

CITY OF ANN ARBOR
2013 NON-MOTORIZED
TRANSPORTATION PLAN
FINAL DRAFT

SEPTEMBER 10, 2013

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Introduction

Introduction

Background & Metrics

The 2007 Non-motorized Transportation Plan (NTP) envisioned a physical and cultural environment that supports and encourages safe, comfortable, and convenient ways for pedestrians and bicyclists to travel throughout the City and into the surrounding communities.

Since 2007, the City of Ann Arbor has made significant progress in building this physical and cultural environment. Figure 1 shows the miles for four types of non-motorized facilities in 2007, the NTP recommendations for each facility, and what has been added since the NTP was adopted. Bike lanes are presented as lane miles: a lane mile is calculated by measuring the length of roadway with bike lanes and multiplying it by the number of bike lanes. For example, one mile of road with a bike lane on one side of the road measures as one mile. A mile of road with bike lanes in both directions measures as two miles. The City has added nearly half of the 82.5 bike lane miles recommended in 2007, bringing the total length of bike lanes to 71.4 lane miles.

Figure 1 – Bike facility progress since 2007, in lane miles

	Bike Lanes	Shared-use Arrow	Shared-use Path	Bike Route
Existing in 2007	35.4	0.9	55.0	5.2
Added since 2007	36.0	10.2	2.2	0.0
Total in 2013	71.4	11.1	57.2	5.2
Recommended in 2007	82.5	13.3	2.0	25.4
Progress in 2013	43.7%	77.0%	110.0%	0.0%

Figure 2 shows progress made in pedestrian facilities. Over a quarter of the 2007 NTP recommended midblock crossings have been implemented, and many of these have received facilities like flashing beacons and/or pedestrian crossing islands. The 2007 NTP sidewalk recommendations focused on major facilities and those that served pedestrian access to schools, therefore this inventory illustrates the progress made in those areas only.

Figure 2 – Pedestrian facility progress since 2007

	Major Crossings	Minor Crossings	Sidewalks (miles)
Existing in 2007	59	14	-
Added since 2007	31	7	3.4
Total in 2013	90	21	-
Recommended in 2007	105	25	25.0
Progress in 2013	29.5%	28.0%	13.6%

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The NTP Plan used mode-share to describe non-motorized use rates in 2007 and to set goals for the City. Mode-share is the percentage of trips made by one mode, e.g. bicycling, relative to all trips. The most common mode-share statistic is commuter mode-share, which measures trips to work. The NTP cited Census data, but in recent years, the American Community Survey (ACS) has replaced the traditional decennial Census. The ACS surveys a small percentage of citizens each year, and averages the annual results into consolidated reports. From 2006 to 2010, the ACS sampled residents of Ann Arbor and produced the 2006-2010 five-year ACS reports.

The NTP anticipated that bicycling would make the largest mode-share gains, which has proven true in the past six years. Figure 3 shows the progress made in commuter mode-share from ACS data for bicycling, walking, and public transit. The NTP does not include direct recommendations for transit, but each transit rider is a pedestrian at the beginning and end of each trip, so an increase in transit mode-share is an important trend to consider in the NTP Update. The total mode-share of alternative transportation has increased from 25.8% in 2000 to 28.0% in 2006-2010.

Figure 3 – Commuter mode-share changes since 2007

	Bicycling	Walking	Public transit
Mode-share in 2000	2.4%	16.5%	6.9%
NTP Recommendation	6.0%	20.0%	-
Mode-share in 2006-2010	3.5%	15.6%	8.9%
Change since 2000	45.8%	-5.5%	29.0%

This ACS measures work trips only; it may be true that recreational, utilitarian, or other trips have different mode-shares. Additionally, the survey data does not accurately measure the annual trends for statistics like bicycle commuter mode-share because it aggregates five years of data into one report. Therefore, a major physical or policy improvement may not be reflected in ACS mode-share reports until several years have passed.

Determining annual mode-share increases for recent years can also be measured by observer counts. Instead of a mailed survey, the following count data is compiled using direct observation of actual trips. The non-motorized program has been able to complete counts at important intersections before and after facility upgrades to measure the direct result of investment. Figure 4 shows the results for two intersections, before and after the addition of bike lanes. A marked increase in total bicyclists and comfort using the road is evident.

Figure 4 – Bicycle counts for intersection of Liberty St & Seventh St, before and after bike lanes on Seventh.

	Bicyclists Observed	Bicyclists in the road
Liberty & Seventh – 2007	354	53%
Liberty & Seventh – 2011	488	65%
Change	38%	22%

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Figure 5 – Bicycle counts for intersection of Catherine St and Fifth Ave, before and after bike lanes on Catherine St and Fifth Ave

	Bicyclists Observed	Bicyclists in the road
Catherine & Fifth – 2007	362	55%
Catherine & Fifth – 2012	582	74%
Change	61%	23%

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The Non-motorized Planning Framework

Introduction

In an initial phase of the review process, several technical reports were drafted to review and evaluate the City's non-motorized transportation program's progress. The reports were modeled after the League of American Bicyclists' evaluation categories referred to as the "Five Es"; Engineering, Education, Encouragement, Evaluation, and Enforcement. Reports were also produced for two additional topics: Funding and Prioritization. These reports were created from field surveys, research, public input, and staff experience of implementation since 2007.

Engineering

2007 NTP – Chapter 2

Engineering addresses the physical implementation of the NTP's recommendations for biking for walking. It considers all bike and pedestrian facilities included in the near-term recommendations, as well as signs, bike parking, and the design guidance used by staff to plan system expansion.

The NTP Update recommends an expansion of the non-motorized system through a broader array of non-motorized elements.

Education

2007 NTP – Chapter 3

Education is integral to implementation of non-motorized transportation. It is the avenue by which City staff can inform drivers, cyclists, and pedestrians of the rules and expectations that exist for each of them. With a constantly changing non-motorized infrastructure, culture, and legal context, effective education techniques are critical for successful systems.

Encouragement

2007 NTP – Chapter 3

Encouragement relates to a community's strategies to promote bicycling and increase the number of cyclists. Separate from education, encouragement deals with the programming, maps, signage, and other unique means to advocate for increased use of non-motorized transportation.

Evaluation

2007 NTP – Chapter 3

Evaluation allows a community to measure the effectiveness of infrastructure, policies, programs, and the legal framework in place for non-motorized use. The evaluation process not only quantifies the progress made in a non-motorized program, it helps provide direction for future action. It can provide leverage for a shift in priorities, when appropriate, to ensure that implementation is consistent with the adopted planning documents in place. Evaluation processes demonstrate a commitment to measuring results and planning for the future.

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The City's annual physical system evaluation program includes inventorying the conditions of the non-motorized system as well as monitoring of bicycling and walking volumes at key locations. Our evaluation program has resulted in an overall increase in the physical condition of the non-motorized system. Not only has the system expanded as described in the Introduction, but the conditions have also improved. Sidewalk maintenance has been comprehensively evaluated due to recent inventory efforts which, in part, led to the passage of a millage allowing for City forces to assure all sidewalks continue to be maintained properly. The annual bicycle inventory has resulted in poor pavement and pavement marking areas to be addressed responsively. In addition to the City's direct efforts, a 24 hour on-line maintenance reporting program and the pothole hotline add to the ability of citizens to provide input to address infrastructure deficiencies.

Enforcement

2007 NTP – Chapter 4

Enforcement addresses the legal framework surrounding the non-motorized system. It describes how the non-motorized transportation program should operate within the framework of codes and regulations within the City, and it evaluates non-motorized use within the framework of important changes to City Code. Enforcement strategies promote safe interaction between all users of shared roads and sidewalks. Enforcement includes City Code, police actions, and policies and programs. Cycling and pedestrian ordinances, police actions, and policies and programs that guide non-motorized use all contribute to effective enforcement in Ann Arbor.

Speed limits are one example of an element of the legal framework directly related to enforcement. In Ann Arbor, the maximum speed limit on city-owned roads is 35 mph. The intuitive understanding that pedestrian risk rises with vehicle speeds has been established by many studies in the past 20 years. The conclusions of two studies are shown in Figure 3. The non-motorized program focuses on enforcement techniques to ensure the safety of all users along and across the roadway.

Figure 6 – Odds of pedestrian death increase dramatically with elevated vehicle speeds.^{1 2}

	Source 1	Source 2
Vehicle Speed	Odds of Ped. Death	Odds of Ped. Death
20 mph	5%	5%
30 mph	45%	37%
40 mph	85%	83%

¹ Australian Federal Office of Road Safety, *Vehicle Speeds and the Incidence of Fatal Pedestrian Collisions*, Report CR 146, 1994.

² U.K. Department of Transportation, *Killing Speed and Saving Lives*, London, 1987.

Funding

Introduction

2007 NTP – Chapter 6

Funding for non-motorized infrastructure and programs comes from many sources, including:

- Moving Ahead for Progress in the 21st Century (MAP-21), the most recent federal transportation bill.
- The Michigan Transportation Fund (MTF), the state’s vehicle revenue distribution fund created through Act 51 of 1963.
- City policies like resolutions R-176-5-03 and R-217-5-04 that direct funding to the non-motorized program and promote bike lane installation.

Non-motorized progress has been accomplished through direct investments and by piggybacking on road and other infrastructure projects. This cost-effective approach has led to many new miles of bike lanes and other facilities since 2007 that would not have been implemented as standalone projects. However, this funding mechanism highlights the challenge of funding facilities that cannot often be included with other infrastructure projects.

Prioritization

2007 NTP – Chapter 5

An early look at the 2007 NTP’s near-term opportunities revealed that definition of near-term included substantially more projects than could be completed with available resources. The non-motorized program established a priority ranking system to identify the most impactful projects available for implementation. The review process included a review and a reapplication of the ranking system. The prioritization issue paper examines this process in detail.

Access to the Technical Reports

All of the reports created during the writing process for the Non-motorized Transportation Plan Update can be found on the City’s Non-Motorized Transportation Plan Review webpage:

http://www.a2gov.org/government/publicservices/systems_planning/Transportation/Pages/Non-MotorizedTransportationPlanreview.aspx.

A copy of the technical reports is available under “Draft Issue Papers” link on the Non-Motorized Transportation Plan Review webpage, <http://www.a2gov.org/NTPUpdate>, or directly at:

http://www.a2gov.org/government/publicservices/systems_planning/Transportation/Documents/DRAFT%20Issue%20Papers.pdf.

2013 Non-motorized Plan Update

Introduction

Many of the recommendations in the 2007 NTP remain valid and relevant today. Innovations in non-motorized facility design and implementation since 2007 have created new opportunities. In November 2011, the City began a review of the 2007 NTP to evaluate the non-motorized transportation program's achievements, describe implementation challenges, identify policy and program areas for improvement, and address new best practices for incorporation into the City's non-motorized transportation program. Public input, staff research and review, and advisory committee guidance have shaped the recommendations listed in this document. The result is a Plan Update to append to the 2007 City of Ann Arbor Non-Motorized Transportation Plan.

The document is divided into three main segments:

Planning and Policy Updates

2007 NTP: Chapters 2 & 3, Pages 11-138

This section evaluates new types of bicycle and pedestrian facilities and programs that have emerged since 2007 as proven strategies for building a non-motorized system. While the 2007 NTP identified some of these facilities and programs, the NTP Update builds on the NTP to further explore the opportunity to use these innovative solutions. This section also provides recommendations that address implementation challenges that staff has experienced since 2007.

Near-term Recommendation Updates

2007 NTP: Chapter 5, Pages 160-176

The 2007 NTP included near-term and long-term recommendations for the following facilities throughout Ann Arbor:

- Signalized Crossings and Roundabouts
- Midblock Crossings
- Bike Lanes
- Bike Routes
- Shared-use Arrows
- Sidewalks
- Shared-use Paths
- Foot Trails

Near-term recommendations included cost-effective and easily implemented minor changes that do not require road reconstruction. Two examples of near-term changes include re-striping the road surface to install bike lanes and adding crossing islands. The 2007 Near-term Opportunities Map illustrated the NTP's near-term recommendations. The NTP also included select detailed views to provide an additional level of analysis in specific areas of the city.

The NTP Update adopts this approach and revisits near-term recommendations in several areas that have proved non-implementable. This section includes a description of the original Plan

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recommendation, a discussion of the revised recommendation for the area, and a detail mapping of the new recommendation.

Long-term Recommendation Update

2007 NTP: Chapter 5, Pages 177-184

Long-term solutions represent the ideal implementation for a given corridor, often requiring significant physical adjustments to the cross section of a roadway. Long-term recommendations do not have an implementation timetable. Due to the significant costs or construction required, they are typically completed as an independent improvement or as an element of other projects. For example, East Stadium Blvd was recently reconstructed, and the project incorporated all of the recommendations for that segment, including two major midblock crossings and new bike lanes. These improvements were identified in the 2007 NTP as long-term recommendations.

Long-term recommendations in the roadway:

- Are generally implemented when a new road is built or an existing road is reconstructed. Reconstruction projects typically include new curb, gutter, and stormwater systems.
- Generally require road widening to accommodate the minimal lane width requirements for all users. This may require additional ROW.
- Strive to meet the minimum desired widths for bike lanes, motor vehicle lanes, buffers, and sidewalks to the extent that it is practical given the project's context (Pg. 177).

Most of the 2007 Non-motorized Transportation Plan's Long-term recommendations remain relevant and appropriate in the 2013. However, there are four long-term areas discussed in the NTP Update Report to reemphasize the NTP's recommendation: Allen Creek Greenway, Border to Border Trail, Gallup Park & Fuller Road Paths and Briarwood-Pittsfield Pedestrian Bridge.

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Planning and Policy Updates

Planning and Policy Updates

2007 NTP: Chapters 2 & 3, Pages 11-138

The Planning and Policy Updates section brings forth proven strategies that were considered emerging in 2007 for consideration and integration into the City's standardized practices. These strategies include updated design guidelines, non-motorized in-road facilities and systems, and planning practices.

Design Guidelines:

Since 2007 multiple sets of guidelines that were used in the NTP have been updated. In understanding the dynamic nature of bicycle and pedestrian facility planning, it is essential that innovative and proven strategies are taken into consideration for future use.

