUNICIPAL SERVICES COMMITTEE
Meeting of September 7, 2010

PRESENT: Alderperson Dannecker, Alderperson Konetzke, Alderperson Lutz, Alderperson Plank, Alderperson Spears
MEMBERS ABSENT: None
The Municipal Services Committee reports and recommends that:

1. Adopt City of Appleton's On-Street Bike Lane Plan. BE APPROVED (5/0)

2. R/B(9/1/10)/Stueck - The request from Mario Maggiorana for a second curb cut at 1715 S. Hycrest Drive. BE REAFFIRMED AS DENIED (3/2-Alderperson Dannecker, Alderperson Lutz)

3. R/B (9/1/10)/Brooker - The request from Jake Miller of Hevidog Cart Company for a permanent street occupancy permit to place a street vendor cart at 400 W. College Avenue and 314 E. College Avenue be approved contingent upon meeting all Municipal Code Requirements. BE REAFFIRMED AS APPROVED (5/0)

4. Proposed revisions to Municipal Code 15 Solid Waste regarding electronics and brush collection. BE APPROVED (4/0)

5. The request from Kurt Kroening, 322 S. Summit Street, to appeal the $160.00 Weed Administration Fee. BE DENIED (4/0)

6. Request from Paul VanderLinden, Muncheez Pizzeria, for a permanent street occupancy permit to place table and chairs at 600 W. College Avenue to be removed at the time business closes or by 2:00 a.m. at the latest. BE APPROVED (4/0)

7. State/Municipal Agreement for the design of the Lawe Street Bridge over the power canal. BE APPROVED (4/0)

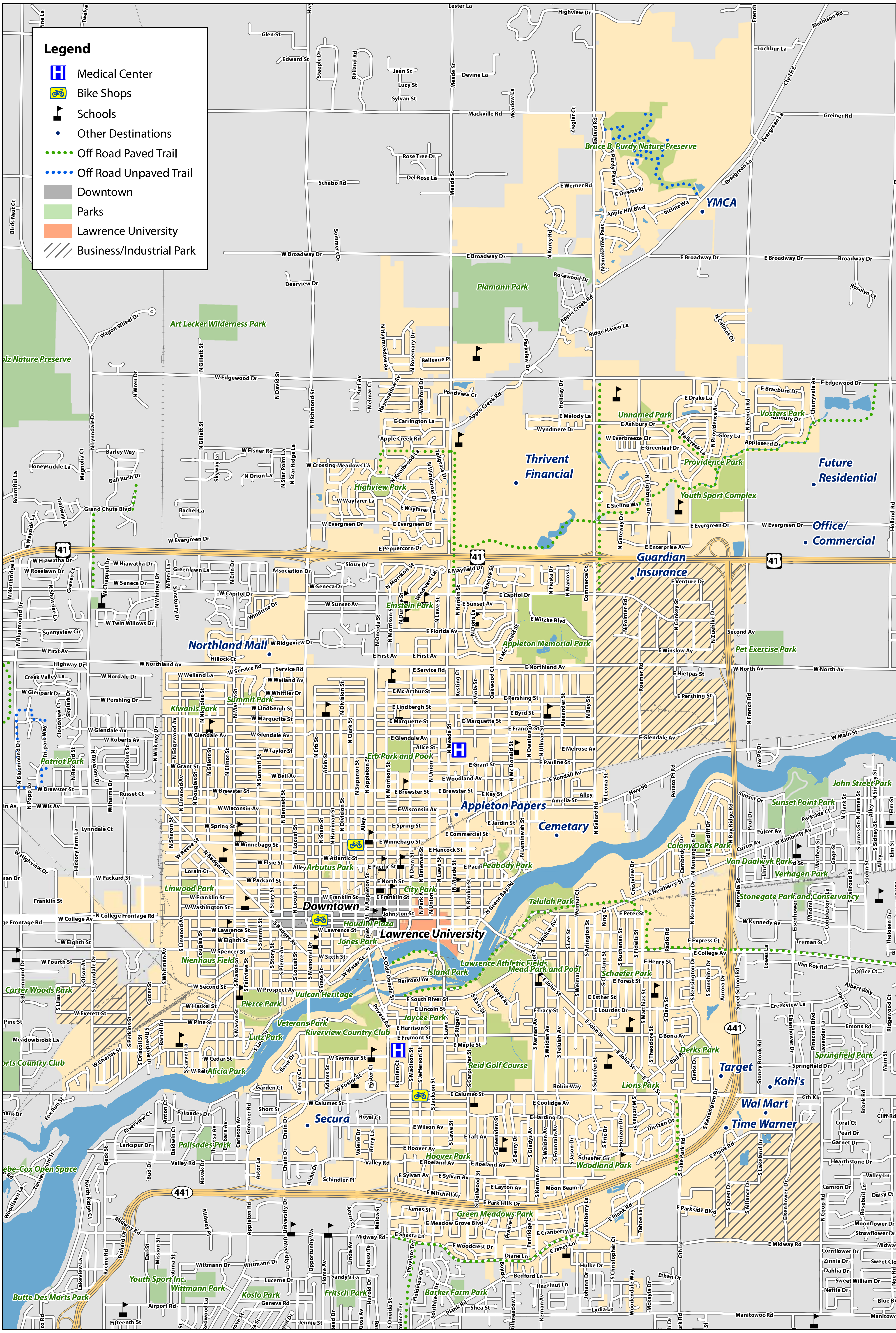
8. State/Municipal Agreement for the design of the Prospect Avenue Bridge over Jackman Street. BE APPROVED (4/0)
9. State/Municipal Agreement for construction of Olde Oneida Street over the Fox River. BE APPROVED (4/0)

Martin requested a separate vote on Item #1 and spoke in favor of this project.

Konetzke also spoke in favor of this item.

ROLL CALL ON ITEM #1: Aye – 13. Excused – 3/Baranowski, Clemons, Croatt.

ITEM #1 ADOPTED.



Appleton On-Street Bike Plan

Bicycle Trip Generators

Map 1

0 1,600 3,200 Feet

Data Source: City of Appleton, Department of Public Works

January 2009
Project 2377

Legend

- Other Destinations
- Medical Center
- Bike Shops
- Schools
- Off-Road Paved Trail
- Off-Road Unpaved Trail
- Apple Creek Trail
- CE Trail
- Highview Trail
- Menasha Trail/Route
- Newberry Trail
- North Island Trail
- Providence Trail
- Bus Route
- Business/Industrial Park
- Parks
- Lawrence University
- Downtown

Appleton On-Street Bike Plan

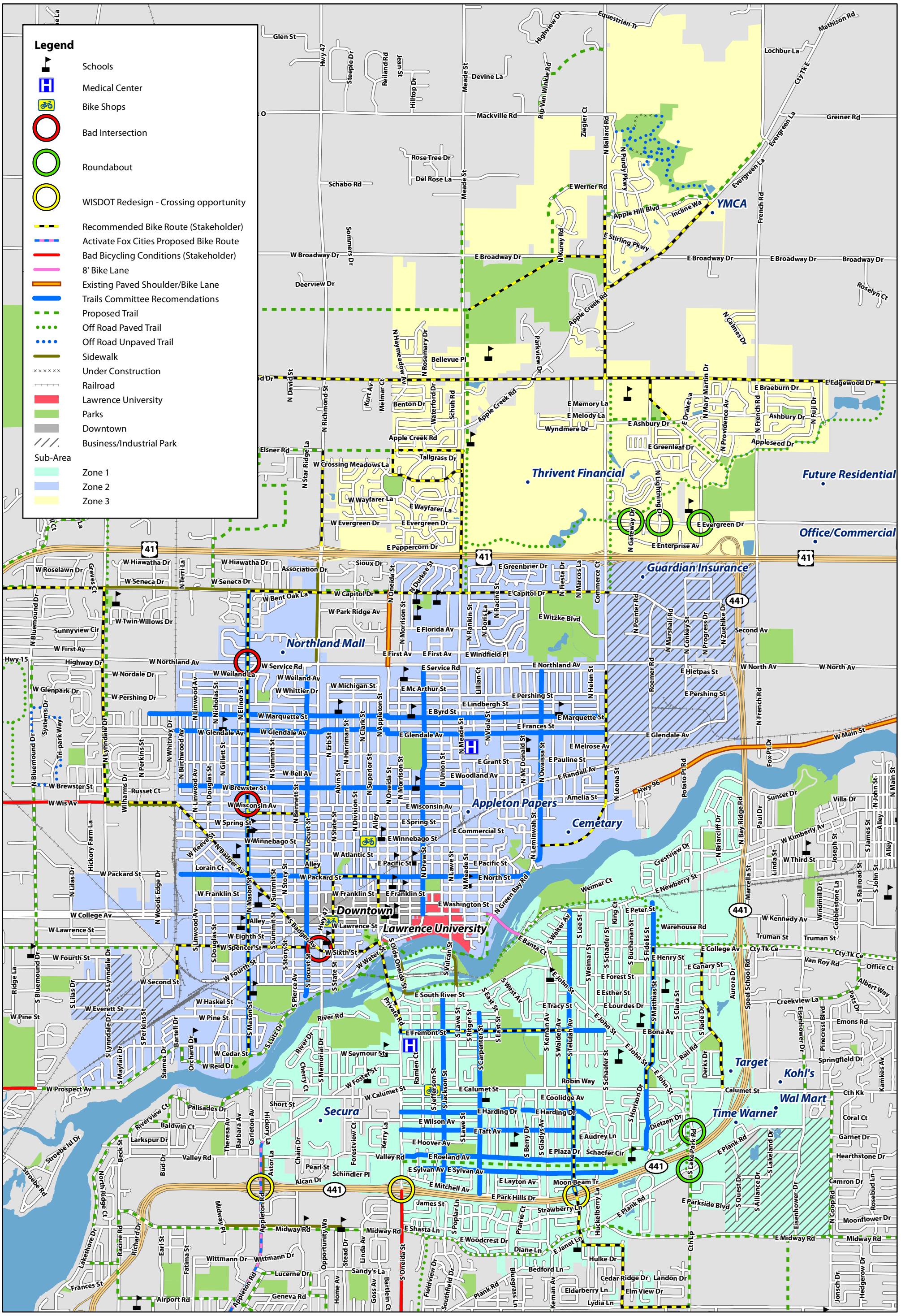
Bicycle Trip Generators with Named "Trails" and Bus Routes

Map 1a

0 1,600 3,200 Feet

Data Source: City of Appleton, Department of Public Works

January 2009
Project 2377



Appleton On-Street Bike Plan

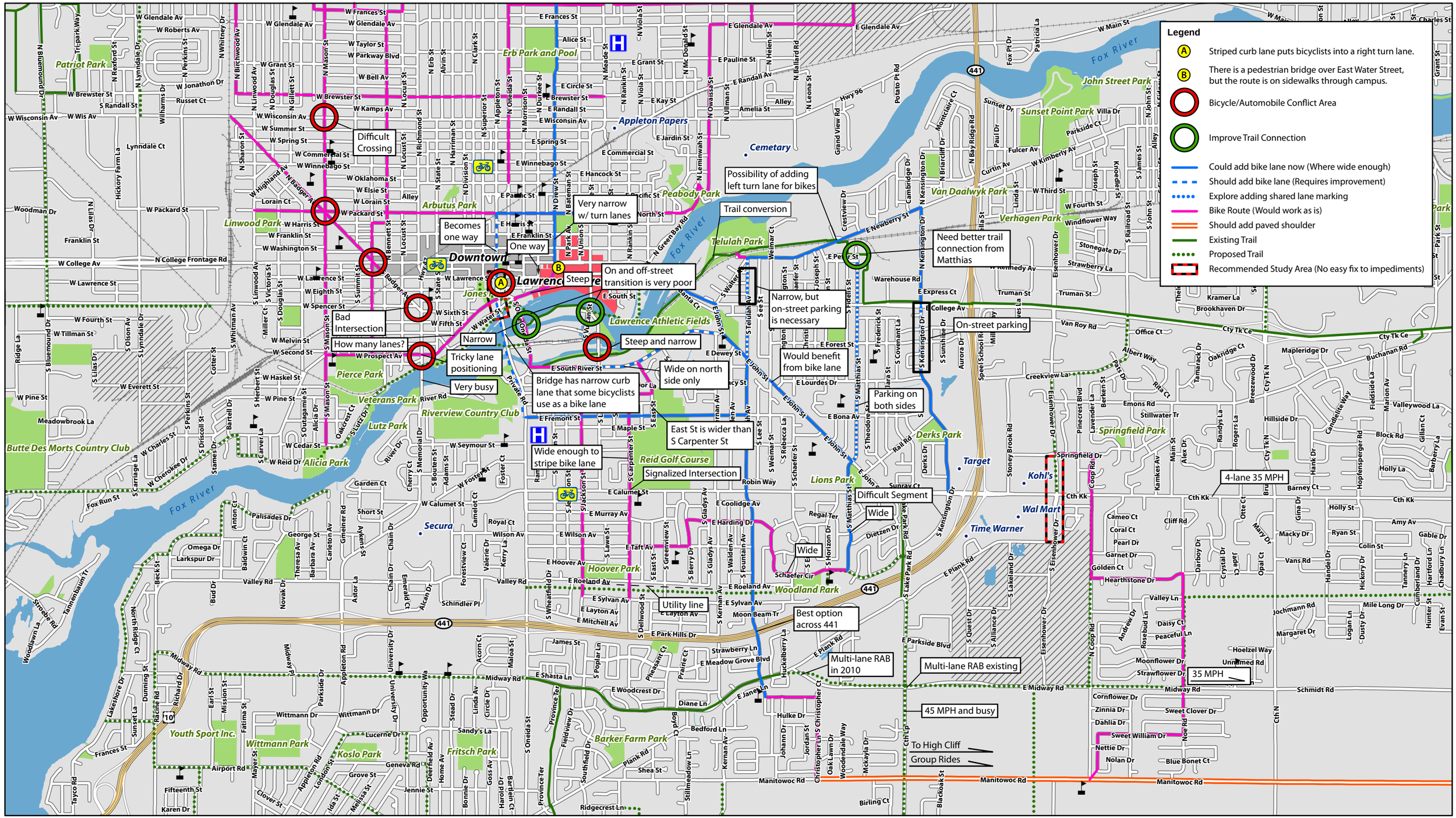
Bicycling Routes Identified by Stakeholders

Map 2

0 1,600 3,200 Feet

Data Source: City of Appleton, Department of Public Works

March 2010
Project 2377



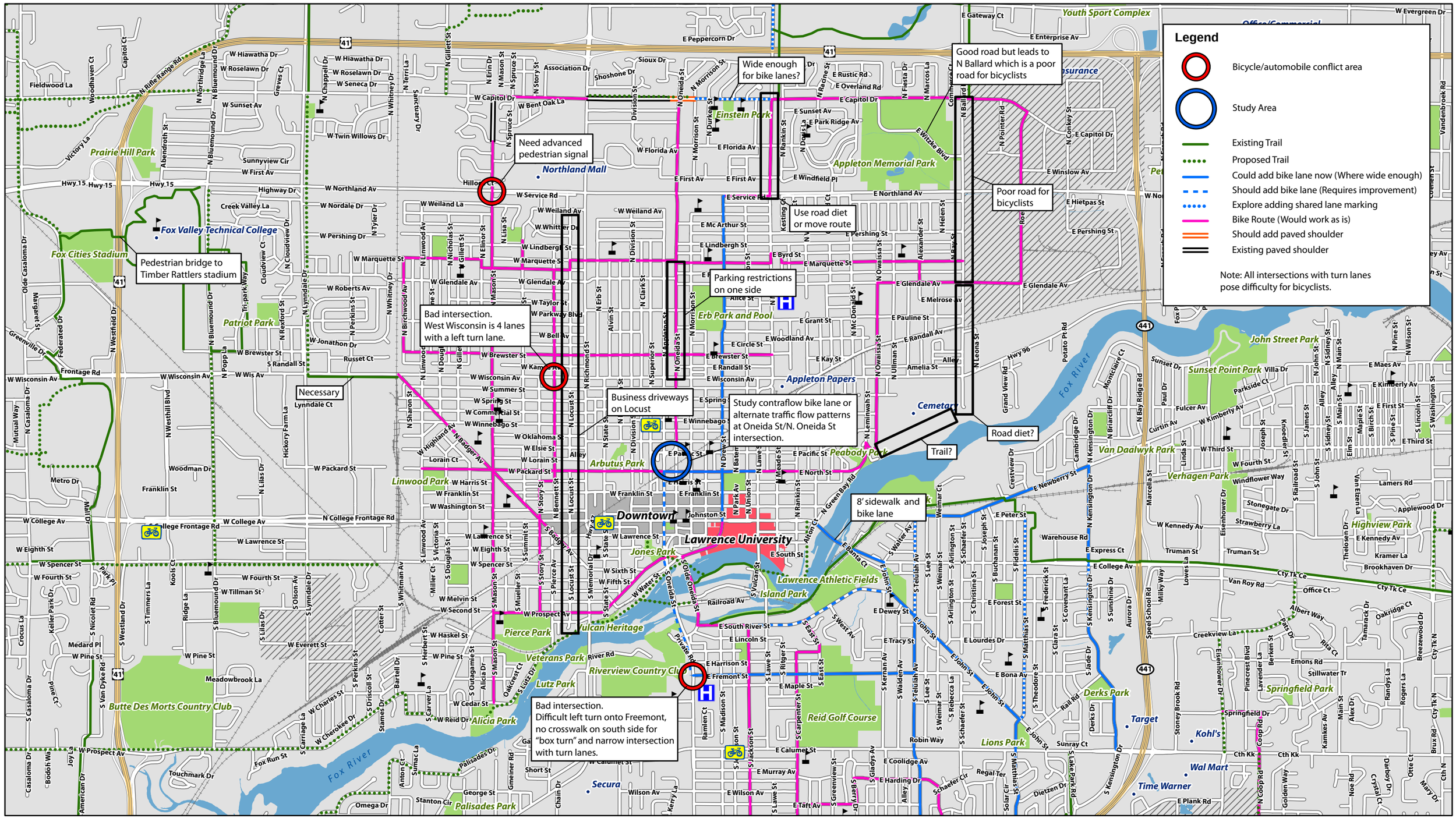
Sub Area 1 Opportunities & Constraints (Field Review)

Appleton, Wisconsin

Map 3A

0 1,250 2,500 Feet

February 2010
Project 2377



Sub Area 2 Opportunities & Constraints (Field Review)

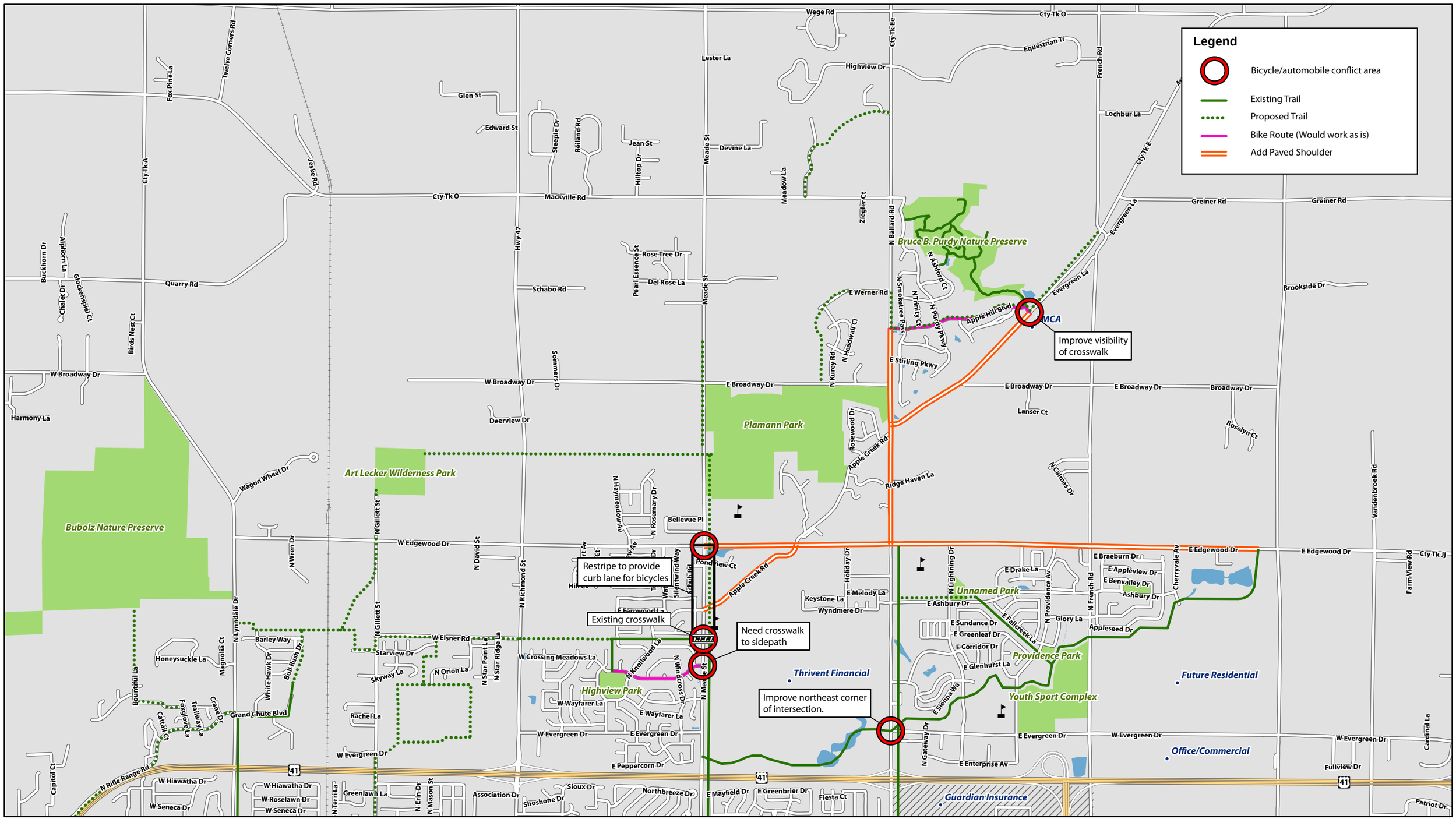
Appleton, Wisconsin

Map 3B

0 1,250 2,500 Feet

SAA

February 2010
Project 2377



Sub Area 3 Opportunities & Constraints (Field Review)

Appleton, Wisconsin

Map 3C

0 1,250 2,500 Feet

February 2010
Project 2377

Proposed Bike Lanes - BLOS

- < 1.50 (A - Extremely High)
- 1.50 - 2.50 (B - Very High)
- 2.50 - 3.50 (C - Moderately High)
- 3.50 - 4.50 (D - Moderately Low)
- 4.50 - 5.50 (E - Very Low)
- > 5.50 (F - Extremely Low)

Data Source: City of Appleton Department of Public Works

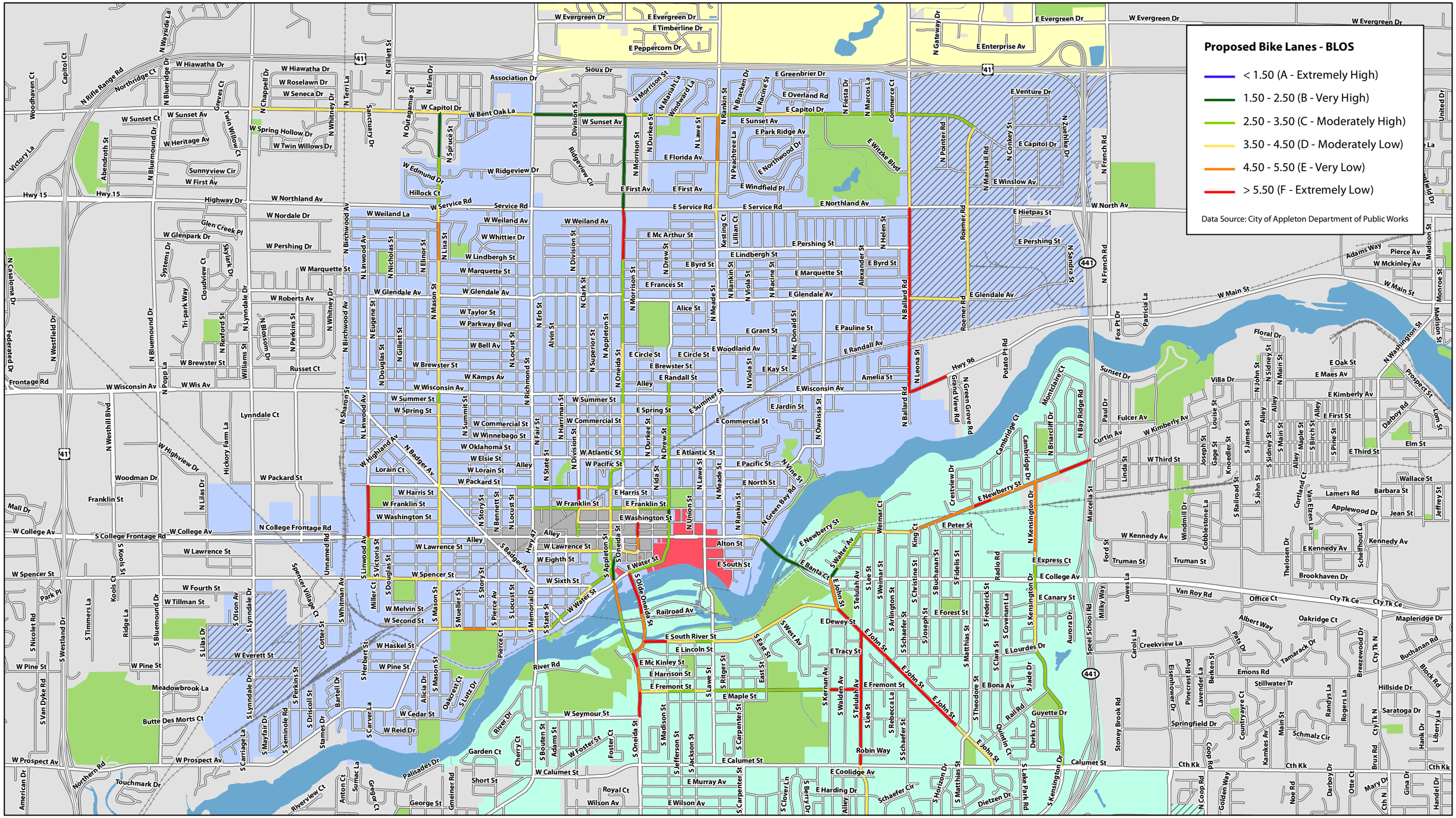
Bicycle Level of Service (BLOS) - Sub Area 1