Non-motorized In-road Facilities and Systems:

Working off of the updated design guidelines, in-road facilities and systems that were once considered emerging are recommended for implementation consideration. These in-road facilities and systems share a common theme of creating safe, separated facilities for cyclists both on and off the road.

- Bike Boulevard
- Cycle Track
- Bike Share
- Bike Lane Color Treatment
- Bike Station

Planning Practices:

Due to the intrinsic nature of planning, lessons are frequent learned along the way as challenges arise. Since 2007 City Staff has faced and learned from many challenges. From these lessons new recommendations have emerged which address how to better plan for the "Five E's" of transportation planning: engineering, education, education, encouragement and evaluation.

- Snow Removal
- Facility Maintenance
- "3D" Signage
- Online Way-Finding Technology
- Education Campaign Evaluation
- Bike Parking Evaluation
- New Sidewalk Funding
- New Midblock Crosswalk Funding
- MAP-21 (Federal) and Act-41 (State) Funding

Updated Design Guidelines – Engineering

Planning and Policy Updates

2007 NTP: Pages 4, 11-94

The bulk of the 2007 NTP covered the planning and design guidelines for bicycle and pedestrian facilities. As noted in the introduction, the intent of the NTP was to synthesize the available guidelines into one comprehensive document, interpreted for applicability to Ann Arbor. The NTP drew its design recommendations and illustrations from these documents; it also recognized that the guidelines were subject to change in such an evolving field, and recommended that users of the NTP identify and adopt updates periodically.

City staff uses several sets of guidelines updated as recently as 2012 in designing bike and pedestrian facilities. These include:

- American Association of State Highway and Transportation Officials (AASHTO) Bike Guide
- US Department of Justice's Americans with Disabilities Act (ADA)
- MDOT's MMUTCD
- City of Ann Arbor's NTP
- National Association of City Transportation Officials (NACTO)

NACTO is a recently formed organization that has published an Urban Bikeway Design Guide, a set of design guidelines which staff may choose to utilize. During and following the review process, NACTO guidelines will be scrutinized to determine whether they comply with Michigan law and whether the proposed designs are feasible in Ann Arbor.

Additionally, AASHTO and MMUTCD have been updated in recent years. Staff should establish updated guidelines based on all available resources to standardize implementation of traditional and new facilities such as flashing beacons, 3D signs, and pavement markings.

Coordination between the Ann Arbor Downtown Development Authority (DDA) and the City is recommended in the DDA's writing of the Street Framework Plan. As the Street Framework Plan will address non-motorized facilities, such as bicycle parking, it will be important that the updated design guidelines are considered in the Street Framework Plan's formulation. The DDA announced the Street Framework Plan in the summer of 2013.

Bike Boulevard – Engineering

Planning and Policy Updates

2007 NTP: Pages 18-26

In the 2007 NTP, bicycle travel along road corridors was planned with bike lanes, shared roadways, and shared-use paths (pg. 18). These three options represented the primary facilities used for on and off-road bike travel at the time of plan writing. The NTP described the advantages and disadvantages of each facility under various roadway cross sections, developing a preferred facility option based on the level of service to cyclists under each scenario. Since that time, alternatives to in-road bicycle lanes have become popular. These alternatives can provide a higher level of service for cyclists than bike lanes, shared roadways, or shared-use paths, when implemented correctly. One of these alternatives is the Bike Boulevard.

A Bike Boulevard is a low-traffic, low-speed road where bicycle interests are prioritized. Typically, Bike Boulevards are designated on streets that parallel to a major roadway not suitable for accommodating bicycling. Bike Boulevards are created by deploying a system of signs, pavement markings, low speed limits, and intersection treatments facilitating an environment that welcomes cyclists and discourages automobile through traffic. To maximize their impact, Bike Boulevards should be implemented over lengthy stretches of roadway to serve as significant facility features (NACTO Urban Bikeway Design Guide).



Figure 1 – NACTO Urban Bikeway Design Guide Bicycle Boulevard: Signs and Pavement Markings
Illustration

In addition to serving as a priority bicycle facility, Bike Boulevards contribute to traffic calming. The City is dedicated to providing “more livable neighborhoods” through traffic calming measures, and provides a guidebook to help residents understand how these measures can improve their neighborhoods. Many of the physical interventions used by the traffic calming program can be used to implement Bike Boulevards; therefore, a unique opportunity exists to accomplish both goals with one project in strategic locations.

Planning and Policy Updates

The NTP Update recommends developing a Bike Boulevard planning process to shape specific treatments with substantial community engagement. There is no standard treatment, but rather a variety of options for local application of a Bicycle Boulevard. This plan update recommends Bike Boulevard corridors based on general characteristics. When implementing a Bike Boulevard, staff should maximize community engagement by utilizing steering committees and public meetings to ensure citizen support in addition to appropriate engineering and design potential.

Washington St is an example of an implementable conversion to a Bike Boulevard to serve the east-west bicycle traffic between Ann Arbor's western suburbs and the downtown and central campus areas. The Bike Boulevard could start at Revena Blvd to First St: 0.7 center lane miles. In total Washington St is 1.5 center lane miles long, making it a significant route. It has lower traffic levels and slower speeds than Huron St to the north. Public support also exists for the conversion of Washington Street into a Bike Boulevard. It is important to note, the Washington Street corridor is busy at select locations, including the segment in front of the Ann Arbor YMCA, between 1st St and Chapin St. Staff will need to consider all of these factors in the Bike Boulevard planning process for Washington.

Elmwood Ave is another implementable candidate for a Bike Boulevard conversion. A Bike Boulevard conversion on Elmwood Ave may be an alternative to a road diet on Platt Rd from Canterbury Rd to Packard Rd. Elmwood Ave is 0.4 center lane miles long and runs north-south, directly to the east of Platt Rd. Cyclists using Elmwood Ave as a Bike Boulevard could use the existing shared-use path in Scheffler Park to connect to Platt Rd and South Huron Pkwy; however, the 8' wide bridge connector in Scheffler Park may need to be widened to a 10' shared-use path width.

Broadway St is a third implementable candidate for a Bike Boulevard conversion. Running alongside Plymouth Rd, Broadway St provides an alternative route from the Northside neighborhood, at the intersection of Plymouth Rd and Murfin Ave, to the Lowertown neighborhood and the Broadway St Bridge, at the intersection of Plymouth Rd, Maiden Ln, and Moore St. From its northern and southern intersections with Plymouth Rd, Broadway St is 1 center lane mile in length, primarily residential and has lower traffic levels and lanes than Plymouth. Broadway St also already has traffic calming measures in place such as speed humps.

Cycle Tracks – Engineering

Planning and Policy Updates

2007 NTP: Pages 18-26

Similar to Bike Boulevards, Cycle Tracks are not included in the 2007 NTP. Since that time, they have become more widely used in American cities. A Cycle Track is a buffered bike lane which uses pavement markings or physical separators like bollards, wheel stops, or Jersey barriers to protect the bike lane from traffic. Cycle Tracks may be one-way or two-way. Some Cycle Tracks are elevated from the road by a few inches to further separate bikes from traffic. Pedestrians are not allowed to use Cycle Tracks. Cycle Tracks, like Bike Boulevards, prioritize cyclists over motorists. However, where Bike Boulevards may serve bikes and autos, Cycle Tracks are completely separated facilities.



Figure 2 – NACTO Urban Bikeway Design Guide Two-Way Cycle Track Illustration

Where on street parking is allowed, Cycle Tracks are generally located opposite parked cars, and are separated by buffers, grades and/or pavement color. As a result, there is a positive effect on comfort for cyclists traveling along the road.

Cycle Tracks have the potential to produce more conflicts than bike lanes or Bike Boulevards at intersections and driveways. Separated lanes can lead to less awareness from drivers of moving bicycles when turning into driveways or cross streets. Similarly, drivers looking to pull onto the street from a driveway may pull into the Cycle Track and wait until it is safe to make the turn.

Additionally, drivers, used to checking for bikes with the flow of traffic, may not see contra-flow bicycles coming in a two-way bike facility. At intersections, the separated track prevents cyclists from merging with traffic to make left turns as they may do from a bike lane. Instead, bike boxes or two-stage turns should be used to avoid conflicts.

Planning and Policy Updates

The NTP Update recommends considering Cycle Tracks as an appropriate facility to use where context factors like vehicle speed or volume require additional bicycle separation and the road width exists to accommodate them.

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Bike Share – Engineering & Encouragement **Planning and Policy Updates**

2007 NTP: NA

The 2007 NTP did not reference bike sharing, as it was not a widespread technique in the United States when the NTP was written. However, in recent years, several cities have started or expanded bike share systems successfully, illustrating the possibility for Ann Arbor to do the same.

The Clean Energy Coalition (CEC) in Ann Arbor has started exploring a bike sharing program for Ann Arbor. A bike sharing program would enable residents, visitors, and students to access a system of bicycles available throughout town. Under the program, users are able to pick up a bike from one bike parking station, use it to accommodate a trip, and then drop it off at any of the system's stations. There are a number of issues that the CEC needs to explore through the planning process prior to initiating a local bike share program. The placement of bike share facilities in downtown locations where space is limited will require careful planning. Additionally, Michigan weather dictates that protecting bike share bikes from the elements is a concern.

In addition to the independent benefits of bike sharing, it also works well together with transit; bus riders can use bikes to go farther after their transit stop than they would be willing to walk. This extends the effective reach of transit service. Bike share also provides excellent opportunities for visitors to get around town, and it enables everyone to try cycling without the hassle of bike maintenance or a large upfront cost. Washington, DC's Capital Bike share provides a good example of a successful bike share program.

A bike share program is listed as a recommendation under both engineering and encouragement for its two-fold impact. While the structures and bicycles clearly expand the physical system, providing this opportunity also serves to significantly increase ridership throughout the city by creating the opportunity for anyone without a bike to become a bicyclist.

On August 8th, 2013, City Council passed a resolution to approve an Ann Arbor Bike Share Master Agreement with the Clean Energy Coalition (CEC) for implementation and operation of the a bike share program. In alignment with the City, the University of Michigan and the AATA are also providing various levels of financial and planning services for the bike share program.

Implementation of the bike share program will be carried out in phased approach and with significant public input on future station locations and allocation of bikes at stations. At the time of the Plan Update's writing, the bike share program is intended to include 125 bikes at 14 stations throughout the downtown, South Campus, Central Campus, Medical Campus, and North Campus areas. The NTP Update recommends considering locations outside of the immediate downtown and campus areas for the second phase of station placement.

Planning and Policy Updates

Site locations in the public right of way, on private property, and on University property received consideration for the first phase of station placement. The potential station locations within the City right of way include:

- Ashley St and Liberty St
- Library Lane at Fifth Ave
- Liberty St and Division St
- Detroit St and Fifth Ave
- State St and Hoover Ave

10,100 rides, or checkouts, are anticipated within the first year of the bike share system, which is set to launch in the Spring/ Summer of 2014. The anticipated rides are calculated based on the expected bicycling season in Michigan, which runs from April 22nd to November 30th.

- Annual Members: 54% of the 10,100 expected rides are anticipated to come from the predicted 875 annual members
- 24-hour Members: 45% of the 10,100 expected rides are anticipated to come from the predicted 3,500 24-hour members
- Weekly Members: approximately 1% of the 10,100 rides are anticipated to come from the predicted 75 weekly members

Bike Lane Color Treatment – Engineering

Planning and Policy Updates

2007 NTP: Page 58

There are locations in Ann Arbor where conflict arises between bikes and automobiles due to the configuration of bike lanes, travel lanes, and turning lanes. Often, these problem segments are located where a right-turn-only lane is added to the travel lanes at the intersection. The bike lane continues straight through the intersection, splitting the right-most travel lane and the right-turn lane. Merging traffic not only presents a hazard for cyclists, but also for other motorists when confusion over proper behavior prevents successful merging. Alternatively, if the bike lane remains on the outside of all automobile lanes, the right-turning traffic presents a hazard to through bicycle traffic.

Adding color to the bike lane helps to increase visibility of the bike lane. It reaffirms the cyclist's place in the road and encourages drivers to yield. Clarifying the proper behavior will improve vehicle flow and safety for all users. Staff will consider a trial run of the innovation for costs and abilities of such treatment to stand up to traffic and weather conditions, such as plowing.

“Colored pavement within a bicycle lane increases the visibility of the facility, identifies potential areas of conflict, and reinforces priority to bicyclists in conflict areas...” (NACTO Urban Bikeway Design Guide).



Figure 3 – Green Lane Marking Illustration at S Fifth Ave and E Liberty St – Source: Google Maps and Ann Arbor Staff

Planning and Policy Updates

The NTP referenced blue bike lanes within the facility design chapter, but as it mentions, color treatments were experimental when the NTP was written, and application to the Federal Highway Administration (FHWA) would have been required to set up a test site for blue lanes.

The goal of green pavement for bikes is to create a safe and unique lane that sends a clear message to all road users. Since 2007, the primary color used in this application is green as prescribed in the Manual of Uniform Traffic Control Devices (MUTCD) to avoid confusion with handicapped pavement markings. The implementation of green lanes for bikes continues to increase awareness and knowledge. To create a safe surface, the material application must be non-stick, visible, and durable. Current best practice uses an epoxy resin that is skid resistant and can be mixed with retroreflective beads. Retroreflectivity creates a high level of nighttime visibility for the lane.

City staff has identified potential locations for color application:

- WB Catherine St from Fourth Ave to Main St
- South bound Fifth Ave @ the underground parking structure entrance
- S State St from Ellsworth Rd to Eisenhower Pkwy
- Ann Arbor Saline Rd over I-94

Bike Station – Engineering & Encouragement **Planning and Policy Updates**

2007 NTP: Pages 134-138

The 2007 NTP addressed bike stations largely as bike parking facilities. Describing the importance of secure and plentiful parking options for commuters and U of M students alike, the NTP recommended bike stations to provide both security and capacity.

Since 2000, bike stations in the US have grown to include amenities beyond bike parking security and capacity to facilitate a more complete commuting experience. These stations provide a combination of the following facilities:

- Showers and lockers
- Bike repair
- Bike rental
- Refreshment
- Bike maps and information
- Parts, accessories, and other bike retail

Bike stations encourage more residents to ride because they offer safe bike parking together with the other important amenities listed above. Combining these amenities significantly improves the cycling experience. Chicago, St. Louis, and Washington DC are among the US cities that have installed bike stations in the past decade.