Appleton, Wisconsin

Map 4A

0 1,250 2,500 Feet

June 2010
Project 2377

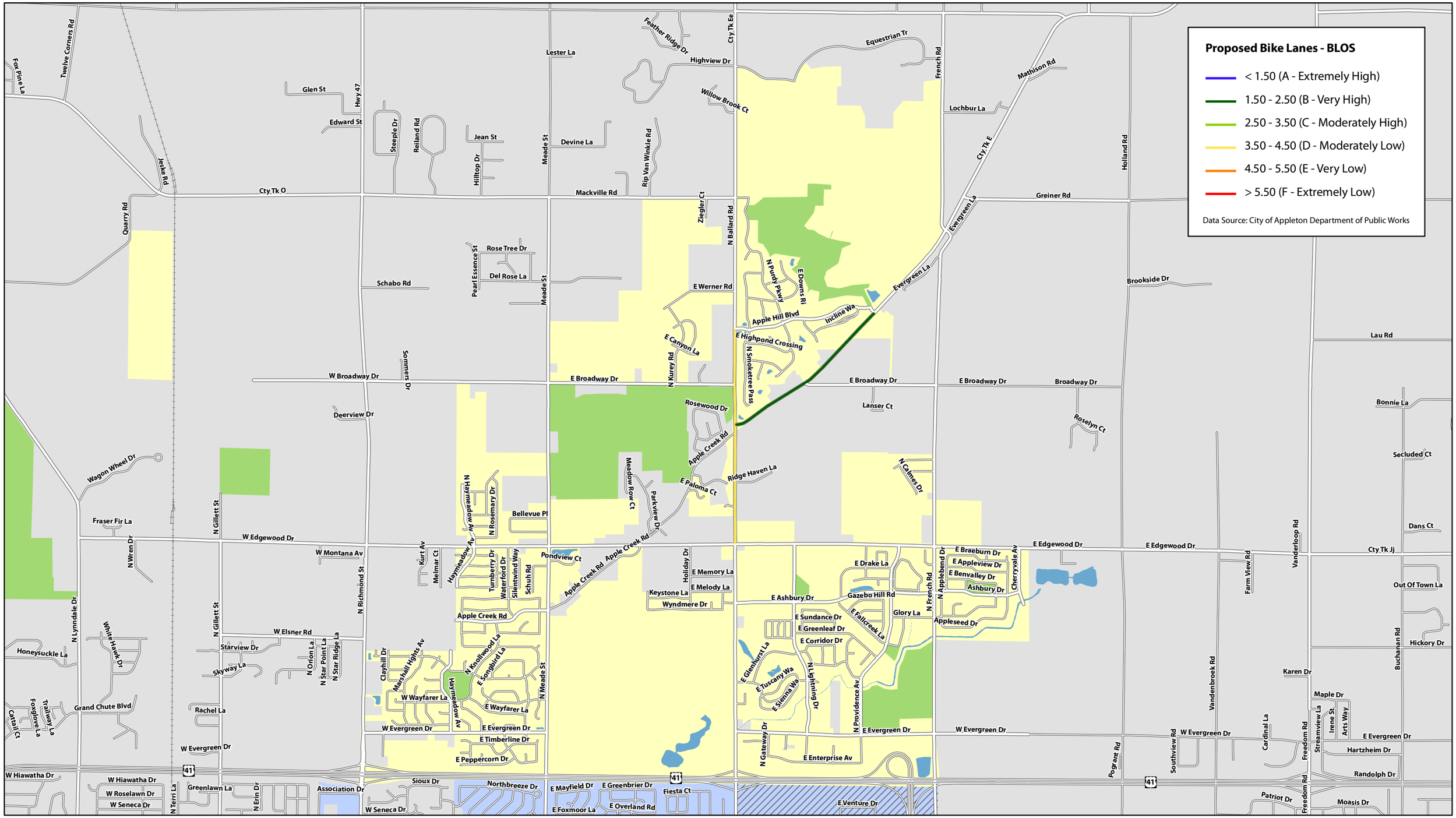


Bicycle Level of Service (BLOS) - Sub Area 2

Appleton, Wisconsin

Map 4B

June 2010
Project 2377



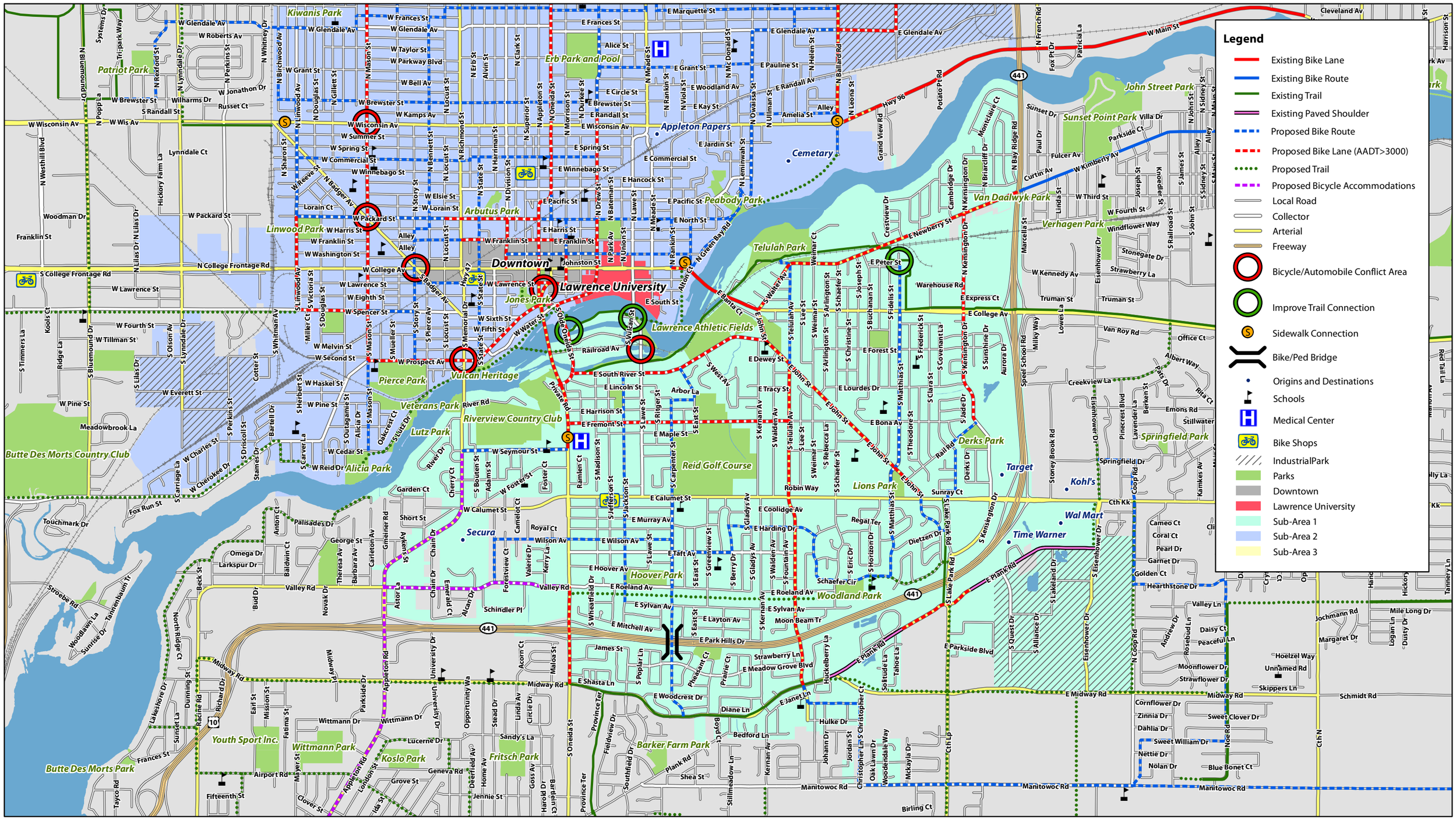
Bicycle Level of Service (BLOS) - Sub Area 3

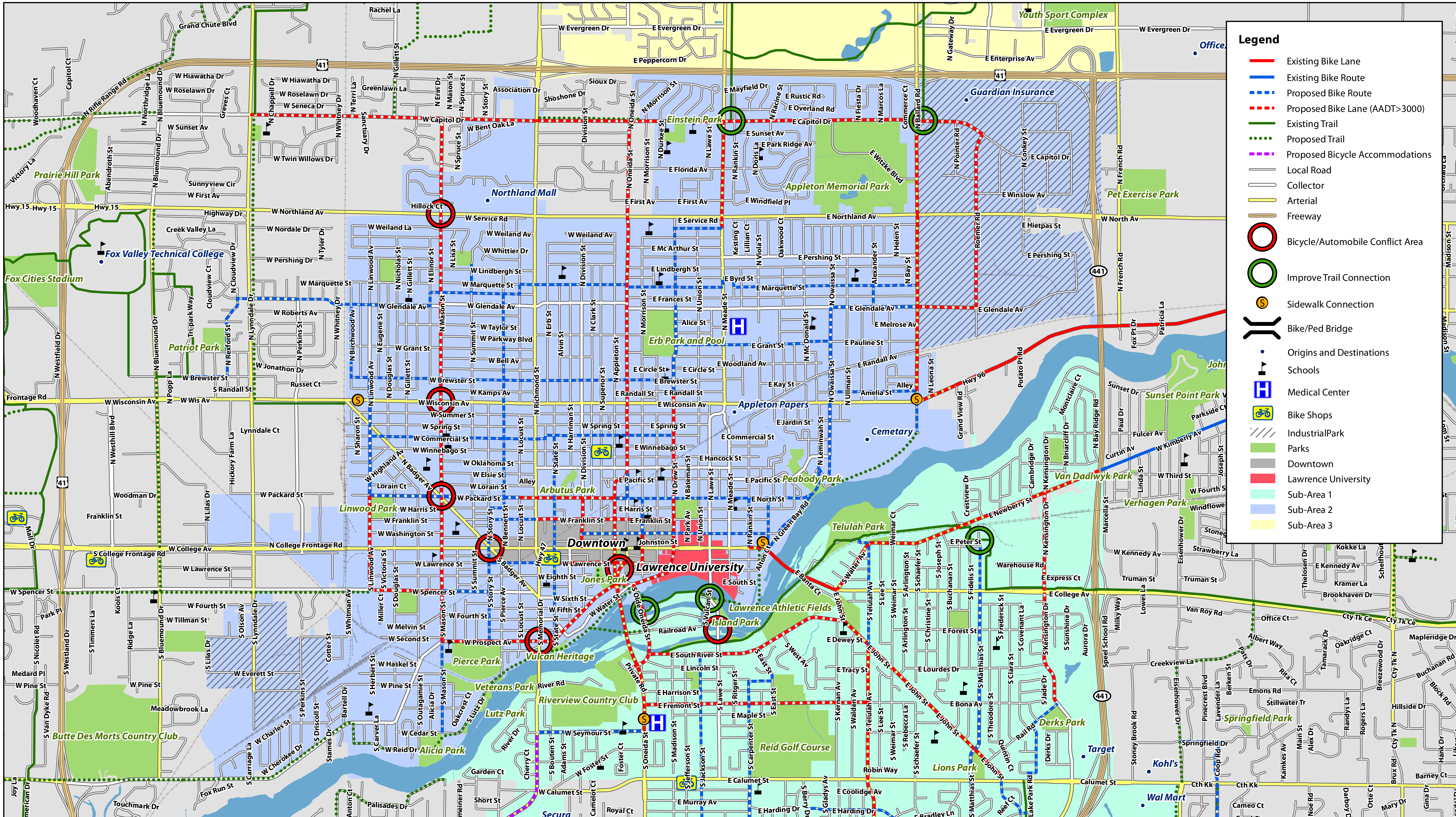
Appleton, Wisconsin

Map 4C

0 1,250 2,500 Feet

June 2010
Project 2377


Legend
Existing Bike Lane
Existing Bike Route
Existing Trail
Existing Paved Shoulder
Proposed Bike Route
Proposed Bike Lane (AADT>3000)
Proposed Trail
Proposed Bicycle Accommodations
Local Road
Collector
Arterial
Freeway
Bicycle/Automobile Conflict Area
Improve Trail Connection
Sidewalk Connection
Bike/Ped Bridge
Origins and Destinations
Schools
Medical Center
Bike Shops
IndustrialPark
Parks
Downtown
Lawrence University
Sub-Area 1
Sub-Area 2
Sub-Area 3
Downtown
Lawrence University
Appleton Papers
Cemetary
Peabody Park
Arbutus Park
Linwood Park
Jones Park
Telulah Park
Lawrence Athletic Fields
Erb Park and Pool
Kiwanis Park
Patriot Park
John Street Park
Sunset Point Park
Van Dadlwyk Park
Verhagen Park
Springfield Park
Derks Park
Lions Park
Reid Golf Course
Vulcan Heritage
Pierce Park
Veterans Park
Riverview Country Club
Lutz Park
Alicia Park
Butte Des Morts Country Club
Secura
Hoover Park
Woodland Park
Barker Farm Park
Fritsch Park
Koslo Park
Wittmann Park
Youth Sport Inc.
Butte Des Morts Park
Target
Kohl's
Wal Mart
Time Warner
Hwy 96
441
10
Proposed Bicycle Routes - Sub Area 1
Appleton, Wisconsin
Map 5A
0 1,250 2,500 Feet
July 2010
Project 2377