Since plan adoption, the University has significantly increased bike parking capacity on campus. In 2010, a significant area with covered bike parking was added along Rackham Green with the construction of the North Quad Academic and Residential Complex between E Huron and Washington St. The University also built an enclosed bike parking facility since 2007 in the Thompson Street Structure with fifty bike parking spaces, an air compressor and secured card entry. In 2012, the University added two air compressor stations and a fix-it stand near popular bike parking locations. These amenities offer the benefits of a bike station in separate locations, but they signal an important step towards a more complete biking experience.

The NTP Update reinforces the 2007 NTP recommendation by identifying a near-term bike station opportunity and framing a long-term bike station strategy. It is not readily apparent that the City has an immediate opportunity for a standalone bike station; however, there are resources in the community that combine a number of the amenities described above. The YMCA on Washington St and City Hall on Huron St both have locker rooms and showers and may offer a first step towards a bike station concept. In May 2013, the DDA and getDowntown program opened the Bike House. Located inside Maynard parking garage, one of the main downtown parking structures, the Bike House offers guaranteed and reserved bike parking for 37 bikes. The Bike House has 24-hour electronic surveillance, ample lighting, a Dero Fixit stand, and a keycard-only access. The Dero Fixit stands provides Bike House members with access to a bike tire pump and seven hanging tools for bike maintenance repairs. It is recommended that

Planning and Policy Updates

the non-motorized program explore willingness of these community resources to expand access to bike support facilities.

In the long-term, as the City advances planning for the Ann Arbor Station project, it is exploring ways to ensure that the station is truly multi-modal. A bike station at, or near, a train station or transit center would provide secure overnight bike parking, showers and locker rooms, and bike repair services for commuters and residents of Ann Arbor. Providing this service could encourage more people to commute to Ann Arbor via transit or bike. It would also serve as a recognizable center of biking activity, strengthening the culture of non-motorized access and priority in the City.

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Snow Removal – Engineering

Planning and Policy Updates

2007 NTP: Pages 126-127, 189

Ann Arbor, as a northern city, has inclement weather during winter months. Nonetheless, many people rely on alternative transportation year-round. The 2007 NTP recognized the need to have non-motorized facilities cleared of snow with the same priority as the city's roads. The NTP identified areas of special concern for snow clearance (Pg. 127, 189):

- Curb ramps at intersections
- Pedestrian crossing islands
- Bus stops

Although the NTP did not focus on travel by transit, it acknowledged the often multimodal nature of non-motorized transportation. Because every transit rider is a pedestrian at the beginning and end of every trip, it is imperative that bus stops are cleared well for safe access on and off of the bus. However, many Ann Arbor Transportation Authority (AATA) bus stops are not cleared of snow.

Section 4.60 of Chapter 49 of the Ann Arbor City Code places the responsibility for snow removal on property owners. All private property owners must "remove the accumulation from the adjacent public sidewalk" within a specified timeframe. The Code identifies curb ramps and crosswalk leads, but there is no language that specifically mentions bus stops. The Code does distinguish between residential and non-residential property, allowing more time for clearing sidewalks adjacent to residential properties.

The Community Standards Unit of the Ann Arbor Police Department enforces the City Code. Regarding snow clearance, Community Standards requires private property owners to remove all snow from the sidewalk, including paved or concrete segments that serve as bus stops.

Beyond the current provisions of Ann Arbor City Code, other communities extend the area for snow removal to include the gutter area at crosswalks. From the City of Minneapolis:

"If you have a corner property, clear curb cuts at corners and crosswalks to the street gutter. You are not required to clear snow ridges or piles left by the plows *beyond* the gutter..." (ci.minneapolis.mn.us).

Requiring snow clearance to the gutter would ensure that the curb ramp and bus stop area adjacent to the standard sidewalk is completely clear and accessible to everyone.

The 2013 Plan Update recommends a review of Code language to ensure clarity and specificity regarding the issue of snow clearance at curb ramps and bus stops. Staff should seek AATA's input on the specific snow clearance needed at the bus stop surface to maintain accessible stops. Staff should ascertain if there is a need to differentiate between treatment of the gutter area in residential and non-residential areas. This effort will support the steps needed to achieve full accessibility during all times of the year.

Facility Maintenance – Engineering & Encouragement

Planning and Policy Updates

2007 NTP: Pages 126-130, 185-189

Consistent and complete maintenance of non-motorized facilities is important for safe travel. Inadequate maintenance of sidewalks, midblock crossings, paths, bike lanes, signs, signals, and other features is dangerous and inconvenient for pedestrians, especially those who are elderly or have mobility impairments; further, it also discourages non-motorized users from riding or walking.

Each type of non-motorized facility requires a unique maintenance approach and funding source. Since November 2011, sidewalk repair is the responsibility of the City, funded by a special millage. Bike lanes require sweeping and snow clearance. Fixing potholes in a bike lane by overfilling the hole with asphalt as in the roadway is not appropriate; bikes do not flatten the asphalt like cars do. If potholes were filled in this manner, dangerous bumps of asphalt would replace the potholes. Clearing snow from midblock crossings is challenging with existing equipment and requires more effort. As result, some crossings collect snow or other debris over time.

The NTP Update recommends that Systems Planning staff work with Field Services to develop a full understanding of the maintenance needs of the current system and ensure that sufficient resources are in place for operations and capital maintenance activities. Additionally, the NTP Update recommends continued use and expansion of the Online Citizen Request System³ to keep the community engaged, informed and helpful to maintenance activities.

³ <http://www.a2gov.org/government/publicservices/customerservice/Pages/OnlineCustomerServiceRequest.aspx>

Non-motorized System Signage – Engineering & Encouragement

Planning and Policy Updates

2007 NTP: Page 38

The 2007 NTP referred to directional information signs as Directional Signage, noting “The key aspect of a bicycle route is the destination sign that should call out points of interest along the route such as schools, shopping centers or parks” (Pg. 38). Adding distance to the sign expands the utility and usefulness of these proposed signs.



Figure 4 – 3D Sign example modeled after Portland, OR

The Directional Signage called for in the NTP was not installed. Staff made great strides though since 2007 in replacing and adding several hundred new official “Bike Lane” signs to meet the requirements of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

Ann Arbor community members are responding to and are in support of directional signage. Public feedback received through the review process acknowledged the intended use of existing “Bike Lane” and “Share the Road” signs to establish cyclists’ place in the road. Also, residents reacted positively to the idea of adding informational directional signage to provide more information to cyclists and encourage others to use a bicycle to satisfy their travel needs.

Signs displaying the destination, direction, and distance (3D) information to popular locations in a city can serve to both introduce the system to first-time users and establish a common brand for the non-motorized system. By illustrating how the non-motorized system offers alternative routes to popular destinations, these signs offer citizens the opportunity to reach key locations within their ability by walking or bicycling. The NTP Update recommends installing 3D signage for popular destinations throughout the city. The locations for the signs should be determined through a citywide planning process to define the key destinations, preferred bike routes and location for such 3D signage. The NTP Update also recommends considering adding additional information such as walking time if the design of the signs allow for such information.

Online Way-finding – Encouragement

Planning and Policy Updates

2007 NTP: Page 125

Bicycle system expansion since NTP adoption makes the City's 2000 bike map an incomplete resource for cyclists. The NTP recommended an update to the map, which was completed with the updated Bikeway System Map. However, due to the nature of a growing and working non-motorized program, the Bikeway System Map quickly became obsolete as a representation of the bike facilities in Ann Arbor.

Bike maps are an important encouragement tool because they help people to know where they can rely on non-motorized transportation facilities. The NTP recommended increased bike map distribution to reach more residents and maximize the value of the map. Various City facilities, as well as public and private partners, have carried and distributed the maps over the years. As part of the review process, staff inventoried the remaining 2005 maps and found the supply nearly exhausted.

The bike map is the primary resource for new and veteran cyclists looking for a specific bike route or the complete system of bike facilities. To accurately reflect the progress made, the map should be updated. In recent years, the City has embraced an online Geographic Information System (GIS) to serve other mapping needs. This "central spatial data resource serving all citywide applications and customer service needs" (City of Ann Arbor) allows users to access such data as street trees and parcel lines from any computer with an internet connection. The online maps also show the road network – adding bike facilities is a natural fit for this system. Benefits of the online venue include:

- The map may be updated at any time, so it is always an accurate representation.
- The City avoids printing costs; therefore, information is provided for free.
- Users can decide whether they want to access the map on a device or print it out at their convenience.
- The data will be made publically available in Shape File format, for GIS users, as well as in KML and KMZ formats, for Google Maps and Google Earth users, on the City's website.

The non-motorized program should make use of this system to provide a current representation of the biking and walking facilities in the city, which is easily updated as new infrastructure is installed.

Education Programs & Campaigns – Education Planning and Policy Updates

2007 NTP: Page 123

The 2007 NTP categorized the desired outcomes of the non-motorized program into three main areas:

- Policy and planning integration
- Physical network completion
- Education

Although education is a major component of the NTP's overall goals, only a small portion of the plan text discusses specific recommendations related to educational programming. The NTP tied education to enforcement, and recommended that they be administered together in the context of bicycle and pedestrian laws for cyclists, pedestrians, and drivers. However, education and enforcement are distinct from each other.

Education is meant to:

“Increase awareness of the opportunities, for, and benefits of, non-motorized transportation, as well as provide information to all users on safe ways to integrate motorized and non-motorized modes of transportation” (Pg. 7).

The corresponding objectives called for professional education for the staff, education around bicycle and pedestrian laws, and ongoing education to highlight new facilities as they are installed.

The professional staff education process was completed, and continues to be addressed internally as new guidelines are available.

An Ann Arbor Safe Streets and Sidewalks (A2S3) Committee was shaped to guide development of outreach and communication activities. The A2S3 Committee is composed of key stakeholders, including staff from the City, the University of Michigan, AATA, the Downtown Development Authority (DDA), the Washtenaw Area Transportation Study (WATS), and a representative from the Washtenaw Biking and Walking Coalition (WBWC). The Committee has administered an education campaign about several aspects of Non-motorized travel, with the most recent emphasis on revised pedestrian rights in the crosswalk from 2010-2012. Other educational initiatives have responded to recommendations listed in the NTP in order to meet the goal set on Page 7 of the NTP.

Moving forward, an ongoing effort is required to make sure key educational messages are reinforced continuously. To assist in focusing on key messages, evaluation techniques should be developed to gauge the effectiveness of previous and current education campaign strategies, and recommend new outreach ideas. Identifying similar communities' successful efforts and applying them to Ann Arbor's non-motorized program may suggest new campaign tools to use.

Bike Parking – Engineering & Evaluation

Planning and Policy Updates

2007 NTP: Pages 124, 136

One of the most crucial parts of bike travel is safe and secure bike parking. The 2007 NTP addressed bike parking in a number of contexts:

- Site plan checklists for developers
- University bike parking capacity
- City Code requirements for covered or locker parking

Bike parking has to be considered at every location where a bike trip might end. Ann Arbor City Code describes bike parking design and quantity requirements for private development (Chapter 59, Section 5:168.1). It includes three classes of bicycle parking:

- Enclosed bicycle storage – individual bike lockers or enclosed areas for multiple bikes.
- Covered bicycle racks – exterior bike parking with an overhang or self-standing cover.
- Fixed bicycle racks – inverted U-hoop racks and other fixed rack styles.

For those wishing to place bike parking in the City's right of way a License Agreement Application will need to be completed and submitted, along with detailed construction plans for each location proposed. The License Agreement Application can be acquired online through the City's website, www.a2gov.org, under Government/Public Services/Project Management/Private Development/Fee Worksheet Templates. Associated permits, licenses and fees are required for completion of the application process by the City.

The NTP recommended guidelines to further clarify the requirements for new site development, and city staff produced the Bike Parking Guide in 2008. The guide describes design requirements for illumination, the connection between the driveway or sidewalk and the parking area, and the size, spacing, and location of bike parking spots. It also explains the three classes of bike parking that are approved for use in Ann Arbor. The bike parking guide is an effective tool to inform and help developers to provide appropriate bike parking at new developments.

However, Code revision is needed to address the different bike parking needs of development inside and outside of the downtown area. Specifically, city staff is looking to address long-term bicycle storage for multi-family residential and commercial buildings within DDA boundaries. In March of 2013, City Staff compared best practices and bicycle parking ordinances from Portland, OR, Madison, WI, Boulder, CO, and San Francisco, CA; and, surveyed long-term bicycle storage facilities at multi-family residential and commercial buildings within the DDA boundaries. The Zaragon West, Zaragon Place, and Landmark buildings were surveyed. The data was used to create recommendations for future revisions to Ann Arbor's zoning ordinance regarding bicycle parking design for long-term bicycle storage at multi-family residential and commercial buildings. The recommendations should be taken into consideration during future code revisions.

Planning and Policy Updates

Several recent multi-family developments installed bike storage rooms, and the DDA installed a “bike house” in the Maynard parking structure in 2013. The Bike House provides 37 bike parking spaces and only uses the space of two car parking spots. The NTP recommends adding new language to Chapter 59 to respond to the growing number of bike parking options that accomplish the non-motorized program’s goals for bike parking in private development.

Public bike parking evaluation, a related issue, allows staff to direct efforts to the appropriate areas. The DDA began evaluating public bike parking in the downtown in 2010. Evaluations in 2010 and 2011 measured the amount and types of bike parking weekly through the summer months. The walking surveys allowed the DDA to determine where bike parking should be relocated or added, and in 2013 the DDA will use evaluation results to install additional bike parking on priority city blocks. The NTP Update recommends working with the DDA to develop a public bike parking evaluation program for the rest of the city and to collaborate on evaluating future installation priorities.

Abandoned bikes can clog bike racks, preventing active users from using existing bike parking. Bike parking evaluation allows the DDA and city staff to identify abandoned bikes and prioritize the highest need for bike removal. Removing abandoned bikes involves a complex process that includes tagging, removal, transport, and storage. Further consideration is necessary to enhance the current abandoned bike removal program. The NTP Update recommends working with the DDA, Ann Arbor Police, and Field Services to create an abandoned bike removal protocol to more actively manage bike parking availability and remove abandoned bikes from the public right-of-way.

New Sidewalks – Funding

Planning and Policy Updates

2007 Plan: Pages 187-189

The 2007 Plan proposed approximately 25 miles of new sidewalk be provided to fill sidewalk gaps along major streets. The NTP focused primarily on sidewalk deficiencies along major street facilities and those providing access to schools. The plan noted the increased safety and convenience needs for pedestrians walking along higher speed, higher volume roadways. The Plan did not, therefore, define all areas with missing sidewalk segments as “Sidewalk Gaps.” It is recognized that there are large areas in the city where sidewalks do not exist; these areas are found mostly in neighborhoods along local streets. While installation of sidewalks in such areas could also fill an important non-motorized function, these missing sidewalk segments are not listed in the NTP as sidewalk gaps to maintain primary focus on major street sidewalk deficiencies.

The 2007 Plan’s recommendation was to install the high priority sidewalks as a Near-term Opportunity. City policy requires that street projects include and provide coincidental non-motorized improvements. The Plan cited the West Stadium Blvd reconstruction project that implemented bike lanes, crossing islands, and sidewalks in addition to the bridge and street reconstruction. Continued application of this policy has resulted in several new sidewalk segments being provided since 2007. Examples include Dexter Avenue from Huron to Maple, Packard Road along the St. Aubin right-of-way, and along portions of S. State Street and E. Stadium Blvd as part of the Ann Arbor Bridges project. Beyond the investments for new sidewalks coincidental to street projects, no sidewalk funding mechanism, other than the method described next, has yet been identified.

An additional funding source for constructing new sidewalk is via special assessment. While a sidewalk repair component of the City’s Street Millage was approved by voters in 2011, installation of new sidewalks was explicitly excluded as an allowable use of that revenue. Per the Fact Sheet for Sidewalk Repair Millage, City of Ann Arbor: “Installing a new sidewalk for the first time would be considered an initial improvement, which would mean that the adjacent property owners would be charged for the work. A special assessment is typically applied to the properties.” However, adjacent property owners (particularly single family residential owners), faced with the sometimes significant cost of sidewalk installation, often oppose the special assessment for such new sidewalk construction. This limits, to some degree, the utility of this approach to filling sidewalk gaps in the City.

Since the 2007 Plan did not identify funding sources for sidewalk construction beyond that coincidental to street projects or via Special Assessments, many gaps identified in the 2007 Plan remain, and a few additional gaps have been identified.

To comprehensively address sidewalk gaps in the city, an adequate policy base and funding program are needed. The Plan Update, while continuing to maintain the 2007 Plan sidewalk gap listing, is now placing increased emphasis on seeking to identify funding to fill those gaps. Partly in response to this

Planning and Policy Updates

identified ongoing need, the FY2014-2015 City Budget allocated \$75,000 of general funds to study the sidewalk gap issue in more detail. This analysis, anticipated to take approximately 18 months, will:

1. Complete a GIS inventory of sidewalks/gaps
2. Generate planning level estimate of costs to fill all gaps
3. Research sidewalk gap elimination strategies employed by other communities
4. Form Stakeholder/Advisory Committee
5. Characterize the nature of gaps (small discrete gaps, neighborhood level gaps, those per the NTP, etc.)
6. Develop tentative gap elimination prioritization criteria and funding strategies
7. Undertake public engagement regarding tentative prioritization and funding strategies
8. Prioritize sidewalks based on research and public engagement
9. Develop detailed funding strategies
10. Develop a Draft Plan and conduct additional public engagement
11. Revise and present Final Plan to City Council
12. Begin implementation of the plan

This effort will allow staff to develop an implementation program that not only responds to the needs outlined in the Plan, but also to address sidewalk gaps at a level beyond the scope of the NTP.

Federal policy was updated and clarified in March 2010, through a new US Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations. It states that transportation projects should incorporate safe and convenient walking and bicycling facilities, unless:

“The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project” (FHWA).

During the upcoming sidewalk gap elimination planning, project specific location issues need to be taken in to account. There are, for example, locations along roadways where the provision of a sidewalk segment is not practical, feasible, or the investment is not warranted by the limited use such a facility might serve. A more detailed evaluation is needed to so that identified efforts to eliminate sidewalk gap areas are consistent with this local and federal policy.

The Plan Review acknowledges the need for filling sidewalk gaps and defining appropriate funding sources for addressing this important program area. It recognizes the increased attention to the need to fill sidewalk gaps evidenced by City Council’s recent budget action. Once the sidewalk planning effort is completed, the task will turn to securing the resources necessary to address this non-motorized system need and installing improvements. Although several years have passed following adoption of the 2007 Plan, through this plan review effort the City has framed addressing sidewalk gaps as an important issue. Over the next few years the goal is to develop a better definition of the problem, secure additional

Planning and Policy Updates

avenues for funding and create a more walkable community by making appropriate investments pursuant to the NTP and additional information that emerges from the sidewalk planning process.

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New Midblock Crosswalks – Funding

Planning and Policy Updates

2007 NTP: Pages 150 & 189

Midblock crossings are a crosswalk where motorized vehicles are not controlled by a traffic signal or stop sign. They facilitate more frequent crossings in places with heavy pedestrian traffic or near major pedestrian destinations like schools or high density housing. Midblock crossings may be implemented where people often cross at unmarked locations along the road.

In reviewing Figure 4.2B *Existing Crosswalks*, page 150 of the NTP, the figure should list there being 14 minor mid-block crossings and not eight.

The NTP identified 135 crossings identified as near-term opportunities, but without dedicated funding for implementation.

Since 2007, the City has installed 40 crossings. Some midblock crossings are enhanced with pedestrian islands in the median or pedestrian-activated signals. In 2010, a High-intensity Activated crossWalk (HAWK) signal was installed on W Huron St at 3rd and Chapin streets. A HAWK is an overhead signal that flashes yellow and red to direct drivers to stop. Since 2012, the City has installed 11 Rectangular Rapid Flashing Beacons (RRFB) on Plymouth Rd, Seventh St, E Stadium Blvd, Packard Rd, and Green Rd. The beacons flash yellow from a rectangular light bar attached to a pedestrian crossing sign, directing drivers to stop for pedestrians. High rates of use reveal the popularity of the beacons: in October 2012, the beacon at Plymouth and Bishop was activated on average 315 calls per day: 9,764 times in total. Initial reports indicate a much safer environment for pedestrian crossing than the marked crosswalks alone. Yielding counts conducted by City Staff showed a marked increase in yielding behavior at intersections which received RRFB's. Yielding counts are conducted immediately prior to and following installation of the RRFB's. The yielding counts measure the percent of cars within close proximity to the RRFB that yield to pedestrians trying to cross at the crosswalk.

Despite these significant efforts, 70% of the recommended crossings remain incomplete. A funding source needs to be identified for installing, improving, and maintaining midblock crossings, a highly prioritized facility in 2007.

City staff has identified criteria for appropriate placement of additional flashing beacons. Roads with the following characteristics should be further evaluated for beacon installation:

- Three or more lanes
- A speed limit at or above 35 mph
- Average daily traffic at or above 12,000 vehicles

These criteria allow staff to identify potential RRFB locations calculate the total cost of remaining projects. In all, 24 locations fit for potential beacons, as shown in figure 4. At an average cost of \$12,500,

Planning and Policy Updates

the total cost to implement every recommended location is approximately \$300,000. The NTP update recommends continued efforts to install the remaining beacons and find additional funding sources.

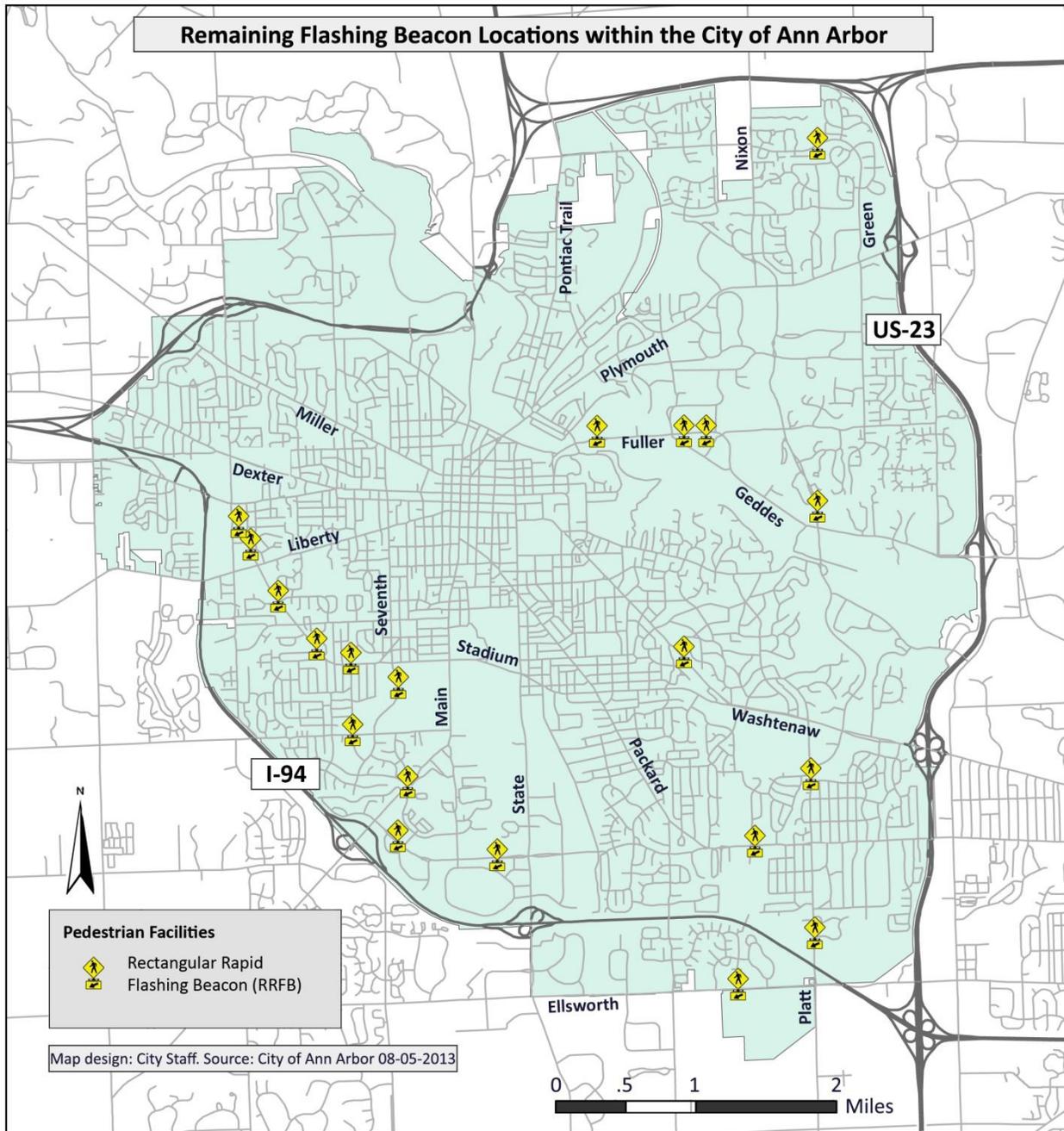


Figure 5 – Remaining flashing beacon installation sites

MAP-21 (Federal) and Act-51 (State) – Funding

Planning and Policy Updates

2007 Plan: Page 187

MAP-21

Moving Ahead for Progress in the Twenty-first Century (MAP-21) was signed in to law July 6, 2012. It provides federal surface transportation funding for FFY 2013 and FFY 2014. The law builds on and refines many of the highway, transit, bike, and pedestrian programs and policies established in the Intermodal Surface Transportation Efficiency Act of 1991 and its successor bills up to and including the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Non-motorized facility improvements remain eligible under most of the major funding programs under MAP-21 as described below.

- National Highway Performance Program (NHPP)

The NHPP provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS.

- Surface Transportation Program (STP)

The Surface Transportation Program (STP) provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.

- Congestion Mitigation and Air Quality Improvement Program

The CMAQ program is continued in MAP-21 to provide a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas). Non-motorized Projects are eligible to receive CMAQ funds. Bicycle and pedestrian projects have been and continue to be eligible for CMAQ funding.

- Highway Safety Improvement Program (HSIP)

MAP-21 retains the Highway Safety Improvement Program (HSIP) as one of the core highway programs intended to reduce injuries and fatalities on all public roads, pathways or trails. For the first time a “road user” is defined as both a motorized and non-motorized user (i.e., someone walking or biking). These two shifts lay the framework for more effective spending of safety dollars on projects that make roads safer for all users

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- Railway-Highway Crossings (set-aside from HSIP)

This program funds safety improvements to reduce the number of fatalities, injuries, and crashes at public grade crossings.

- Transportation Alternatives Program

The TAP provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

Further, the USDOT has made a policy statement regarding the incorporation of safe walking and pedestrian facilities into transportation projects.

“The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.”

Act-51

Michigan State funding is provided through the Michigan Transportation Fund (MTF), a program that has distributed formula-based transportation funds to Michigan cities from vehicle revenues since 1963. Act 51 requires that municipalities use at least 1% of MTF dollars for non-motorized facilities.”⁴

Locally, Ann Arbor officials mandated a larger investment in non-motorized infrastructure than the Act 51 requirement. In 2003, City Council committed to invest five percent of Ann Arbor’s MTF dollars in the non-motorized system through resolution R-176-5-03. The resolution allocates the funds for the Alternative Transportation (ALT) Fund. After NTP adoption, these funds were planned for bike lanes and midblock crossings. In 2004, City Council adopted resolution R-217-5-04, which required that road projects include bike lanes when they were incidental to the overall project. This resulted in significant non-motorized system expansion through road resurfacing or reconstruction projects.

⁴ *State of Michigan*. http://www.michigan.gov/documents/act51simple_28749_7.pdf. Accessed 8-12-2012.