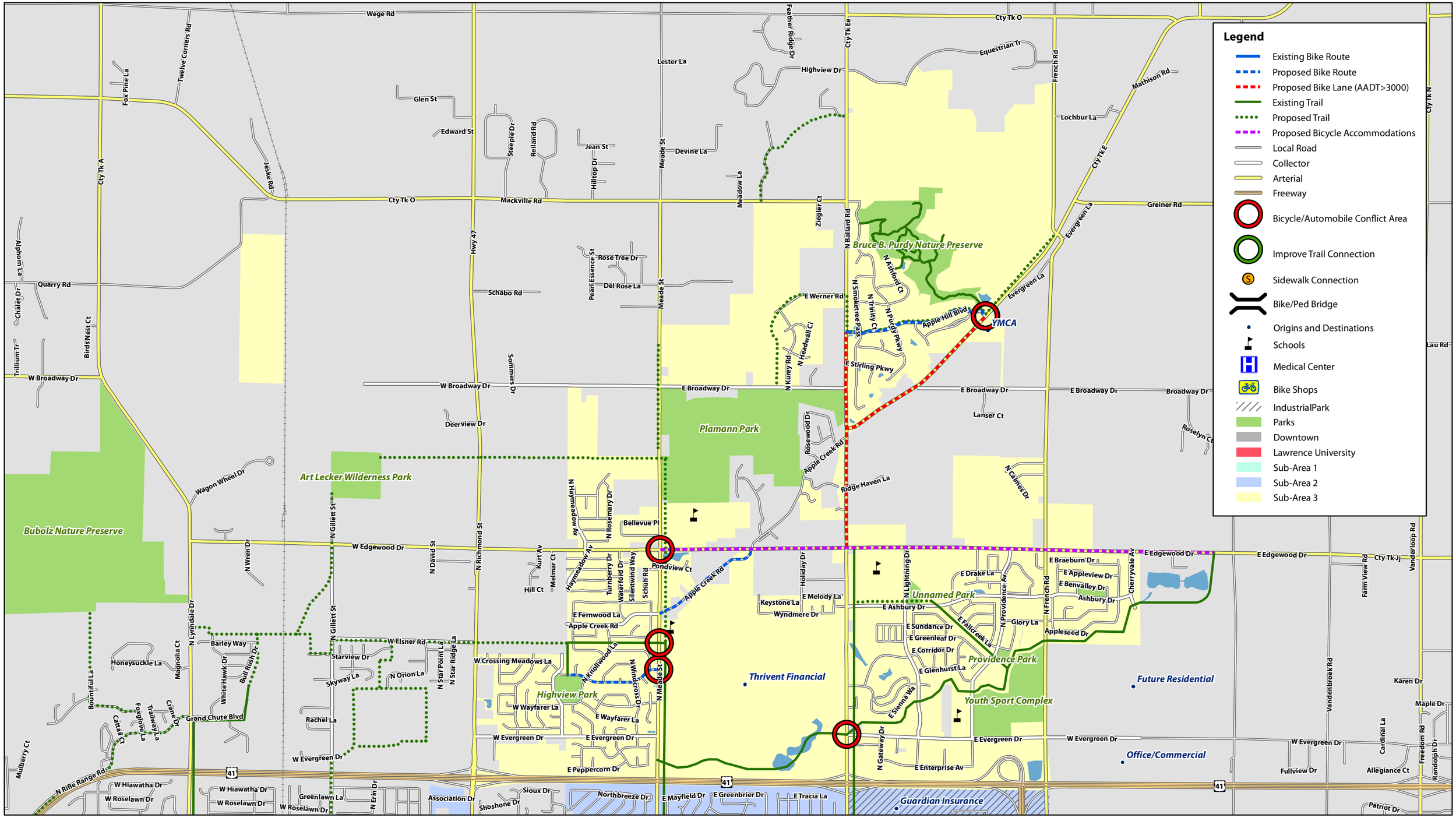
Proposed Bicycle Routes - Sub Area 2

Appleton, Wisconsin

Map 5B

0 1,250 2,500 Feet

July 2010
Project 2377



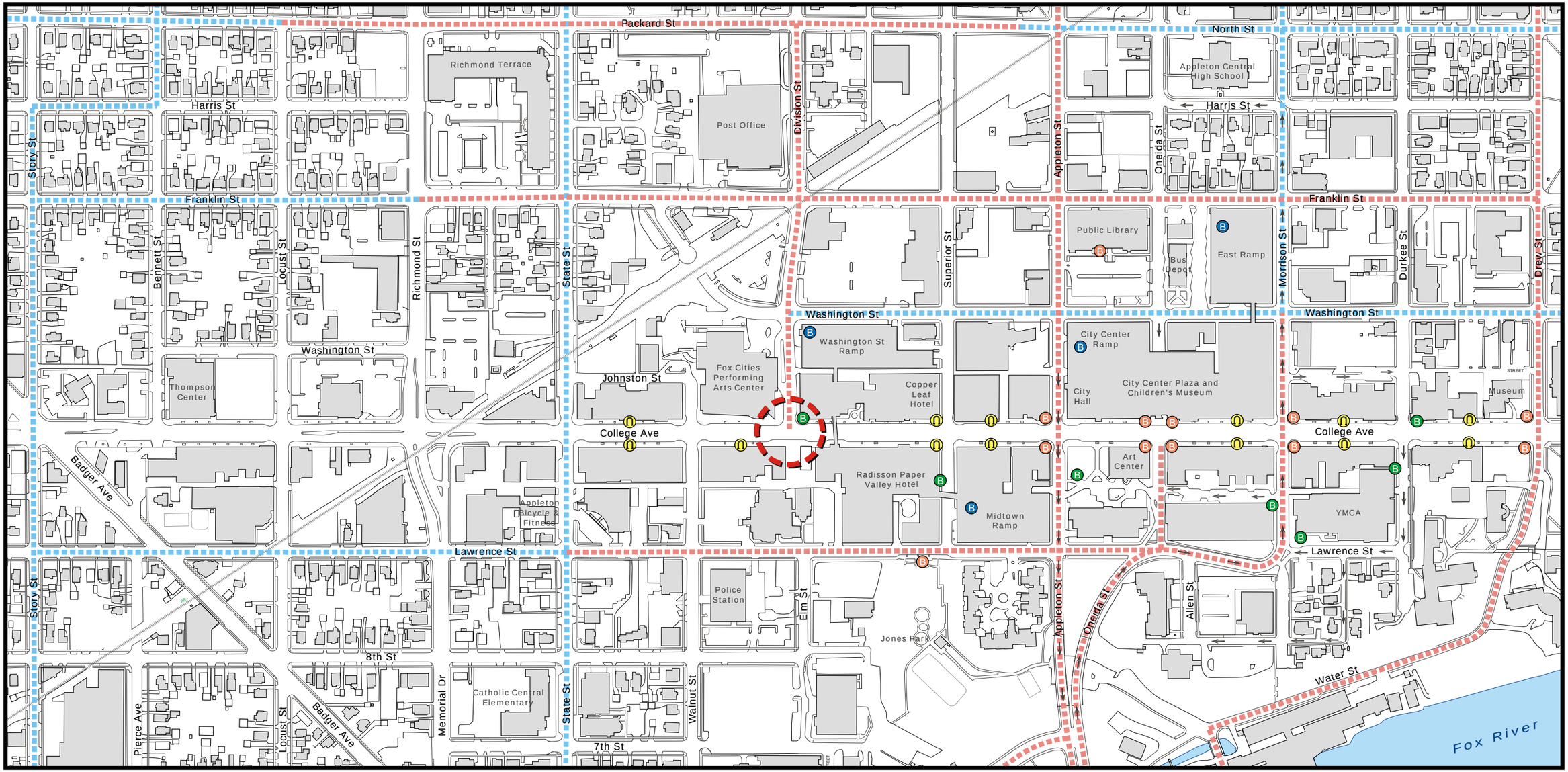
Proposed Bicycle Routes - Sub Area 3

Appleton, Wisconsin

Map 5C

0 1,250 2,500 Feet

June 2010
Project 2377



Legend

- Proposed bike lane
- Proposed bike route
- One way traffic
- Existing bike rack location
- Proposed multiple bike rack location
- Proposed multiple bike rack in parking ramp
- Proposed single bike rack location (approx.)
- Study Area: Determine appropriate bike rack placement based on current activity.

Proposed Bicycle Routes - Downtown

Appleton, Wisconsin

Map 5D

0 175 350
Feet

SAA

July 2010
Project 2377

Legend

Proposed inverted U bike rack location

City Center Plaza and Children's Museum

City Center Plaza and Children's Museum

Sample on-street bike corral configuration. See images 1 and 2.

W College Ave

E College Ave

Place group racks at intersections

Place single racks near business entrances along the corridor

Sample dismount zone. Install signage and pavement markings. See image 3 and 4.

Sample dismount zone. Install signage and pavement markings. See images 3 and 4.

S Oneida St

ONLY

ONLY

Image 1

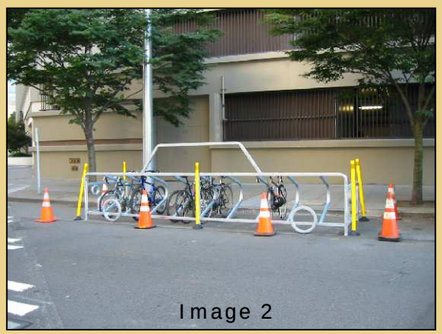


Image 2

Image 3

Image 4

Sample Bike Rack Placement - College Ave & Oneida St

Appleton, Wisconsin

Map 5E

0 10 20

Feet

June 2010
Project 2377

To Rankin St bike route

44'

Green Bay Rd

S Alton Ct

To Lawrence University

E College Ave

54'

Bridge

Legend

Preferred path for bicycles

Optional path for bicycles

College Avenue - Bridge Approach

Appleton, Wisconsin

Map 5F

0 20 40

Feet

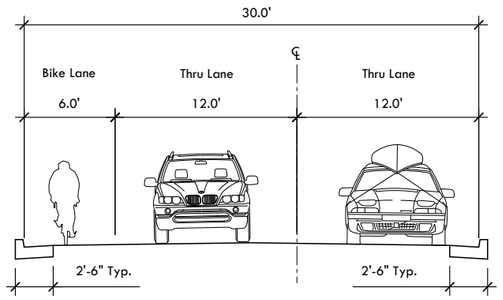
July 2010

Project 2377

INSUFFICIENT WIDTH

E Apple Creek Rd

Northeast - N Ballard Rd to E Apple Hill Blvd
Existing configuration: 4' paved shoulder,
10.5' thru lane, 10.5' thru lane, 4' paved shoulder



S Appleton St - ONE WAY

North - W Prospect Ave to W Lawrence St
Existing configuration: (2) 15' thru lanes

INSUFFICIENT WIDTH -

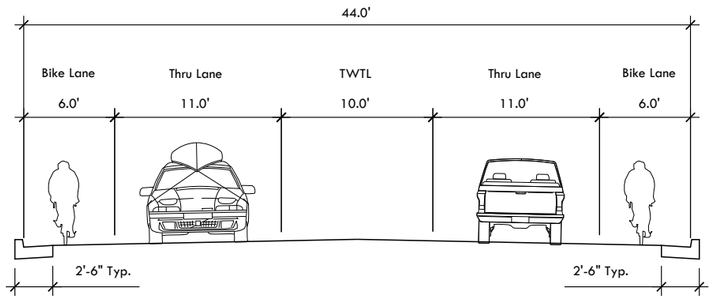
"Cut out" parking area

N Appleton St

North - W North Alley to W Washington
Existing configuration: Mid block turn lanes,
transition from one-way to two way
traffic mid-block

N Appleton St - ONE WAY

North - W College Ave to W North Alley
Existing configuration: 10' turn lane, 11' thru lane,
11' turn/thru lane, 8' parking lane



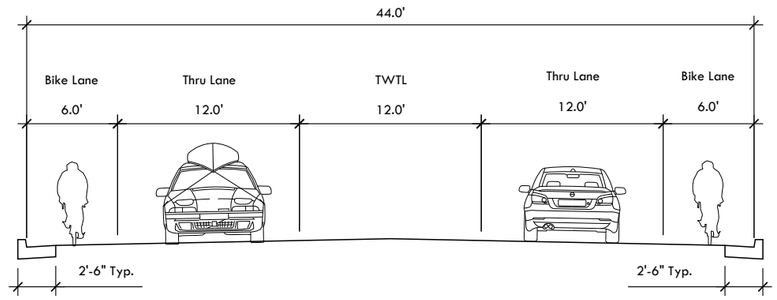
N Appleton St

North - W Washington St to W Franklin St
Existing configuration: 14' thru lane, 16' TWTL, 14' thru lane

INSUFFICIENT WIDTH

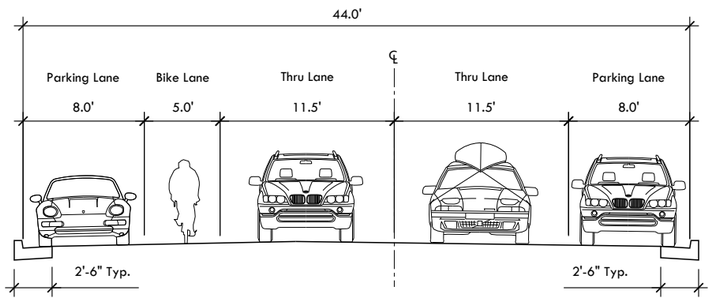
N Appleton St

North - W Pacific St to W Atlantic St
Existing configuration: (2) 14' thru lanes



N Ballard Rd

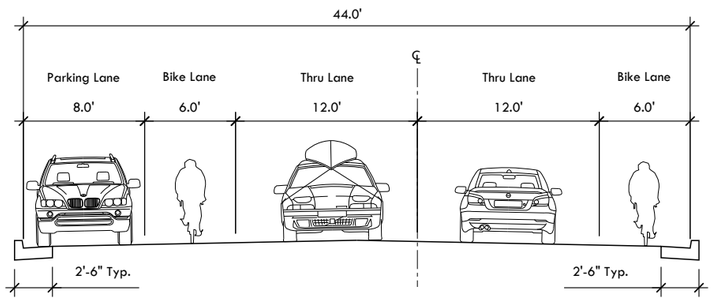
North - E Wisconsin Ave to E Longview Dr
Existing configuration: (4) 12' thru lanes



S Appleton St - ONE WAY

North - W Lawrence St to W College Ave
Existing configuration: 8' parking lane, 14' thru lane, 14' thru lane, 8' parking lane

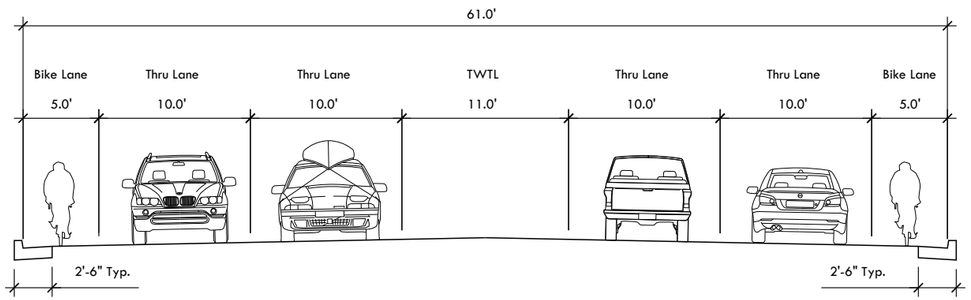
* Turn lanes at Lawrence and curb configuration at College may be an issue



N Appleton St

North - W Franklin St to W Pacific St
Existing configuration: (2) 22' thru lanes

*Turn lanes at intersection



N Ballard Rd

North - E Northland Ave to E Capitol Dr
Existing configuration: (2) 12' thru lanes, TWTL, (2) 12' thru lanes

Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-1

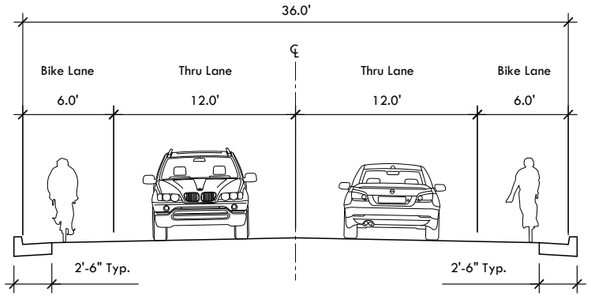
0 5 10
Feet

March 2010
Project 2377

INSUFFICIENT WIDTH

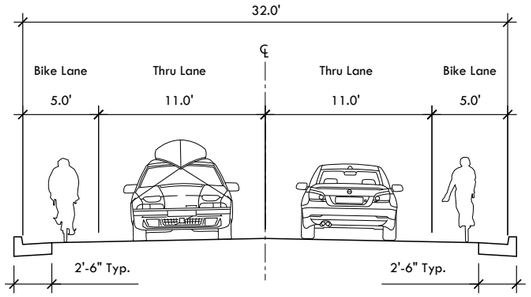
N Ballard Rd

North - E Edgewood Dr to Apple Hill Blvd
Existing configuration: (2) 11.5' thru lanes



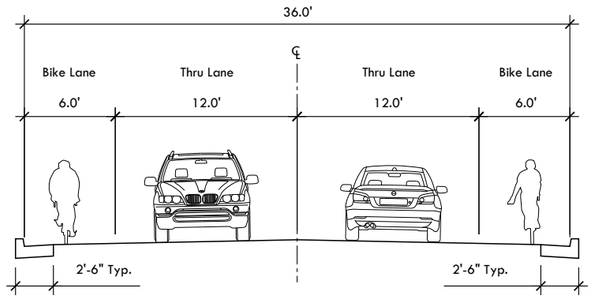
N Division St

North - W College Ave to W Washington St
Existing configuration: 14' thru lane, 14' thru lane, 8' parking lane



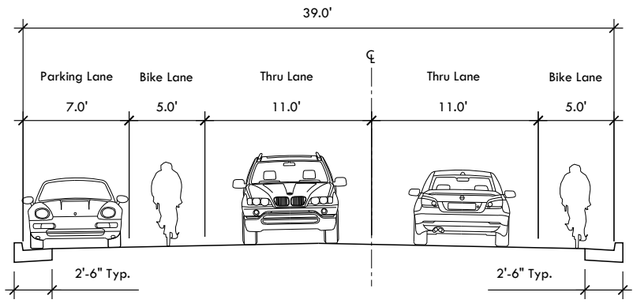
N Drew St

North - E College Ave to E Wisconsin Ave
Existing configuration: 16' thru lane, 16' thru lane



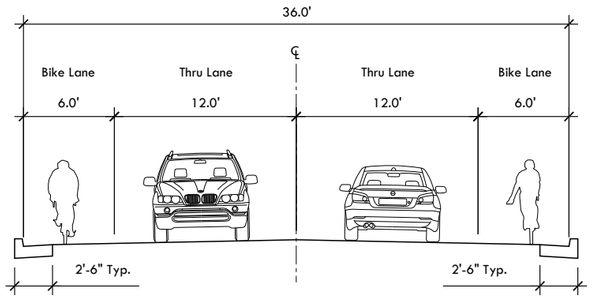
Capitol Dr

East - N Mason St to Roemer Rd
Existing configuration: (2) 18' thru lanes



N Division St

North - W Washington St to W Franklin St
Existing configuration: 8' parking lane, 11.5' thru lane, 11.5' thru lane, 8' thru lane