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The non-motorized program has capitalized on these and other external funding opportunities since 2007 to promote network expansion. In July 2012, Congress passed a new transportation bill, “Moving Ahead for Progress in the 21st Century” (MAP-21). MAP-21 consolidates many of the programs in SAFETEA-LU that applied to non-motorized planning and investment into one program, called Transportation Alternatives Program (TAP). Aggregate spending on these programs was reduced by approximately 25% from the previous federal transportation bill’s (SAFETEA-LU) levels. As MAP-21 goes into effect from 2012 into 2013, Safe Routes to School, Transportation Enhancements, Recreational Trails, and other consolidated programs will compete for funding from TAP. In addition, several communities within the state will apply for TAP funding, creating a more competitive context than SAFETEA-LU presented.

Moving forward, it will be important for City staff to work closely with regional and state partners to develop sound proposals and maximize potential funding for TAP projects in Ann Arbor.

Geographic Area Recommendations

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Geographic Area Recommendations

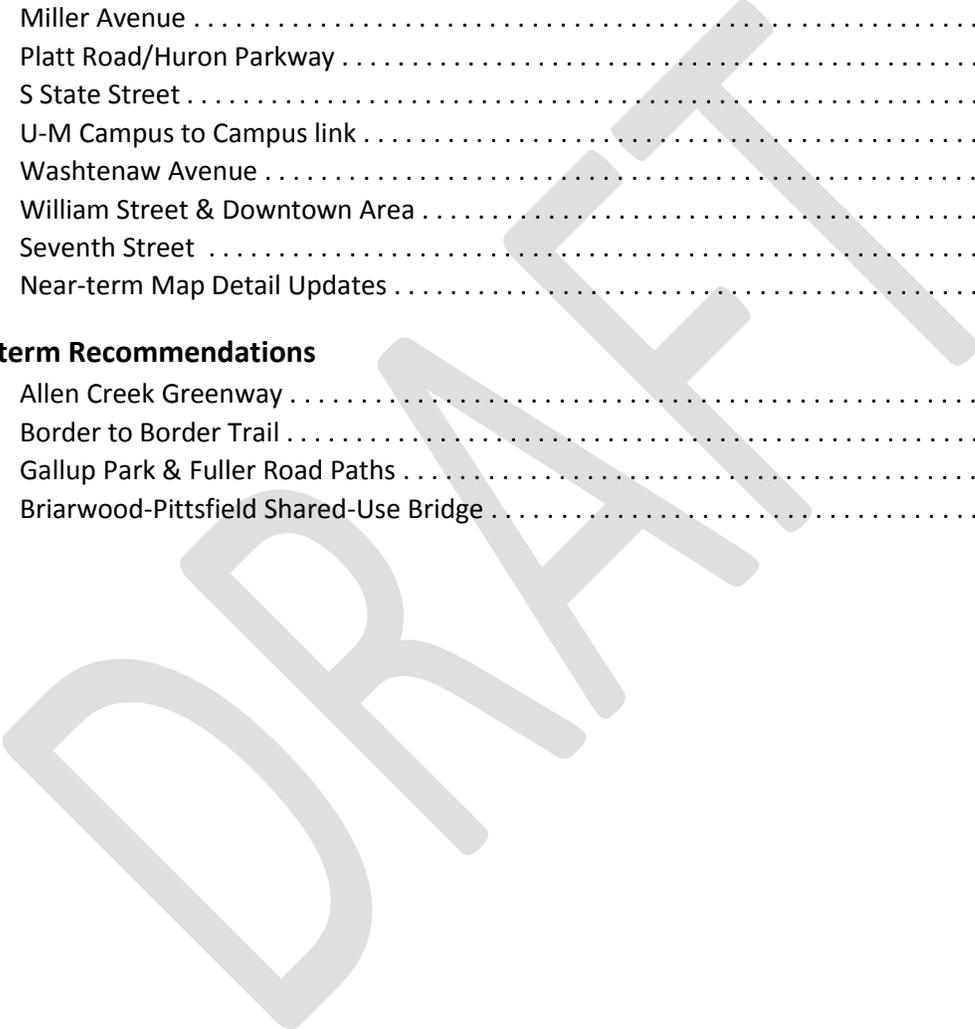
Geographic Area Recommendations

Near-term Recommendations

- Ann Arbor-Saline Road 48
- Jackson Avenue 49
- Jackson Avenue/Huron Street/Dexter Avenue 50
- Depot Street 51
- N Main Street 52
- S Main Street 53
- Miller Avenue 54
- Platt Road/Huron Parkway 55
- S State Street 56
- U-M Campus to Campus link 57
- Washtenaw Avenue 59
- William Street & Downtown Area 60
- Seventh Street 61
- Near-term Map Detail Updates 62

Long-term Recommendations

- Allen Creek Greenway 76
- Border to Border Trail 77
- Gallup Park & Fuller Road Paths 78
- Briarwood-Pittsfield Shared-Use Bridge 79



Geographic Area Recommendations

2007 NTP: Chapter 5, Pages 160 -184

Geographic Area Recommendations

Staff has identified several areas in the city where 2007 NTP recommendations have not yet been able to be implemented. These geographic areas often present opportunities to address gaps and build additional system connections on important corridors, and are therefore priorities for the non-motorized system.

These opportunities cover a range of implementation time scales and improvement costs; as such, the opportunities are categorized as either near-term or long-term recommendations. As discussed on pages 12 and 13, near and long term recommendations differentiate themselves based on the level of physical change required and cost. Near-term recommendations do not require road reconstruction, while long-term recommendations often require significant physical adjustments to the cross section of a roadway. Near-term recommendations are cost-effective and easily implementable, while long-term recommendations represent the ideal non-motorized environment for the corridor. Taken together, near and long term recommendations create an overall vision for a phased implementation of Ann Arbor's non-motorized transportation vision.

In reviewing the NTP's near and long term recommendations specific geographic areas were highlighted as needing revision. These updated recommendations are sensitive to how the unique physical and cultural environments of the areas have changed since 2007. Staff created the updated recommendations in part through a collaborative workshop. The map on the following page highlights the selected areas.

Geographic Area Recommendations

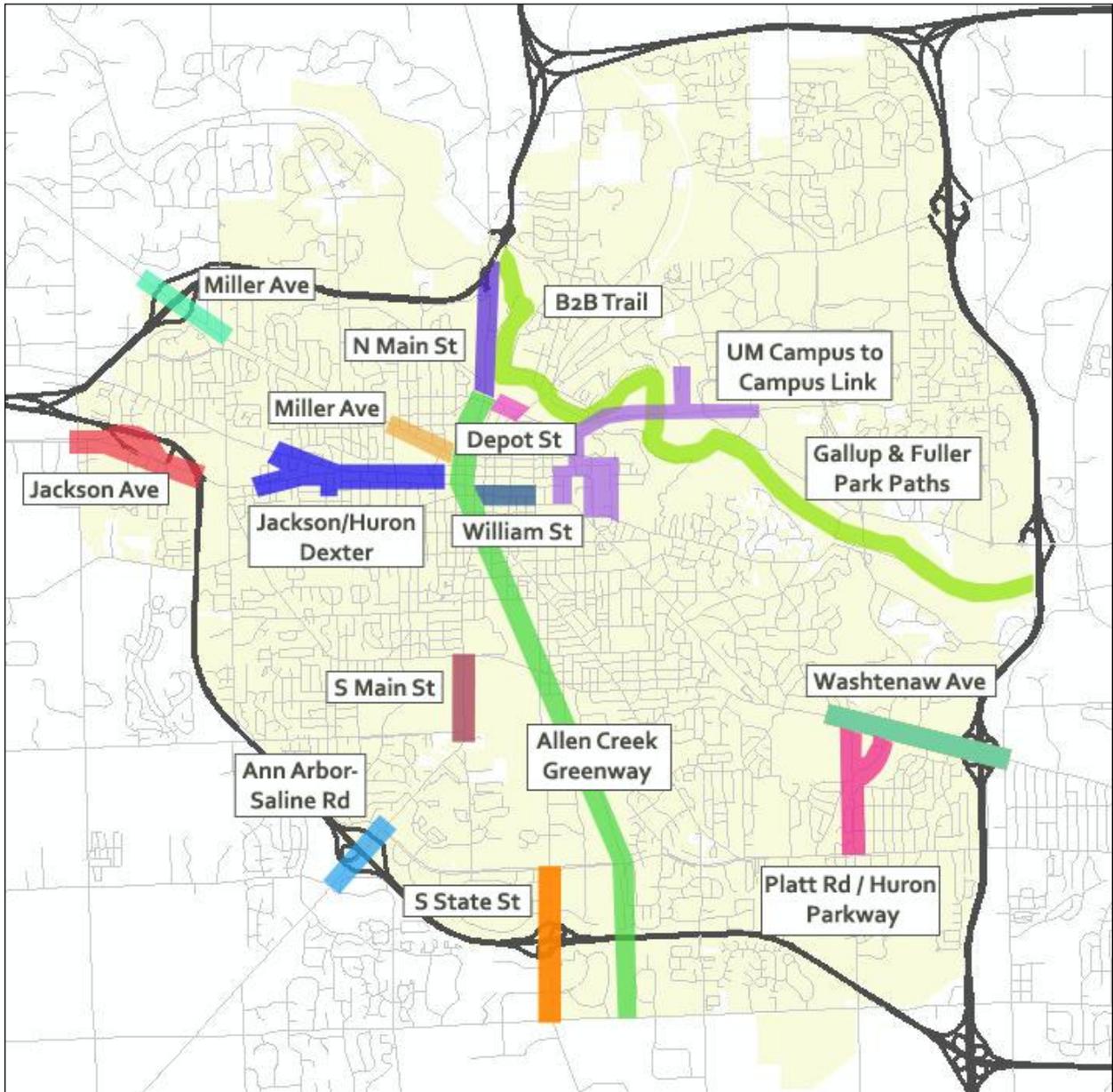


Figure 6 – Geographic Area Recommendations

Geographic Area Recommendations

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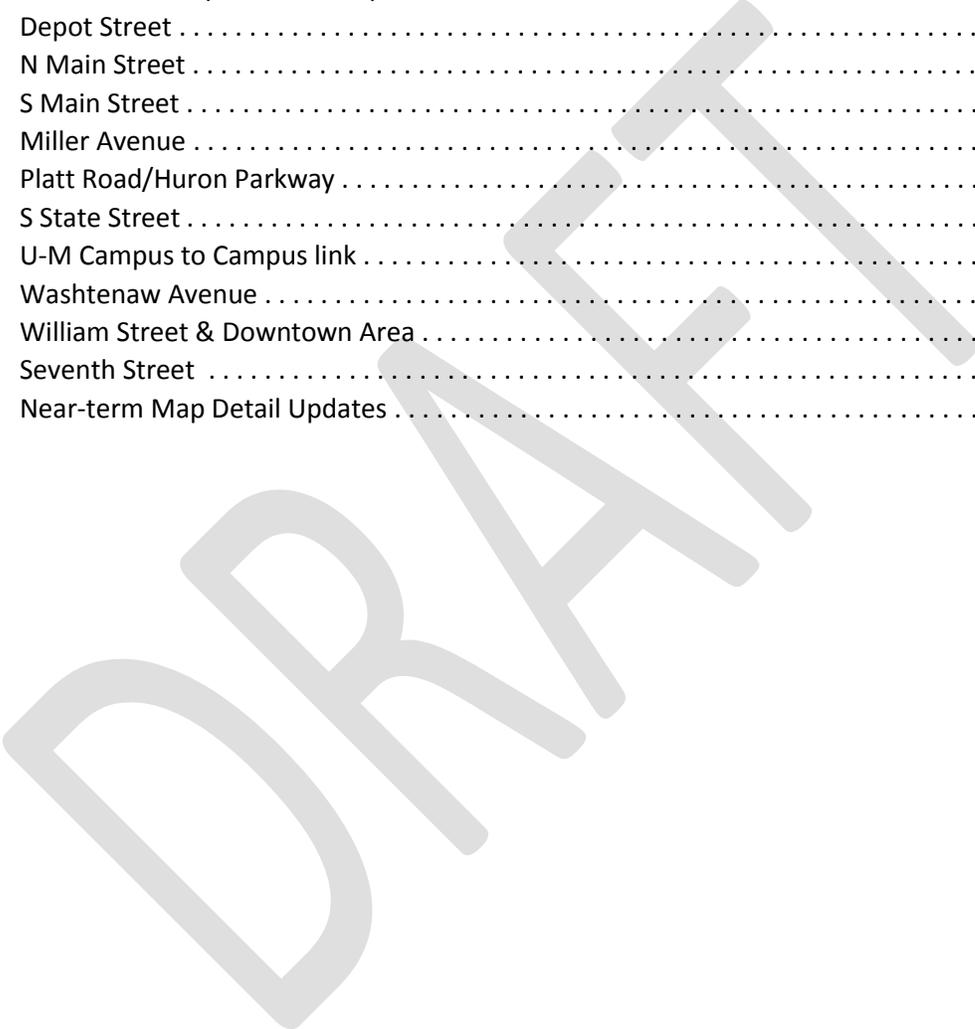
Near-term Recommendations

Geographic Area Recommendations

The following areas, originally presented in the NTP, were analyzed for updated recommendations due new engineering strategies and the areas’ evolving physical and cultural environments.

Near-term Site Recommendations

Ann Arbor-Saline Road	48
Jackson Avenue	49
Jackson Avenue/Huron Street/Dexter Avenue	50
Depot Street	51
N Main Street	52
S Main Street	53
Miller Avenue	54
Platt Road/Huron Parkway	55
S State Street	56
U-M Campus to Campus link	57
Washtenaw Avenue	59
William Street & Downtown Area	60
Seventh Street	61
Near-term Map Detail Updates	62



Ann Arbor-Saline Road

Geographic Area Recommendations

Eisenhower Pkwy to Waters Rd | 0.5 Miles

2007 NTP: Near-term Map

The 2007 NTP recommended narrowing the lanes on the Ann Arbor-Saline Rd Bridge over I-94 to collect enough width for bike lanes and sidewalks over the interstate. The current configuration does not provide a safe non-motorized crossing on the bridge, and the nearest alternative crossings are Scio Church Rd to the northwest or S State St to the east. Both crossings are multiple miles out of the way via the closest road connections, and S State St does not offer a safer non-motorized crossing than Ann Arbor-Saline Rd.