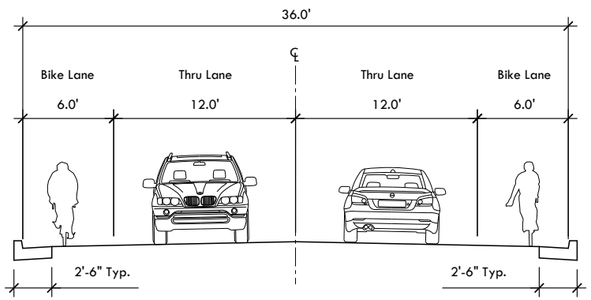
N Drew St

North - E Wisconsin Ave to E Randall St
Existing configuration: 18' thru lane, 18' thru lane

INSUFFICIENT WIDTH

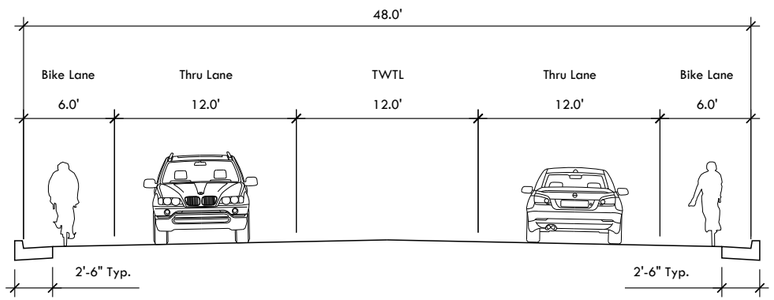
E College Ave

East - N Rankin St to Alton Ct
Existing configuration: (4) 11' thru lanes



N Division St

North - W Franklin St to W Packard St
Existing configuration: 7' parking lane, 11' thru lane, 11' thru lane, 7' thru lane



W Franklin St

East - N Richmond St to N State St
Existing configuration: (2) 12' thru lanes, (2) 12' thru lanes

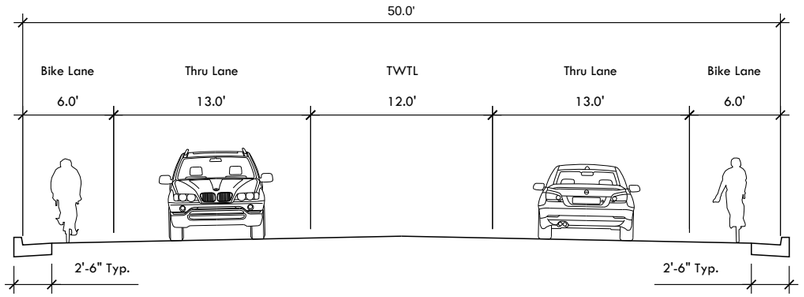
Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-2

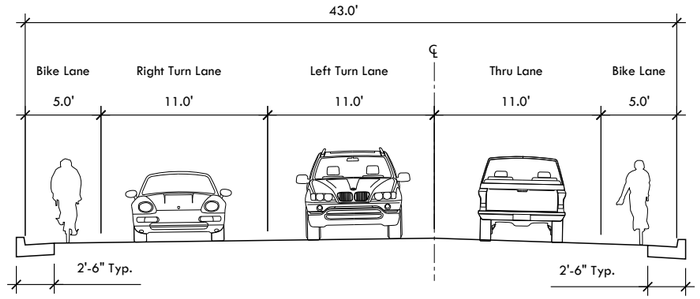
0 5 10
Feet

March 2010
Project 2377



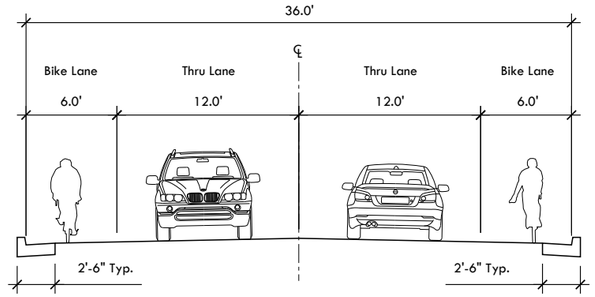
W Franklin St

East - N State St to N Division St
Existing configuration: (2) 12.5' thru lanes, (2) 12.5' thru lanes



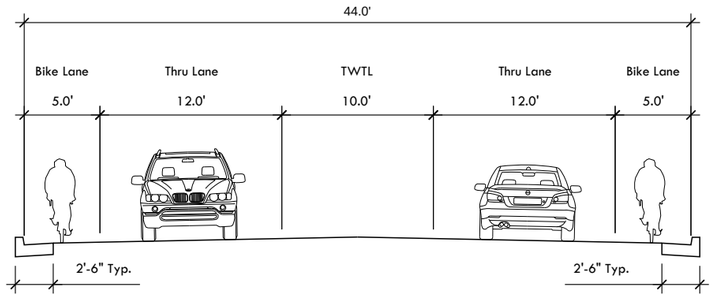
E Fremont St

East - S Oneida St to S Madison St
Existing configuration: 7' parking lane, 12' turn lane, 11' turn lane, 13' thru lane



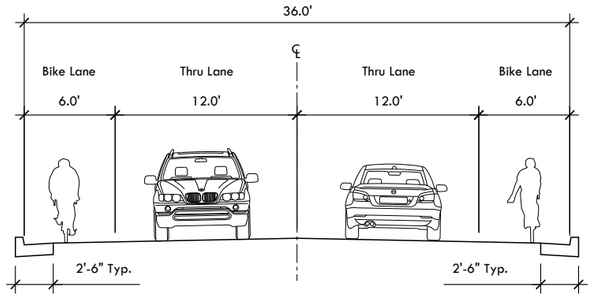
E Fremont St

East - S Kernan Ave to S Telulah Ave
Existing configuration: 18' thru lane, 18' thru lane (No parking restrictions)



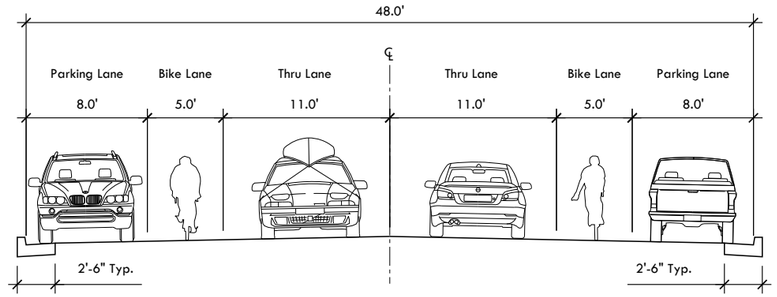
Franklin St

East - N Division St to N Durkee St
Existing configuration: (2) 11' thru lanes, (2) 11' thru lanes



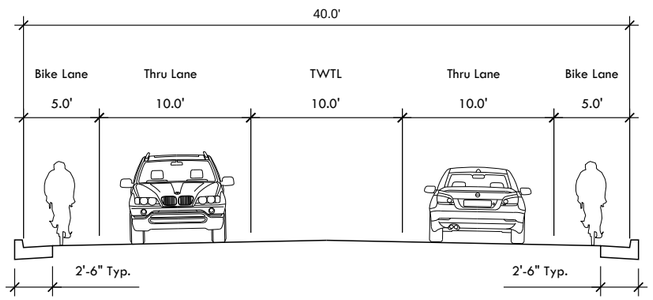
E Fremont St

East - S Madison St to S East St
Existing configuration: 8' parking lane, 14' thru lane, 14' thru lane



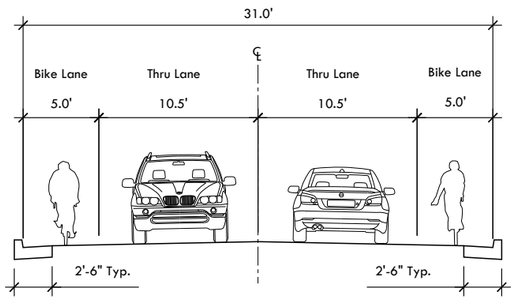
E Glendale Ave

East - N Ballard Rd to Roemer Rd
Existing configuration: (2) 24' thru lanes



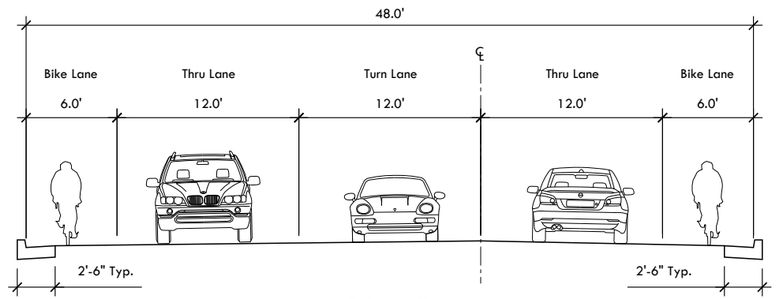
E Franklin St

East - N Durkee St to N Drew St
Existing configuration: (2) 11' thru lanes, 11' thru lanes, 7' parking lane



E Fremont St

East - S East St to S Kernan Ave
Existing configuration: 8' parking lane, 11.5' thru lane, 11.5' thru lane



E John St

Northwest - E Calumet St to Rail Rd
Existing configuration: 13' thru lane, 11' turn lane, 24' thru lane

Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-3

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Feet

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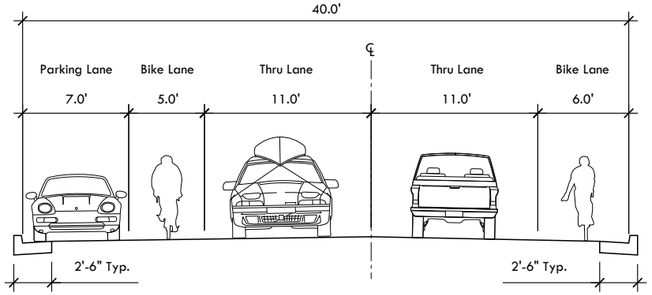
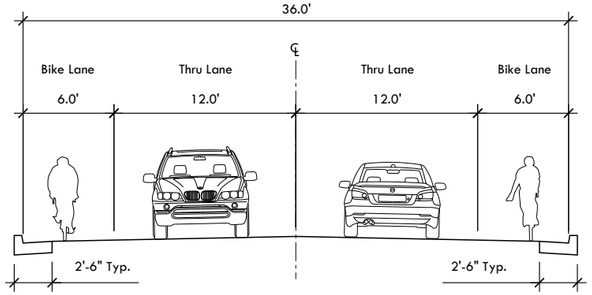


E John St

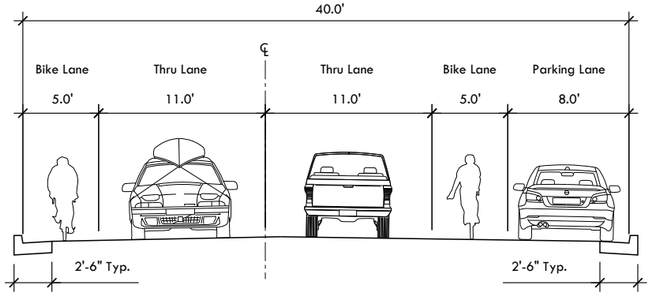
Northwest - Rail Rd to E College Ave
Existing configuration: 20' thru lane, 20' thru lane

* No parking restrictions in most areas



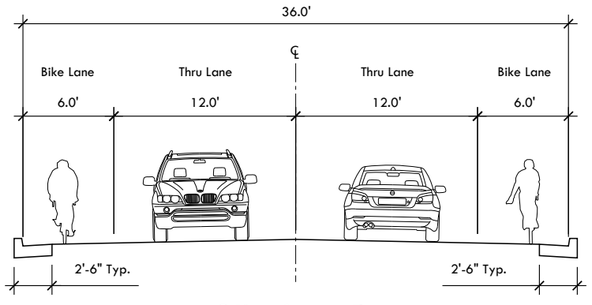
S Kensington Dr

North - E Canary St to E Oriole St
Existing configuration: 18' thru lane, 18' thru lane (No parking restrictions)



W Lawrence St

East - S Walnut St to S Superior St
Existing configuration: 8' parking lane, 12' thru lane, 12' thru lane, 8' parking lane



S Kensington Dr

North - E Rail Rd to E Lourdes Rd
Existing configuration: 6' shoulder, 12' thru lane, 12' thru lane, 6' shoulder

*Shoulder striped

INSUFFICIENT WIDTH -
Turn Lane

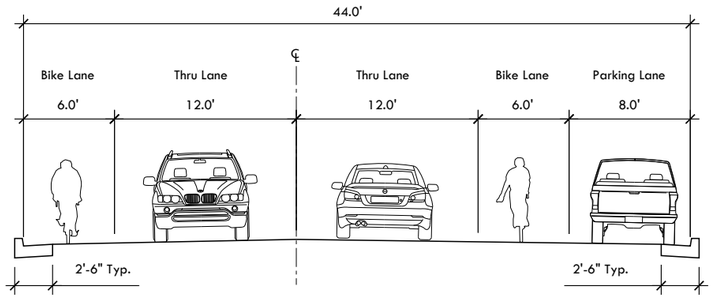
S Kensington Dr

North - E Oriole St to E College Ave
Existing configuration: 16' thru lane, 10' turn lane, 10' thru lane

INSUFFICIENT WIDTH

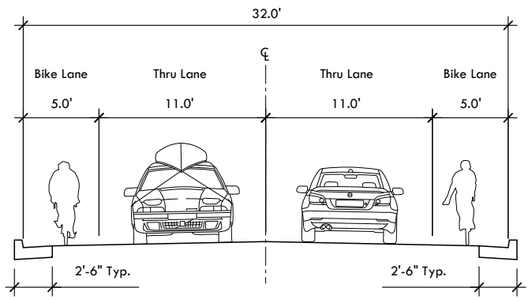
S Kensington Dr

North - E College Ave to Warehouse Rd
Existing configuration: (2) 11' thru lanes, 11' turn lane, (2) 11' thru lanes



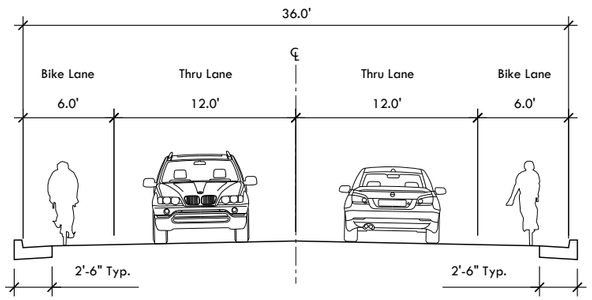
W Lawrence St

East - S Superior St to S Appleton St
Existing configuration: 8' parking lane, 14' thru lane, 14' thru lane, 8' parking lane



S Kensington Dr

North - Lourdes Rd to E Canary St
Existing configuration: 16' thru lane, 16' thru lane (No parking restrictions)



N Kensington Dr

North - Warehouse Dr to E Newberry St
Existing configuration: 18' thru lane, 18' thru lane (No parking restrictions)

* N Kensington St tapers down to 36' from 55' after Warehouse Rd. 4 lanes with an island merge into 2 lanes.