Completing this recommendation requires modifying the road geometry, including interstate ramps. The structure of the bridge may not allow for narrowing lanes and moving traffic towards the center of the bridge. The overall complexity and challenge of the project led staff to seek a new solution in the near-term.

A resurfacing project is scheduled for Ann Arbor-Saline Rd at this location in the near-term. The project includes 5' wide bike lanes in both directions, and sidewalk improvements on both sides of the bridge. The sidewalk improvement on the east side of the bridge will connect the existing shared-use path section north of Lohr Rd to the existing shared-use section south of Eisenhower. The sidewalk improvements on the west side of the bridge will connect the Park and Ride lot to the non-motorized facilities at the Eisenhower Pky and Ann Arbor-Saline Rd intersection. The Michigan Department of Transportation (MDOT) is reviewing the feasibility of the project. The NTP Update recommends that staff work closely with the resurfacing project manager to maintain the programmed connections and consider opportunities for including long-term recommendations in the project's scope.

The long-term recommendation from the 2007 NTP remains installing bike lanes and sidewalks in both directions over the bridge. This recommendation will require additional consideration and engineering to address the limitations on the bridge in the long-term.

Jackson Avenue

Geographic Area Recommendations

Wagner Rd to Maple Rd | 1.1 miles

2007 NTP: Existing Bike Lanes

This area focuses on the section of Jackson Ave near the I-94 exit ramp and Weber's Restaurant & Hotel where westbound traffic separates from eastbound traffic around the hotel. The 2007 NTP showed Jackson Ave with bike lanes in each direction at this location. Westbound, the bike lane is in very poor condition approaching the bridge over the exit ramp. Further, the shoulder ends where the bridge begins, terminating the bike lane. Eastbound, the paved shoulder that accommodates the bike lane ends at Parklake Ave.

Repairing the shoulder on westbound Jackson Ave can reestablish a functional bike lane. A "Share the Road" sign should be placed prior to the bridge, with the bike lane picking up again after the bridge. Improvements on Jackson Ave in this area may require the cooperation of MDOT.

An eight-foot-wide path begins before Parklake Ave, and ends after 400' at Hilltop Dr. Hilltop Dr runs parallel to Jackson Ave, and is the preferred cycling facility at this location. The NTP Update recommends signage where the shared-use path begins at Parklake Ave to inform cyclists of the changing facilities and to encourage them to use Hilltop Dr.

Jackson Avenue/Huron Street/ Dexter Avenue Corridors

Geographic Area Recommendations

Maple Rd to 1st St | 1.5 miles

2007 NTP: Near-term Map

The NTP recommended a 4-to-3 lane road diet on Jackson Av from Maple Rd to the Jackson Ave/Huron St/Dexter Ave intersection with bike lanes in each direction. MDOT is planning the road diet, matching the recommendation, and will install bike lanes as part of the project. However, east of the intersection, the road configuration and daily traffic on W Huron St prevent a similar road diet and the corresponding bike lanes.

The 2007 NTP recognized the challenge of installing bike lanes on W Huron St, and recommended that Charlton St, Revena Blvd, and Washington St serve as signed bike routes for east-west bike traffic. However, the recommended routes do not provide a connection to westbound Jackson Ave from westbound Washington St. In addition, the intersection pictured in Figure 4 is particularly challenging for cyclists or pedestrians, and additional consideration is needed to determine what implementation can facilitate non-motorized travel while remaining feasible from a traffic perspective.



Figure 7 – The Jackson Ave/Huron St/Dexter Ave intersection is not conducive to non-motorized travel

The NTP Update recommends a 0.7 center lane mile Bike Boulevard for Washington St from Revena Blvd to Fletcher St. The characteristics of Washington St make it a good candidate for a Bike Boulevard, and cyclists and the neighborhood alike can reap the benefits of implementation as described on page 10. At the west end of Washington St, signage can direct westbound cyclists to use Revena Blvd, Abbott Avenue, and Virginia Ave to reach Jackson Ave. Signage can also direct eastbound cyclists on Jackson Ave to use the same route in the opposite direction to reach Washington St. Eastbound cyclists on Dexter Ave will be encouraged to use Revena Blvd to reach Washington St.

Depot Street

Geographic Area Recommendations

N Main St to Broadway Bridge | 0.25 miles

2007 NTP: Near-term Map

Depot Street connects N Main Street to Fuller Street at the north edge of downtown. The 2007 NTP recommended bike lanes on both sides of Depot St, but the current road and configuration and traffic pattern make this recommendation non-implementable.

The revised near-term Plan recommendation is for a bike lane on the south side of Depot St with a shared road defined in the north side of the roadway. This will match the recommendation for Fuller St, the extension of Depot St to the east side of the Broadway Bridge. Therefore, a one-way bike lane will accommodate cyclists traveling uphill. Westbound cyclists will use a signed and marked shared-use lane.

An additional recommendation for this area is to designate shared-use lanes with signage and pavement markings on Summit Street. Summit St runs parallel to Depot St to the south, from N Main St to 4th Avenue, and Fifth Avenue to Beakes Street. The low traffic, low speed conditions on Summit St present an attractive shared-use roadway option in each direction. While the road is interrupted at Wheeler Park, a shared-use path runs the length of the park from each end of Summit St. Signing and marking Summit St from N Main St to 4th Ave and Fifth Ave to Beakes St will create a connected bike route from N Main St to Beakes St. In addition, crossing N Main St is facilitated at Summit St, not at Depot St, providing a natural extension to the proposed signed bike route to the west of N Main St on Summit St.

The Plan Update recommends changing the near-term recommendation on Fifth Ave from Beakes St to Depot St from a bike lane on one side to a shared-use arrow. Low traffic volumes and a narrow cross section on Fifth Ave between Beakes St and Depot St direct the recommendation for shared-use arrows instead of bike lanes.

N Main Street

Geographic Area Recommendations

Depot St to M-14 | 0.8 miles

2007 NTP: Near-term Map

N Main Street has a very important role as part of an extensive regional bike network. Due to the M-14 freeway and the Huron River, N Main St offers important bike access in North Ann Arbor. It links the Border to Border (B2B) trail from the Argo Dam to Huron River Dr and providing an interim B2B connection in this part of Ann Arbor.

The 2007 NTP called for a road diet along N Main St from 4 to 3 lanes, but traffic volumes are too high for a successful conventional 4 lane to 3 lane reduction. Given N Main St's important role to the bicycling network, a unique solution may be needed.

One recommendation is to evaluate and install a "managed lane" cross section. The cross section could include a reversible center lane, one travel lane in each direction, and bike lanes. The reversible lane would accommodate the existing traffic flows during morning and evening commutes. As an MDOT trunk line, N Main St requires the cooperation of MDOT for any project.

Staff also recommended using the sidewalk on the east side of N Main St to provide near-term non-motorized access to Huron River Dr and Bluffs Nature Area. The sidewalk could be extended northerly and connected to Huron River Dr, south of M-14, with midblock crossings. A sidewalk installed from Huron River Dr to Huronview Blvd on the west side of N Main St would provide access to Bluffs Nature Area from Huronview Blvd.

The NTP Update also recommends monitoring planning projects. In particular, a combined non-motorized path and stormwater management tunnel at 4th Ave and Depot St may be able to provide a railroad crossing, if the project is feasible. As new concepts emerge, the next NTP Update should incorporate new opportunities as appropriate. In addition, the NTP Update recommends coordination with the findings and recommendations from the North Main - Huron River Corridor Vision Task Force.

The long-term recommendation for this corridor remains a reconstruction to a five-lane boulevard with bike lanes on both sides. It is recognized that there are significant right-of-way needs tied to this opportunity.

S Main Street

Geographic Area Recommendations

Stadium Blvd to Ann Arbor-Saline Rd | 0.7 miles

2007 NTP: Near-term Map

The NTP recommended narrowed travel lanes and installing a bike lane on the east side of S Main St between Stadium Blvd and Ann Arbor-Saline Rd. This would complement the existing shared-use path on the west side of the road. However, this recommendation does not provide for pedestrian access on the east side of the road. Creating a sidewalk in this location requires right-of-way. The adjacent golf course has objected to the idea, and as a result, staff has listed the bike facility as a near-term opportunity and moved the sidewalk into the long-term plan.

The NTP Update recommends a northbound bike lane on the east side of S Main St, from Scio Church Rd to Stadium Blvd. South of Scio Church Rd, a shared-use path exists on the west side of S Main St before it becomes Ann Arbor-Saline Rd, but nothing exists on the east side of the road. The recommended shared-use path has proven non-implementable, so it has been removed as a near-term recommendation. This area requires additional study.

Miller Avenue

Geographic Area Recommendations

M-14 to east of Maple Rd | 0.6 miles

2007 NTP: Near-term Map

Miller Ave had bike lanes from Maple Rd to 7th St when the 2008 Plan was written. The NTP recommended bike lanes and sidewalks west of Maple Rd to connect Ann Arbor to Scio Township, on the west side of M-14, but this recommendation was not implementable due to road configuration.

Staff has determined that the current road configuration can accommodate bike lanes if the road remains a rural section. With paved shoulders and no curb, 4' bike lanes and 10' travel lanes are appropriate on a rural street section. The NTP Update recommends coordination with the Township and Road Commission prior to paving the shoulders to provide this near-term solution.

Non-motorized travel on the bridge over M-14 requires a wider span or an adjacent bridge. Staff should work with MDOT to secure that opportunity when it arises in the long-term. The NTP Update maintains the near-term recommendation on the bridge for shared-use lanes with markings and signage.

In the long-term, development in the area within Ann Arbor will lead to curbs along this street section, and 5' bike lanes would be required. Therefore, the long-term recommendation is bike lane implementation with road reconstruction.

Miller Avenue

N 7th St to Spring St | 0.4 miles

2007 NTP: Near-term Map

Bike lanes and shared-use arrows have been implemented on the entire 2.5 mile Miller Ave/Catherine St corridor from Maple Rd to Glen Ave, except for a stretch between 7th St and Spring St. Previously, the 30' road width prevented installing bike lanes, because in 2007, 10' was seen as too narrow for a travel lane.

However, staff has experienced success with lanes under 11' wide since Plan adoption. Therefore, this recommendation is now considered implementable. The NTP Update recommends marking Miller Ave for bike lanes.

Platt Road/Huron Parkway

Geographic Area Recommendations

Washtenaw Ave to Packard Rd | 0.9 miles

2007 NTP: Near-term Map

This segment of Platt Rd & Huron Pkwy plays an important role in connecting Ann Arbor destinations. South of the segment, Platt Rd has bike lanes to Ellsworth Rd, which connect to a greenway shared-use path in Pittsfield Twp. North of Washtenaw Ave, shared-use paths on Huron Pkwy provide non-motorized access to Gallup Park and the B2B Trail along the Huron River and to Plymouth Rd. The 2007 NTP recommended a road diet along this stretch to accommodate bike lanes, but at that time, the traffic volumes were seen as too high to perform the road diet.

Staff noted that the NTP recommendation may be feasible in 2013 due to changing conditions and positive experience with road diets. The NTP Update recommendation is to monitor the traffic on Platt Rd and Huron Pkwy and evaluate the opportunity for a road diet. For Platt Rd north of Canterbury Rd, the NTP Update maintains the 2007 recommendation for bike lanes and sidewalks.

If the road diet is not feasible along this stretch, the alternative recommendation is to evaluate the potential to transform Elmwood Ave to a 0.4 center lane mile long Bike Boulevard to provide access from the Platt Rd and Packard Rd intersection to the shared-use path on the southeast side of Huron Pkwy. 3D signs should be used at both ends of Elmwood Ave to inform cyclists and encourage them to use the bike boulevard. This recommendation includes upgrading the 8' wide bridge connector in Scheffler Park to 10' shared-use path width before this alternative is considered in accordance with contemporary design standards complete.

S State St

Geographic Area Recommendations

Eisenhower Parkway to Ellsworth Rd | 1.0 miles

2007 NTP: Near-term Map

S State St is an important non-motorized corridor and connection between south Ann Arbor and University of Michigan's Central Campus. Recent reconstruction on the Stadium Bridges at S State St and E Stadium Blvd has finished, reopening S State St to non-motorized use. The corridor also provides an important link over I-94 to Pittsfield Township.

The 2007 NTP recommended extending the existing bike lanes south and onto the bridge over I-94 while narrowing vehicle lanes. However, this complicated area has challenges with road geometry issues and entrance and exit ramps and requires additional analysis to plan the best facilities.

In the near-term, staff has identified quick efforts that can enable bike access over I-94. Paved shoulders on S State St are 8' – 12' wide through much of the segment and can be designated as buffered bike lanes. At specific points along the corridor, adjusting curb sections may allow the bike lanes to continue unobstructed. The NTP Update recommends considering the use of green pavement markings on bike lanes and placement of "Right Turn Yields to Bikes" signs at conflict points along S State St.

Sidewalks and 10' shared-use path links are not considered near-term opportunities in this area. Given the challenges of the segment and the analysis required, connecting the existing sidewalks and shared-use paths will be a key part of the upcoming S State St Transportation Corridor study that considers the corridor from Stimson St to Ellsworth Rd. Another opportunity may be using the median for a non-motorized bridge crossing with links to sidewalks and shared-use paths. The long-term recommendation for the NTP Update is to continue analyzing options along S State St and to monitor concurrent planning processes like the South State Street Corridor Plan for new options.

U-M Campus to Campus link

Geographic Area Recommendations

Central Campus to North Campus | 1.8 Miles

2007 NTP: Near-term Map

The University of Michigan's Central and North Campuses are approximately 1.8 miles apart via Fuller Rd. A trip under 2 miles and the presence of the Fuller Rd shared-used paths make the campus to campus connection is ideal for biking (Pg. 158). From Non-motorized Program counts, an October 2006 sampling showed over 700 bicycles passing through the Fuller Rd-Maiden Lane intersection daily. Two additional counts were conducted at Glen Ave and Catherine St in June 2008 and July 2013, when most students are out of class. The 2008 count showed over 350 bikes daily through the intersection, and the 2013 count showed 324 bikes daily.