INSUFFICIENT WIDTH

W Lawrence St

East - S Appleton St to S Oneida St
Existing configuration: 12' thru lane, 12' turn lane, 12' thru lane

Proposed Bike Lane Locations - Cross Sections
Appleton, Wisconsin

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0 5 10
Feet

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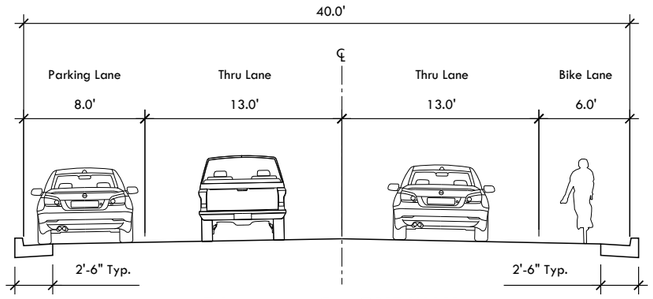
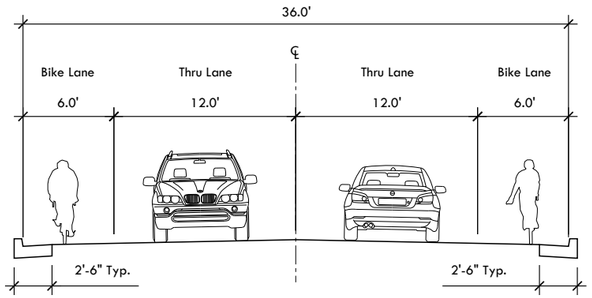


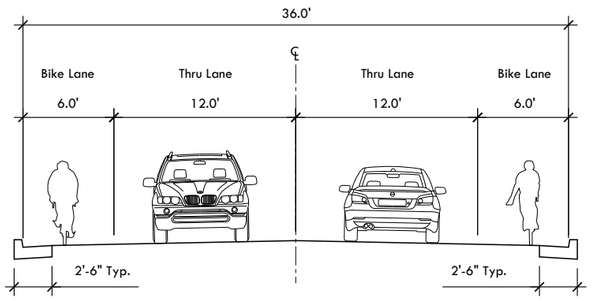
E Lawrence St - ONE WAY

East - S Oneida St to S Morrison St
Existing configuration: 8' parking lane, 12' thru lane, 12' thru lane, 8' parking lane



S Linwood Ave

North - W Spencer St to W Packard St
Existing configuration: 18' thru lane, 18' thru lane
(No parking restrictions in some areas)



Mason St

North - W Propsect Ave to north city limits
Existing configuration: (2) 18' thru lanes

INSUFFICIENT WIDTH

N Meade St

North - E Longview Dr to E First Ave
Existing configuration: (2) 11' thru lanes, TWTL, (2) 11' thru lanes

INSUFFICIENT WIDTH

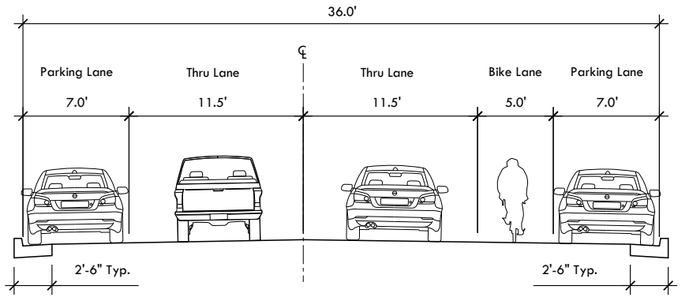
N Meade St

North - E First Ave to E Florida Ave
Existing configuration: (4) 11' thru lanes

INSUFFICIENT WIDTH

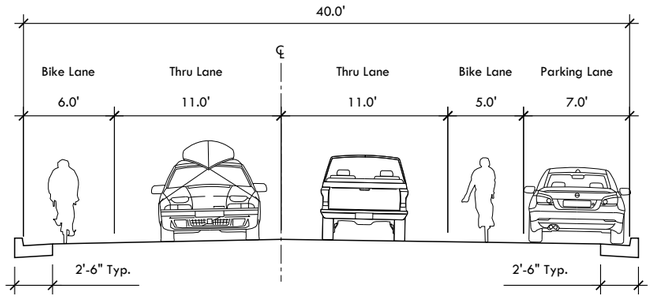
N Meade St

North - E Florida Ave to E Capitol Dr
Existing configuration: (4) 11' thru lanes



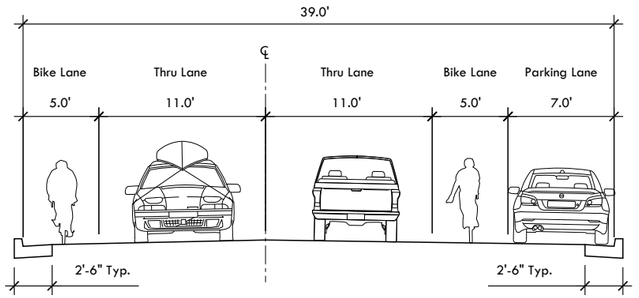
Morrison St - ONE WAY

North - E Lawrence St to E Washington St
Existing configuration: 8' parking lane, 13' thru lane, 13' thru lane, 8' parking lane



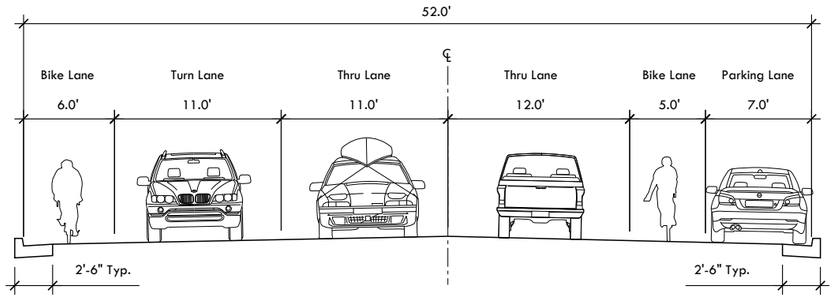
E Newberry St

East - S Telulah Ave to S Schaefer St
Existing configuration: 8' parking lane, 12' thru lane, 12' thru lane, 8' parking lane



E Newberry St

East - S Schaefer St to N Kensington St
Existing configuration: 7.5' parking lane, 12' thru lane, 12' thru lane, 7.5' parking lane



S Olde Oneida St

North - S Oneida St to E South River St
Existing configuration: 14' turn lane, 12' turn lane, 26' thru lane

Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-5

0 5 10
Feet

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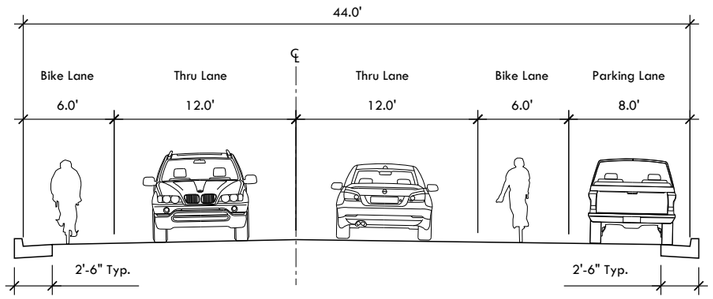
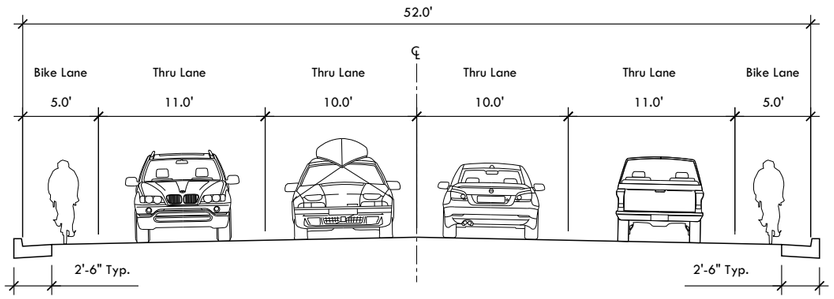


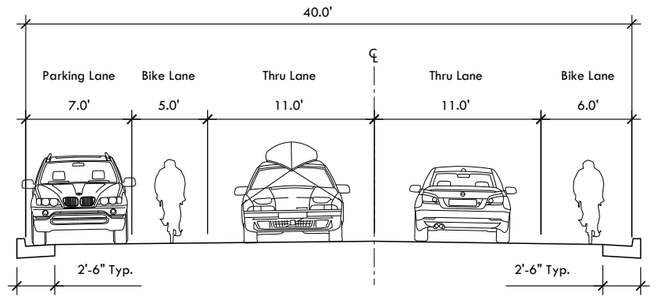
S Olde Oneida St

North - E South River St to Fox River Bridge
Existing configuration: 8' parking lane, 14' thru lane, 14' thru lane, 8' parking lane



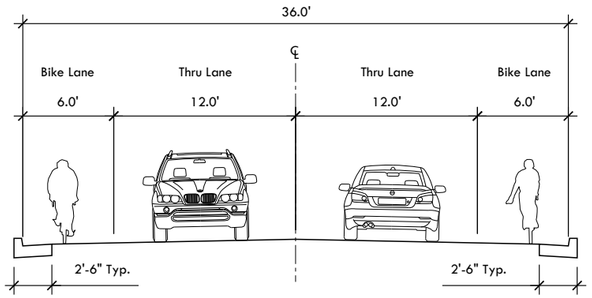
S Oneida St

North - W Seymour St to W Prospect Ave
Existing configuration: (4) 13' thru lanes



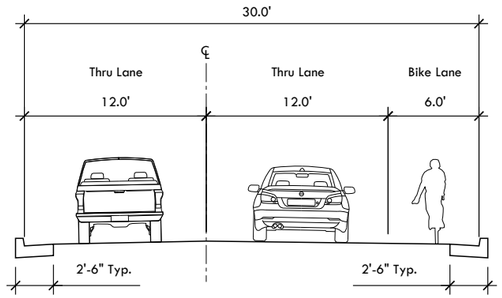
N Oneida St

North - E Glendale Ave to E Frances St
Existing configuration: (2) 20' thru lanes



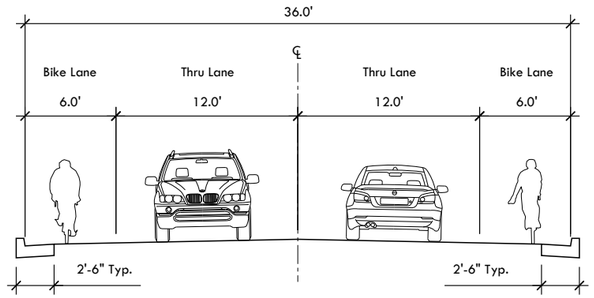
S Olde Oneida St

North - Fox River Bridge to Water St
Existing configuration:



S Oneida St - ONE WAY

North - W Prospect Ave to E Lawrence St
Existing configuration: (2) 15' thru lanes



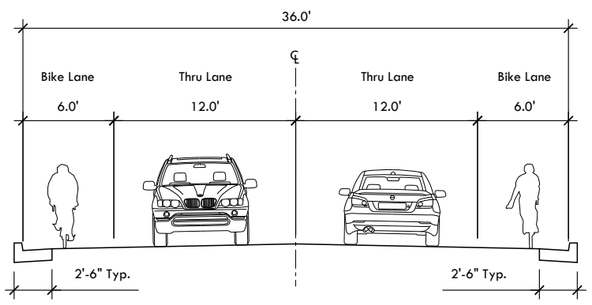
N Oneida St

North - E Frances St to E Northland Ave
Existing configuration: (2) 18' thru lanes

INSUFFICIENT WIDTH

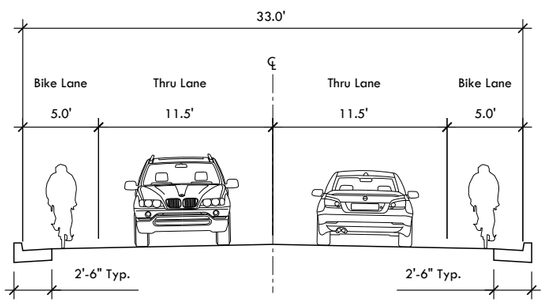
S Oneida Rd

North - E Midway Rd to E Roeland Ave
Existing cofiguration: 12' Thru lane, 12' Thru Lane, 13' TWTL, 12' Thru Lane, !2' Thru Lane



N Oneida St

North - W Atlantic St to E Glendale Ave
Existing configuration: (2) 18' thru lanes



N Oneida St

North - E Northland Ave to E Capitol Dr
Existing configuration: 5' paved shoulder, 11.5' thru lane, 11.5' thru lane, 5' paved shoulder
*Paved Shoulder

Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-6

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Feet

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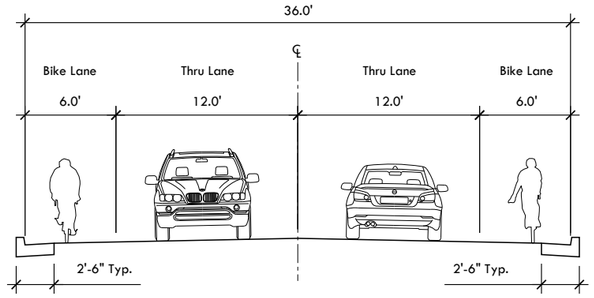
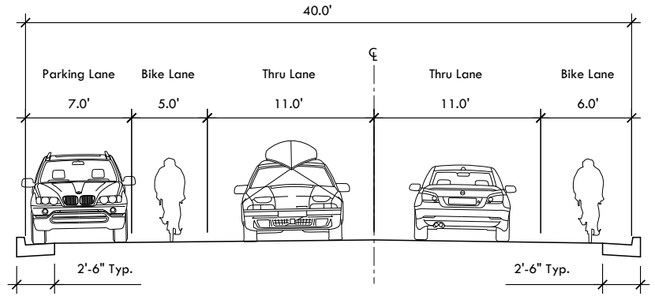


W Packard St

North - N Locust St to N Richmond St
Existing configuration: 18' thru lane, 18' thru lane



W Prospect Ave

East - S Mason St to S Fairview St
Existing configuration: 20' thru lane, 20' thru lane