On Central Campus, depending on the ultimate destination, completing the trip requires using roads that are not marked for bikes or sidewalks. Fuller Rd's shared-use paths existed when the NTP was written in 2007, but the NTP did recommend bike lanes and shared-use lanes on several roads around Central Campus. Several of these recommendations have been completed, but a direct path into Central Campus from the Glen Ave-Catherine St intersection does not exist. To provide a safe and convenient route, staff developed new recommendations to support the near-term recommendation identified in the 2007 NTP.

The Plan Update recommends the addition of shared-use arrows on Fletcher St from North University Ave to Huron St. Fletcher St's direct connection from the bike lanes on North University Ave to the wide sidewalks on the south side of Huron St assists in creating a comfortable bicycling connection between Central Campus and the Medical and North Campuses. Bike lanes are not recommended for near-term consideration on Fletcher St due to the existing on-road parking and bus stops on either sides of the street.

In connecting to the existing wide sidewalk on the south side of Huron St from Fletcher St to Glen Ave, wider sidewalks are recommended along Glen Ave from Huron St to Catherine St. Sidewalk riding etiquette signage is recommended along Huron St and Glen Ave as well. The sidewalk riding etiquette signage will assist two-fold in creating a comfortable connection between the campuses as it will 1) help to direct bicyclists to use the sidewalk sections between on-road facilities between the campuses and 2) promote respect between bicyclists and pedestrians sharing the sidewalk.

Bike lanes on Zina Pitcher Pl are recommended from Huron St to Catherine St. The recommended bike lanes on Zina Pitcher Pl would connect to the existing Palmer Field Path, the shared-use path on the east side of Washtenaw Ave. The Palmer Field Path would connect the Zina Pitcher Pl bike lanes to the non-motorized bridge over Washtenaw Ave, adjacent to the Central Campus Recreation Building, and bike lanes on Geddes Ave.

The route between Geddes Ave, non-motorized bridge, Palmer Field Path and Zina Pitcher Pl would serve as the campus connector for bicyclists coming from the east, while the Fletcher St, Huron St and

Geographic Area Recommendations

Glen Ave route would serve bicyclists coming from west. Either route would connect bicyclists to the Glen Ave/ Fuller Rd existing shared-use paths. Once on the shared-use paths cyclists can travel directly to North Campus.

In considering how to improve the biking experience along Fuller Rd an intermediate term, and possible near term, recommendation is to provide a link-connecting path along Fuller Rd and MDOT railroad that would go under E Medical Center Dr. This path addition would be a major improvement as it would eliminate north to central campus cyclists and pedestrians from the Fuller Rd and E Medical Center Dr intersection.

Once on North Campus, bicyclists are able to use existing shared-use arrow sections to travel around the campus. In 2010 the University, who owns many of the roads on North Campus, added shared-use markings and signs to Bonisteel Blvd, Murfin St, and Hubbard St, clarifying the rights of and prioritizing bicyclists on multiple routes. There are also several existing off-road shared-use paths that serve the North Campus area.

In traveling southbound from North Campus to the Medical and Central Campuses the same routes in reverse are recommended.

The long-term recommendations set forth in the NTP for bike lanes between Huron St and Bonisteel Blvd and a connecting shared-use path through the Nichols Arboretum remain.

Washtenaw Ave

Geographic Area Recommendations

Platt Rd to US-23 | 1.0 Miles

2007 NTP: Near-term Map

Washtenaw Ave is the primary link between Ann Arbor and Ypsilanti and a very important non-motorized corridor. The 2007 NTP recommended bike lanes for the stretch from Platt Rd to US-23, but the road configuration, MDOT ownership, and traffic on Washtenaw presented a challenge for the non-motorized network. The rest of Washtenaw Ave is served by shared-use paths and sidewalks, including a new shared-use path constructed in 2011 from Tuomy to Glenwood & Platt and a new shared-use path completed in 2013 under US-23.

The in-road bike lane recommendation has proven difficult to implement, and staff now recommends a shared-use path on the south side of Washtenaw Ave. At the east end of the segment, shared-use paths on both sides of the corridor have been completed, accommodating non-motorized traffic across entrance and exit ramps and under US-23. Connecting existing facilities west of Platt to these new shared-use paths becomes the priority for Washtenaw Ave in the NTP Update.

The long-term recommendation for Washtenaw is a full road reconstruction that transforms Washtenaw into a boulevard with a median and bike lanes in both directions. The recommendation references the improvements suggested by ReImagining Washtenaw.

William St & Downtown Area

Geographic Area Recommendations

Downtown Overview | 1.5 Miles

2007 NTP: Page 167 & Near-term Map

The 2007 NTP described the downtown area as both a destination for non-motorized users and a challenge to design. The NTP recommended facilities for nearly every central downtown street, according to road configuration. Many of the 2007 recommendations have been completed, linking west Ann Arbor to the downtown area and beyond into Central Campus.

The DDA has administered improvement projects on Fifth Ave and Division St to incorporate complete streets, including a bike lane in each direction, pedestrian bumpouts at intersections, street lighting, bike parking, and other improvements.

The NTP recommended bike lanes for William St, but this has not yet been implemented. Due to the road configuration, staff decided to maintain the 2007 recommendation for bike lanes on William St in the near-term, although other options may be possible, subject to City Council's approval. Such options, subject to engineering considerations, may include a bicycle boulevard. In the long-term, potential road reconstruction projects may allow for a new look at non-motorized facilities on William St.

Concurrent to the Non-motorized Plan Review process, William St was identified as a priority planning project. The DDA has studied William St and led community engagement efforts to identify improvement opportunities, including new facilities to enhance non-motorized travel.

Seventh Street

Geographic Area Recommendations

Huron St to Stadium Blvd | 1.2 Miles

2007 NTP: Pages 51-59 & Near-term Map

The City has received notification of issues related to traffic speed on Seventh St and need for implementation of pedestrian crossings at locations near to, or as is identified in this plan, or other locations to be determined. The City is reviewing traffic and pedestrian facilities across the corridor, looking at adding pedestrian crosswalks and possible traffic calming measures appropriate for arterial streets. The Plan Update recommends that City Staff also evaluates the pedestrian generators along Seventh St such as schools, parks and churches.

Traffic calming tactics may include horizontal deflection of traffic by use of bulb-outs, pedestrian islands, chicanes or other elements. These elements are discussed in detail in section 2.4 Travel Across Road Corridors, pages 51-59, of the 2007 NTP. Careful consideration of these traffic calming measures is needed in order to maintain a balance between calming traffic and limiting impact on the existing bike lanes on Seventh St.

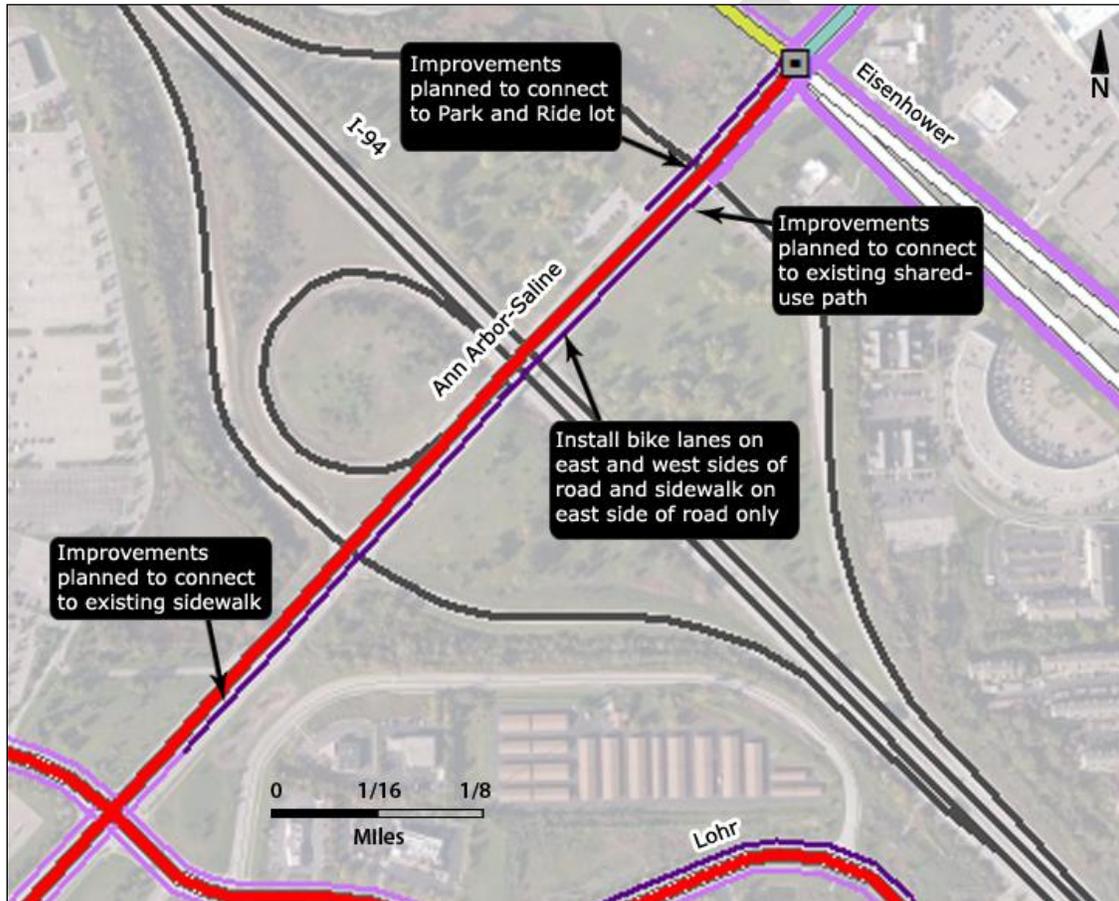
Near-term Opportunities

Geographic Area Recommendations

The following pages illustrate revised near-term recommendations for specific areas in the city. Notes are intended to provide planning-level insights to the revised recommendation.

Near-term Opportunities Update – Map Detail

Ann Arbor-Saline Rd



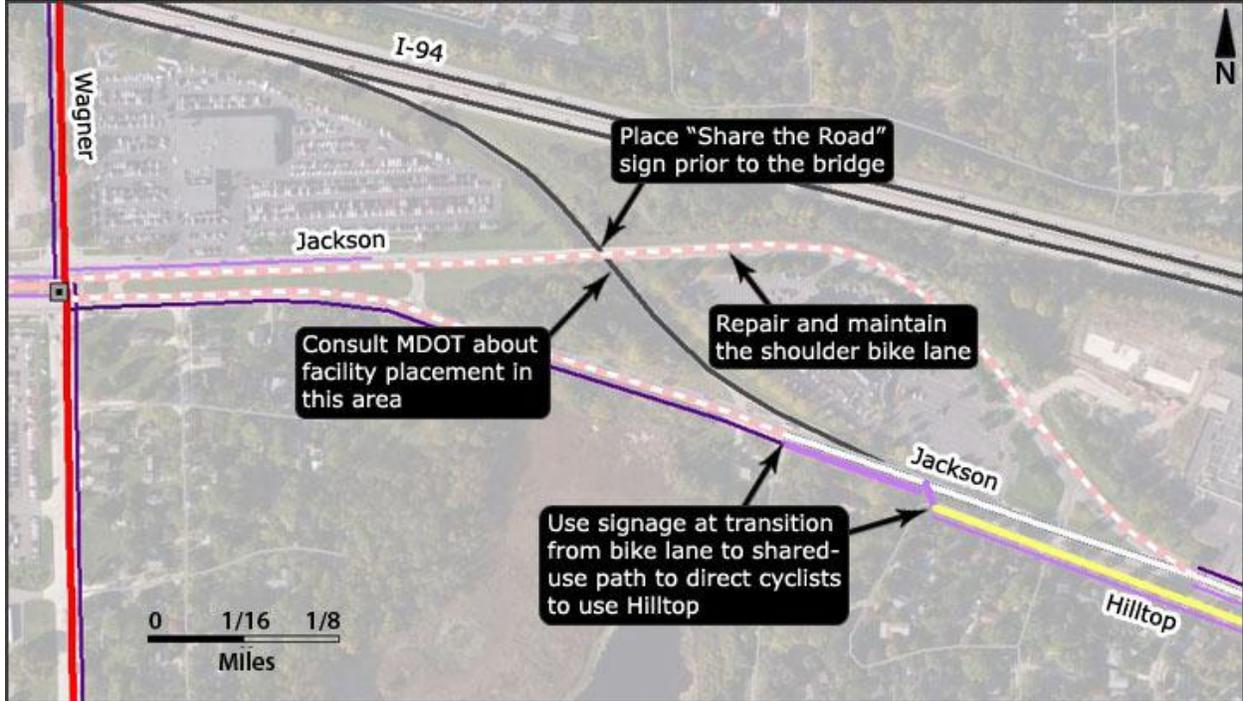
Existing	Proposed	
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		Bike Lane, 1 side only
		Bike Boulevard
		Cycle Track
		Shared-use Arrow
		Signed Bike Route

Existing	Proposed	
		Shared-use Path
		Sidewalk
		Signalized Crosswalk
		Major Mid-block Crossing
		Minor Mid-block Crossing
		No Near-term Improvements