INSUFFICIENT WIDTH

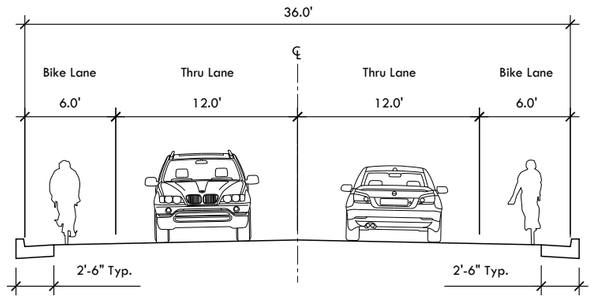
W Prospect Ave

East - S State St to W Sixth St
Existing configuration: 14' thru lane, 14' thru lane

INSUFFICIENT WIDTH

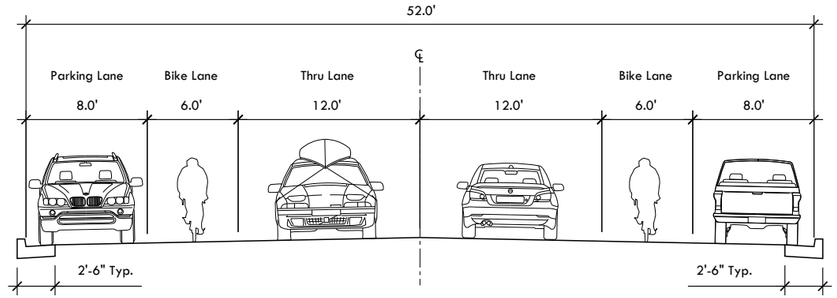
W Packard St

East - N Richmond St to N Division St
Existing configuration: (4) 11' thru lanes



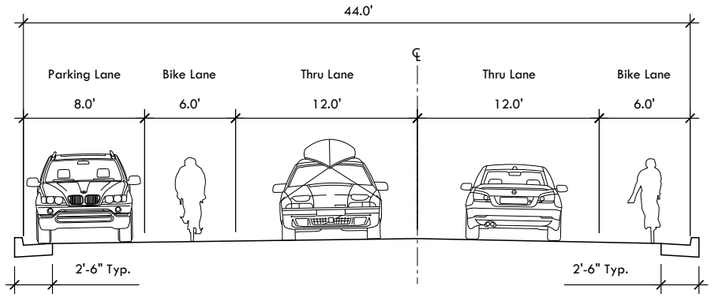
E Plank Rd

East - 750' west of S Lake Park Rd to 650' east of S Lake Park Rd
Existing configuration: 18' thru lane, 18' thru lane



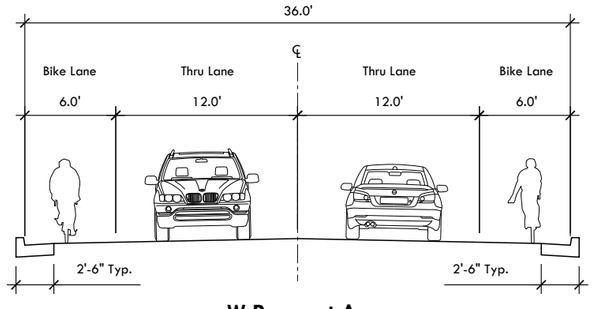
W Prospect Ave

East - W Sixth St to S Appleton St
Existing configuration: 26' thru lane, 26' thru lane
(Limited time parking in some locations)



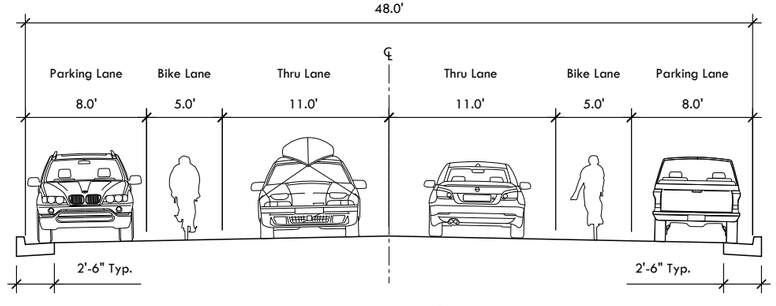
W Packard St

East - N Division St to N Appleton St
Existing configuration: (2) 22' thru lanes



W Prospect Ave

East - S Fairview St to S State St
Existing configuration: 18' thru lane, 18' thru lane
(No parking restrictions Fairview to Locust)



Roemer Rd

North - E Glendale Ave to E Winslow Ave
Existing configuration: (2) 24' thru lanes

Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-7

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Feet

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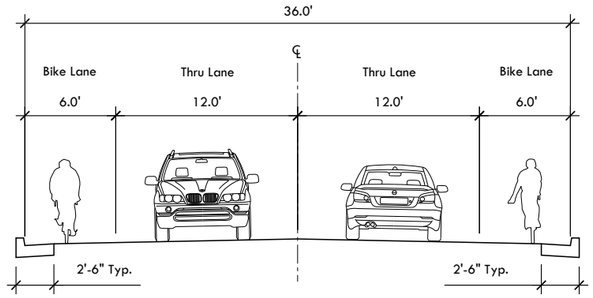
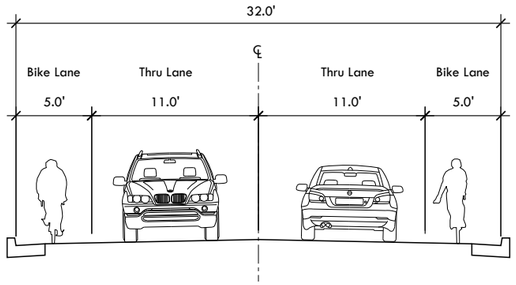


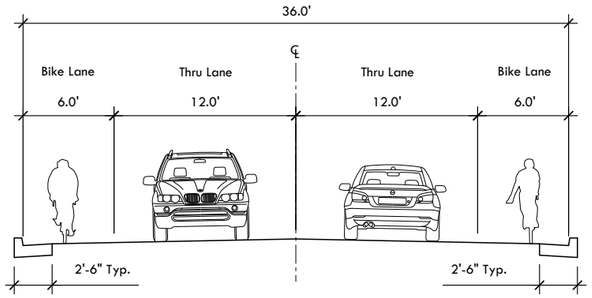
Roemer Rd

North - Winslow Ave to E Capitol Dr
Existing configuration: (2) 18' thru lanes



E South River St

East - S Madison St to S East St
Existing configuration: 16' thru lane, 16' thru lane



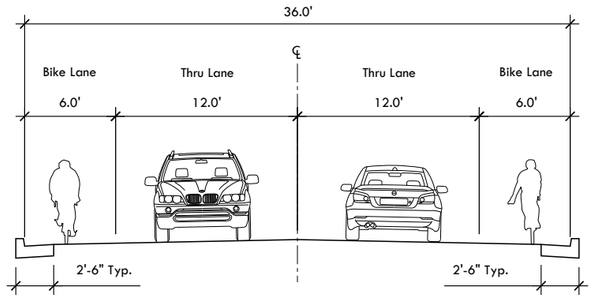
W Spencer St

East - S Linwood Ave to S Mason St
Existing configuration: 18' thru lane, 18' thru lane
(No parking restrictions)

INSUFFICIENT WIDTH

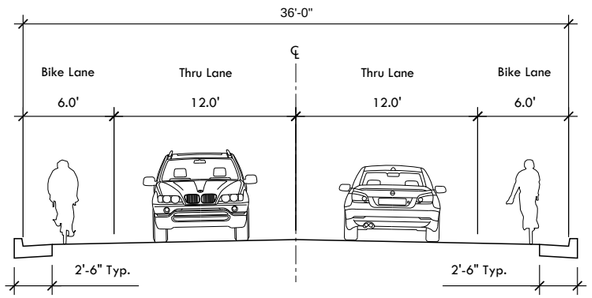
E South River St

East - S Olde Oneida St to 190' east of Olde Oneida St
Existing configuration: 13.5' thru lane, 13.5' thru lane



E South River St

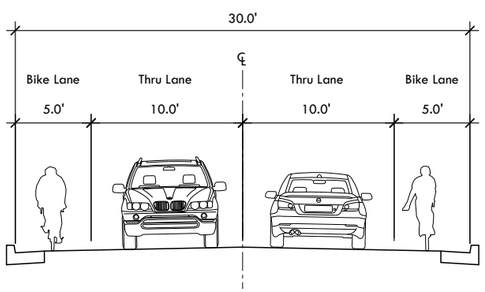
East - S East St to S Kernan Ave
Existing configuration: 18' thru lane, 18' thru lane



S Telulah Rd

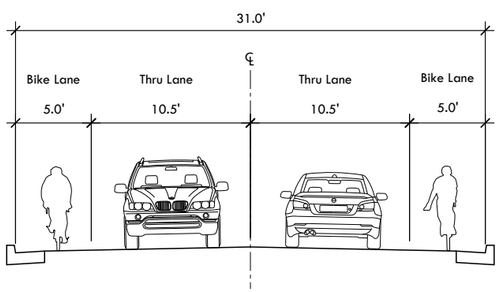
North - Midway Rd to E John St
Existing configuration: 7' Parking, 11' Thru Lane, 11' Thru lane, 7' Parking

* Common parking location where allowed in this segment. (Athletic fields?)



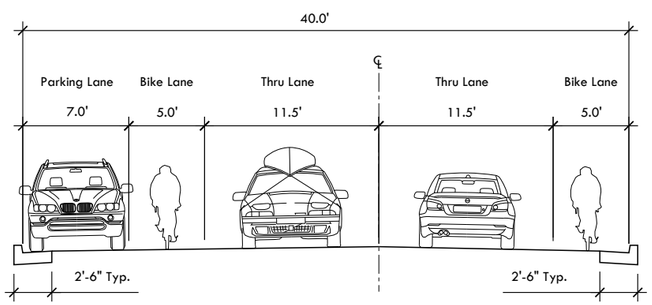
E South River St

East - 190' east of Olde Oneida St to S Madison St
Existing configuration: 15' thru lane, 15' thru lane



E South River St

East - S Kernan Ave to E John St
Existing configuration: 15.5' thru lane, 15.5' thru lane



S Walter Ave

North - E College Ave to E Gunn St
Existing configuration: (2) 20' thru lanes

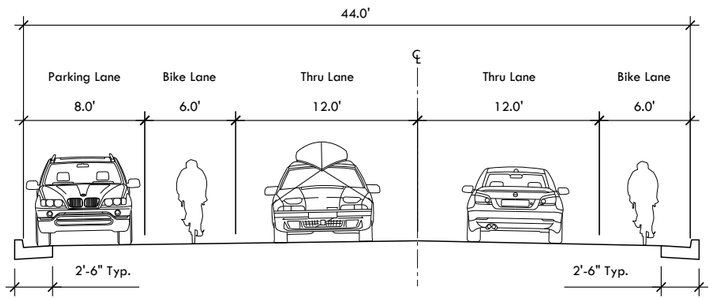
Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-8

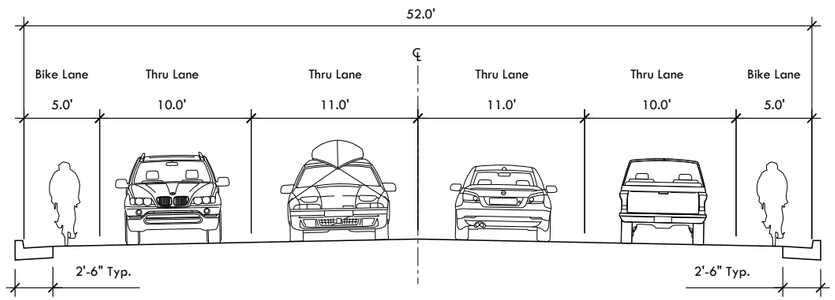
0 5 10
Feet

March 2010
Project 2377



S Walter Ave

North - E Gunn St to E Newberry St
Existing configuration: (2) 24' thru lanes



E Wisconsin Ave / Highway 96

East - N Ballard Rd to Grand View Rd
Existing configuration: (4) 13' thru lanes

INSUFFICIENT WIDTH

E Water St

East - S Olde Oneida St to E College Ave
Existing configuration: (2) 11.5' thru lanes

Proposed Bike Lane Locations - Cross Sections

Appleton, Wisconsin

CS-9

0 5 10
Feet

June 2010
Project 2377

Bike/Parking Lane Feasibility

- Bike lanes only
- Bike lanes and parking lanes
- Bike lanes and one parking lane
- Insufficient width for bike lanes or parking lanes
- Additional turn lanes approaching intersection

Proposed Bike Lane Feasibility - Sub Area 2

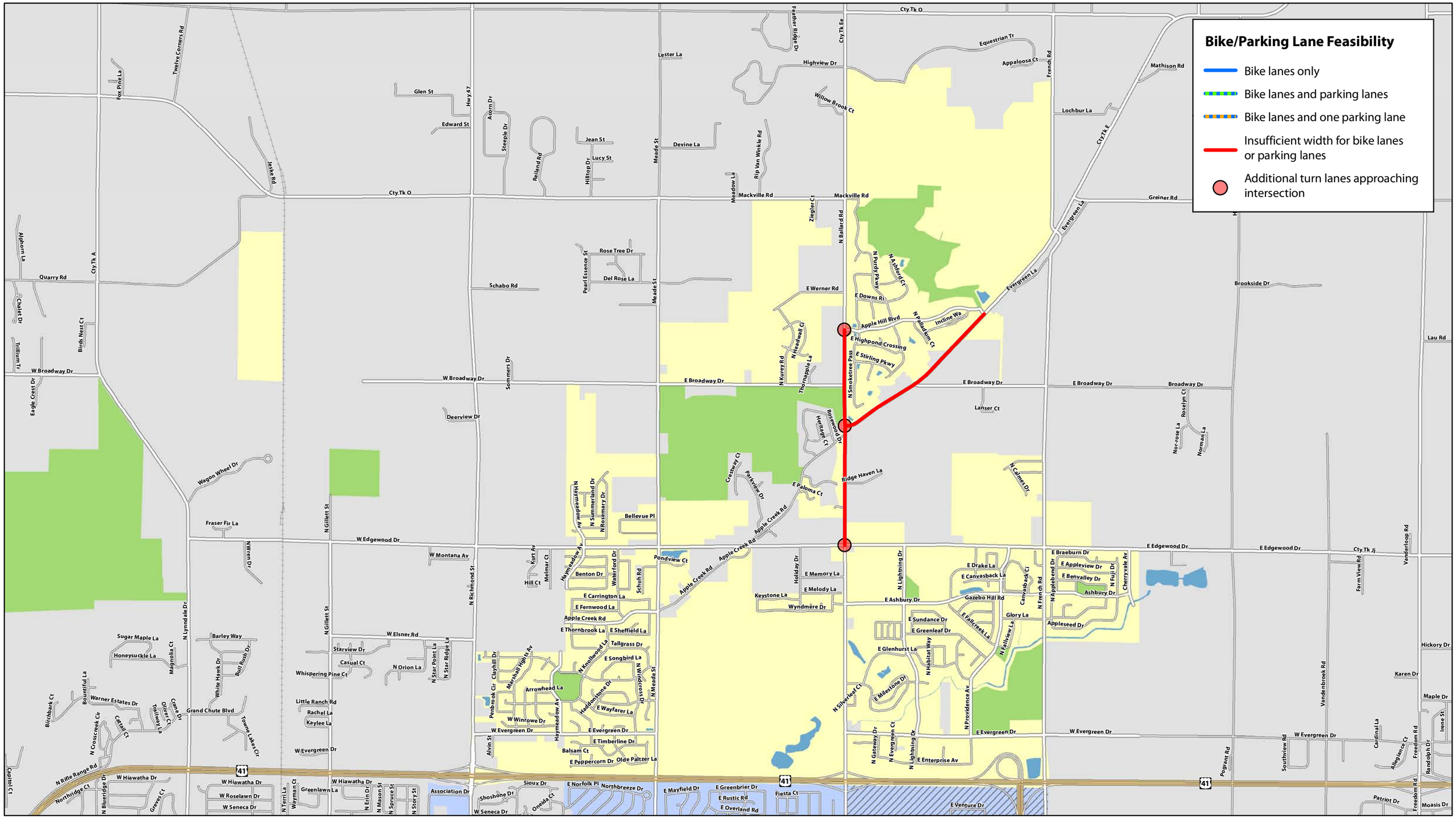
Appleton, Wisconsin

Map 6B

0 1,250 2,500 Feet

SAA

April 2010
Project 2377



Proposed Bike Lane Feasibility - Sub Area 3

Appleton, Wisconsin

Map 6C

0 1,250 2,500 Feet

April 2010
Project 2377

Bike/Parking Lane Feasibility

- Bike lanes only
- Bike lanes and parking lanes
- Bike lanes and one parking lane
- Insufficient width for bike lanes or parking lanes
- Additional turn lanes approaching intersection

Proposed Bike Lane Feasibility - Sub Area 1

Appleton, Wisconsin

Map 6A

0 1,250 2,500 Feet

SAA

April 2010
Project 2377

Legend

- Existing Trail
- Proposed Trail
- Bike Route (1 to 5 year improvement)
- Bike Lanes (1 to 5 year improvement)
- Bike Route (5 to 10 year improvement)
- Bike Lanes (5 to 10 year improvement)
- Bike Route (10 to 15 year improvement)
- Bike Lanes (10 to 15 year improvement)
- Bike Route (15 to 20 year improvement)
- Bike Lanes (15 to 20 year improvement)

41 41 41 441 441 441 441

Proposed Bicycle Network

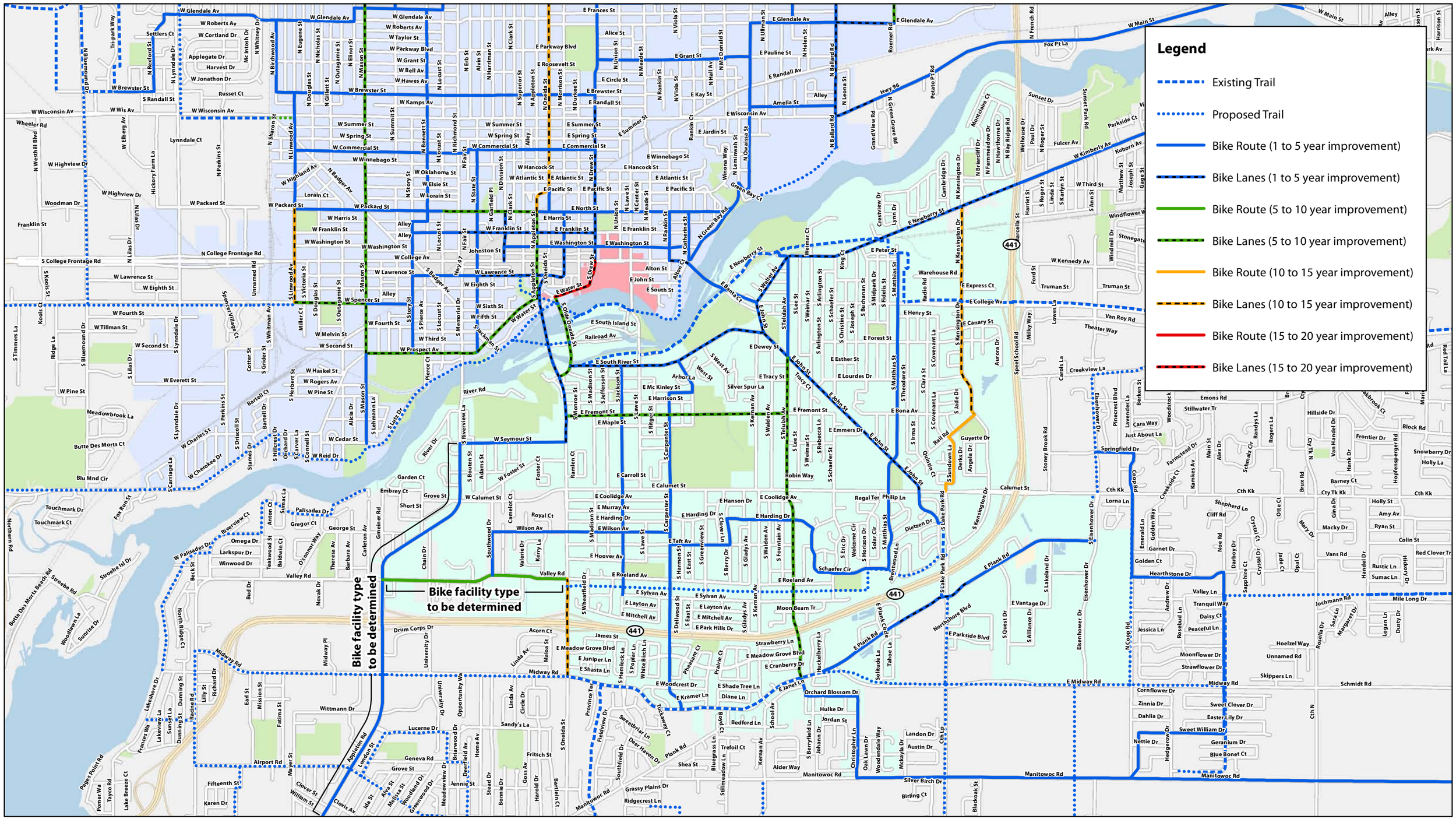
Appleton, Wisconsin

Map 7A

0 1,600 3,200 Feet

SAA

July 2010
Project 2377



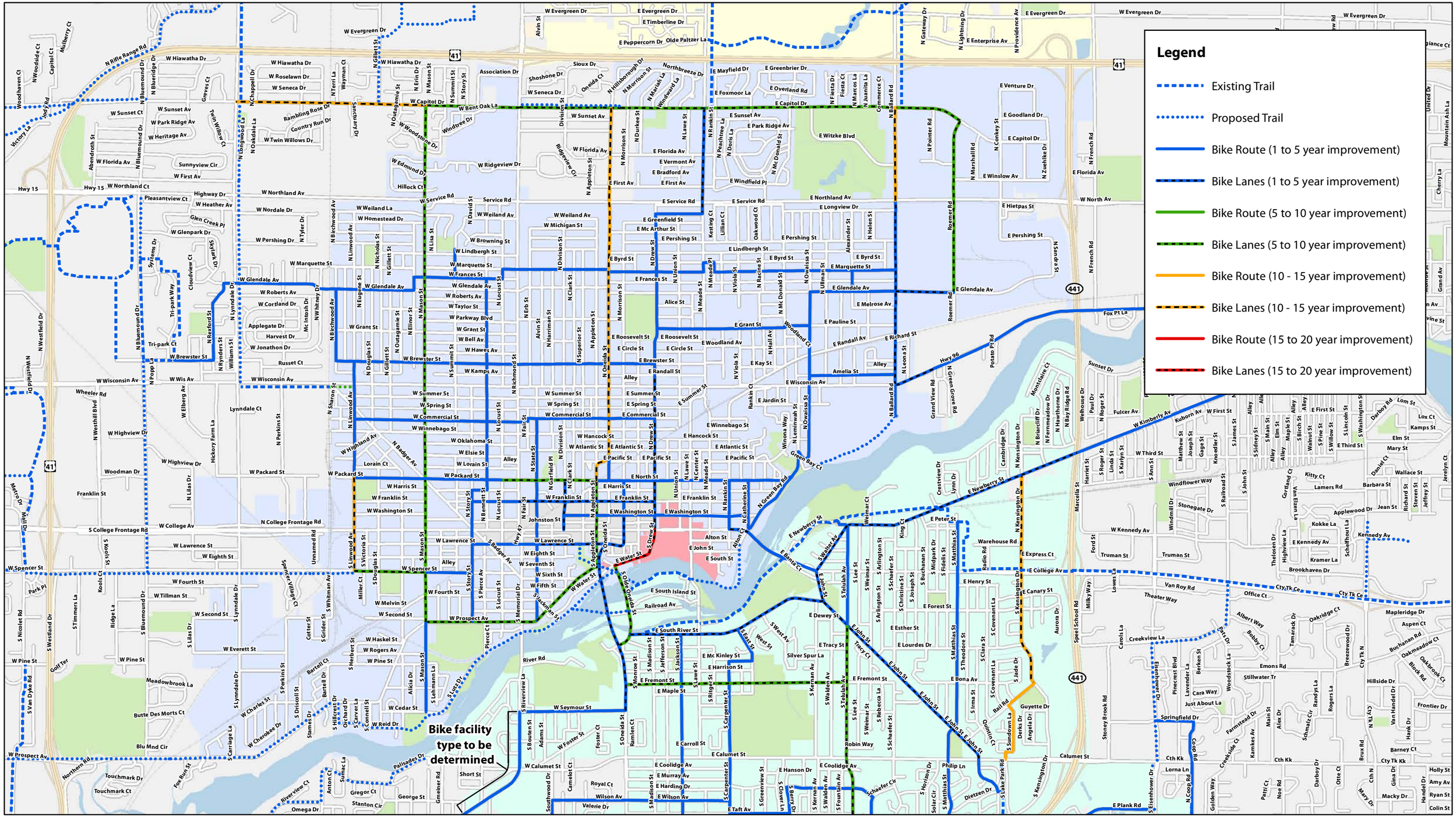
Proposed Bicycle Network - Sub Area 1

Appleton, Wisconsin

Map 7B

0 1,250 2,500 Feet

July 2010
Project 2377



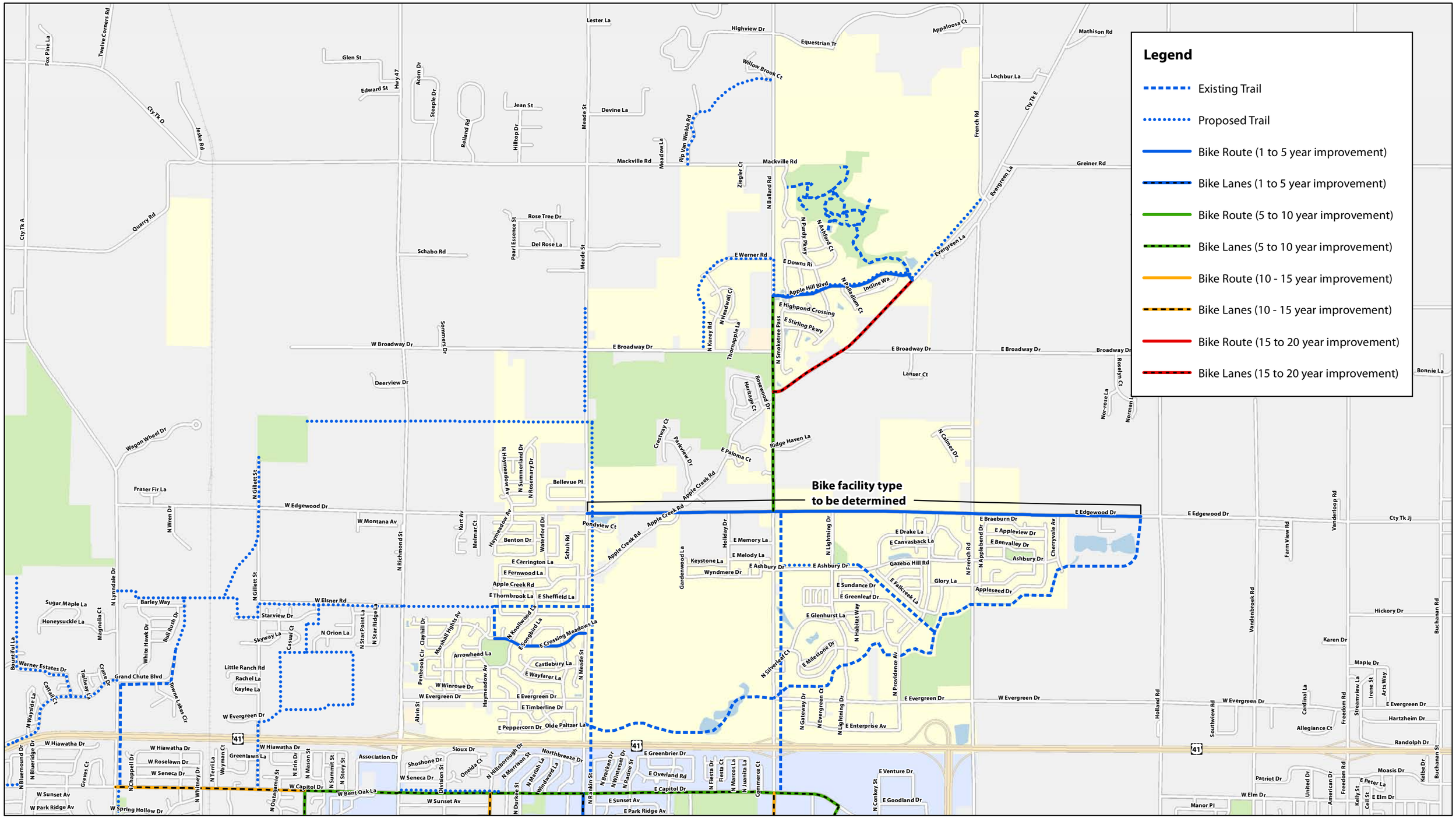
Proposed Bicycle Network - Sub Area 2

Appleton, Wisconsin

Map 7C

0 1,250 2,500 Feet

July 2010
Project 2377



Proposed Bicycle Network - Sub Area 3

Appleton, Wisconsin

Map 7D

0 1,250 2,500 Feet

June 2010
Project 2377