Near-term Opportunities Update – Map Detail

Geographic Area Recommendations

Jackson Ave

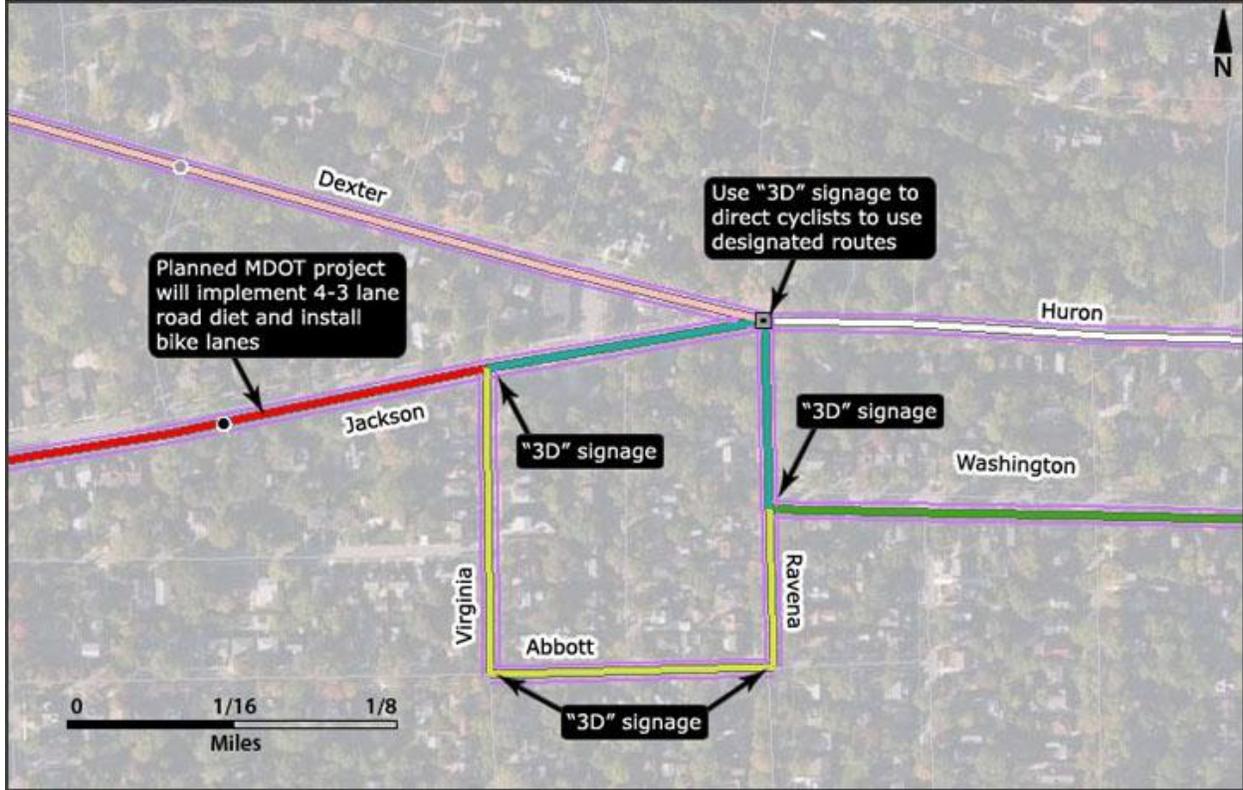


Existing	Proposed		Existing	Proposed	
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		Bike Lane, 1 side only			Sidewalk
		Bike Boulevard			Signalized Crosswalk
		Cycle Track			Major Mid-block Crossing
		Shared-use Arrow			Minor Mid-block Crossing
		Signed Bike Route			No Near-term Improvements

Near-term Opportunities Update - Map Detail

Geographic Area Recommendations

Jackson Ave/Huron St/Dexter Ave

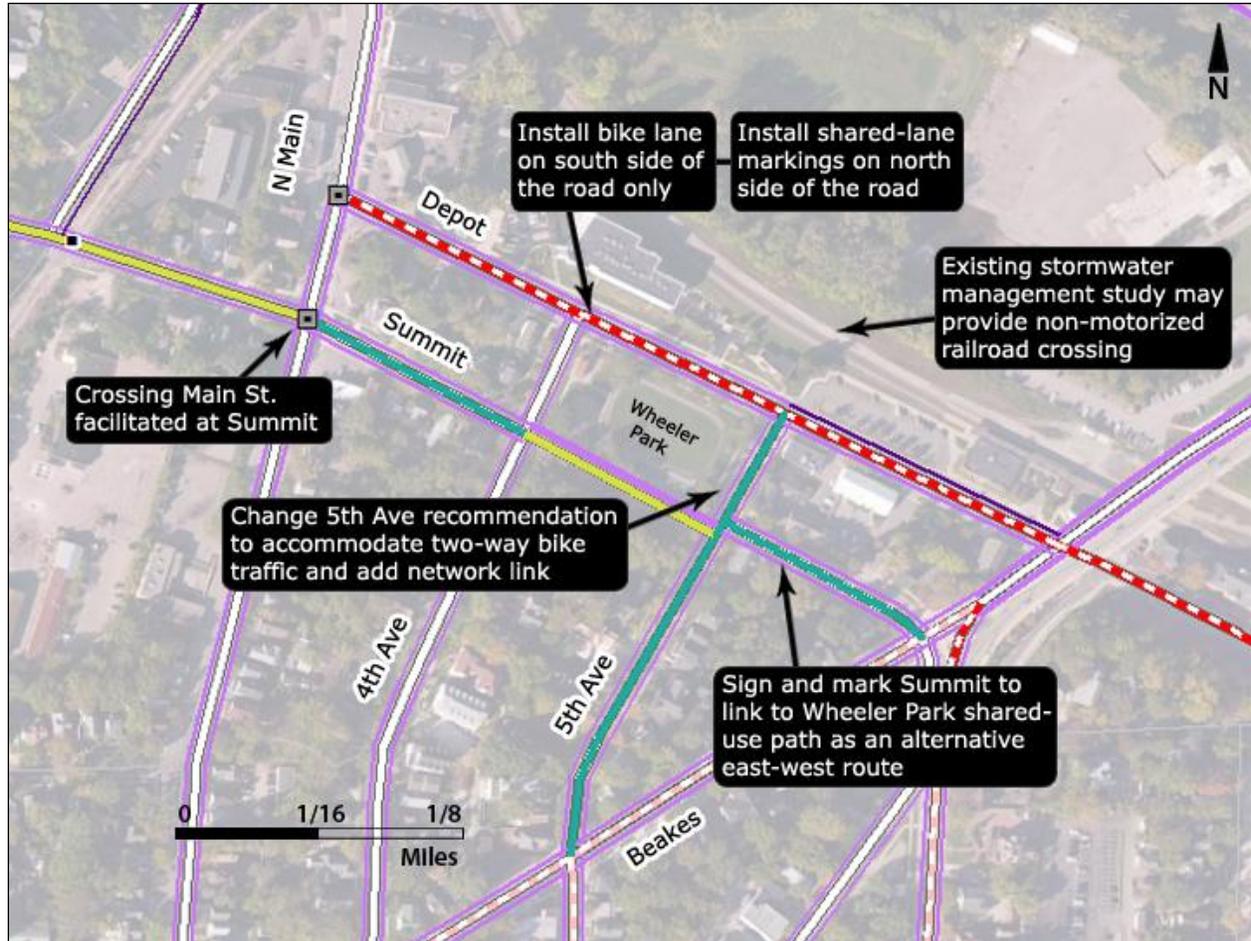


Existing	Proposed		Existing	Proposed	
		Bike Lanes			Shared-use Path
		Bike Lane, 1 side only			Sidewalk
		Bike Boulevard			Signalized Crosswalk
		Cycle Track			Major Mid-block Crossing
		Shared-use Arrow			Minor Mid-block Crossing
		Signed Bike Route			No Near-term Improvements

**Near-term Opportunities Update
– Map Detail**

Geographic Area Recommendations

Depot St



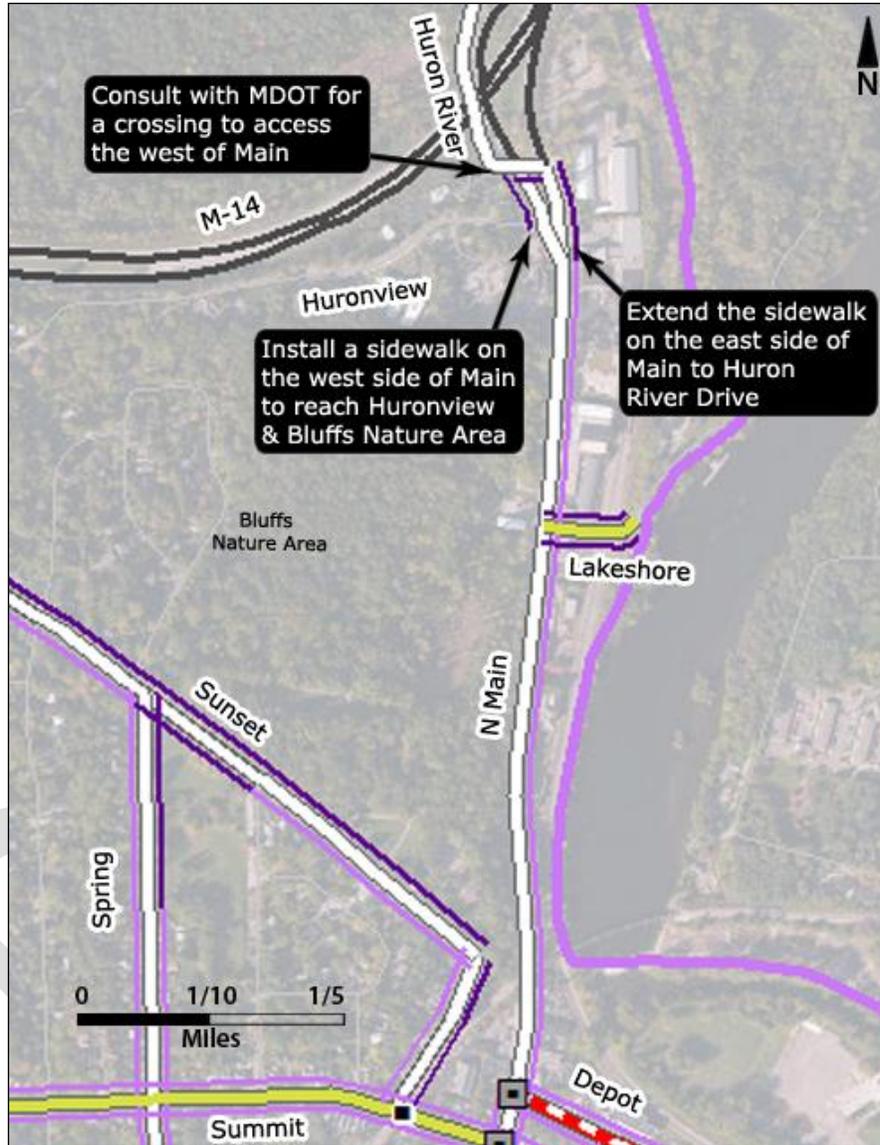
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		Signed Bike Route

Existing	Proposed	
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		Sidewalk
		Signalized Crosswalk
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		Minor Mid-block Crossing
		No Near-term Improvements

**Near-term Opportunities Update
– Map Detail**

Geographic Area Recommendations

N Main St



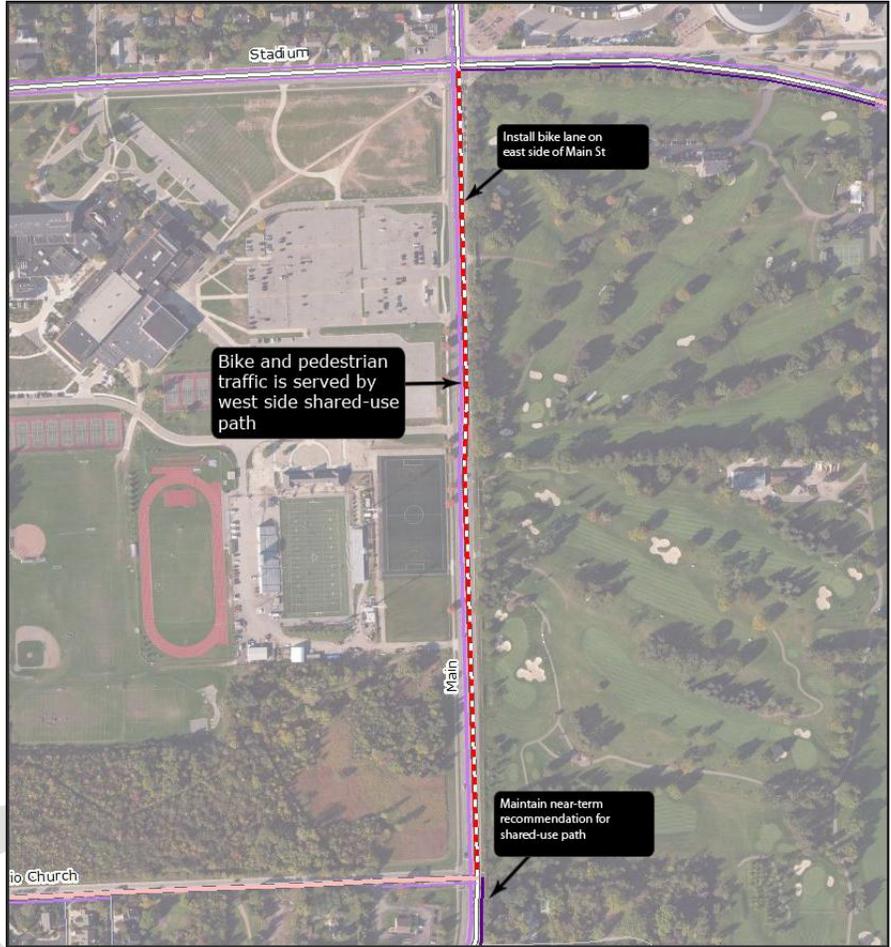
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		Shared-use Arrow
		Signed Bike Route

Existing	Proposed	
		Shared-use Path
		Sidewalk
		Signalized Crosswalk
		Major Mid-block Crossing
		Minor Mid-block Crossing
		No Near-term Improvements

Near-term Opportunities Update - Map Detail

Geographic Area Recommendations

S Main St



Existing	Proposed	
		Bike Lanes
		Bike Lane, 1 side only
		Bike Boulevard
		Cycle Track
		Shared-use Arrow
		Signed Bike Route

Existing	Proposed	
		Shared-use Path
		Sidewalk
		Signalized Crosswalk
		Major Mid-block Crossing
		Minor Mid-block Crossing
		No Near-term Improvements

Near-term Opportunities Update - Map Detail

Geographic Area Recommendations

Miller Ave



Existing	Proposed	
		Bike Lanes
		Bike Lane, 1 side only
		Bike Boulevard
		Cycle Track
		Shared-use Arrow
		Signed Bike Route

Existing	Proposed	
		Shared-use Path
		Sidewalk
		Signalized Crosswalk
		Major Mid-block Crossing
		Minor Mid-block Crossing
		No Near-term Improvements

Near-term Opportunities Update – Map Detail

Geographic Area Recommendations

Miller Ave/Miller Rd

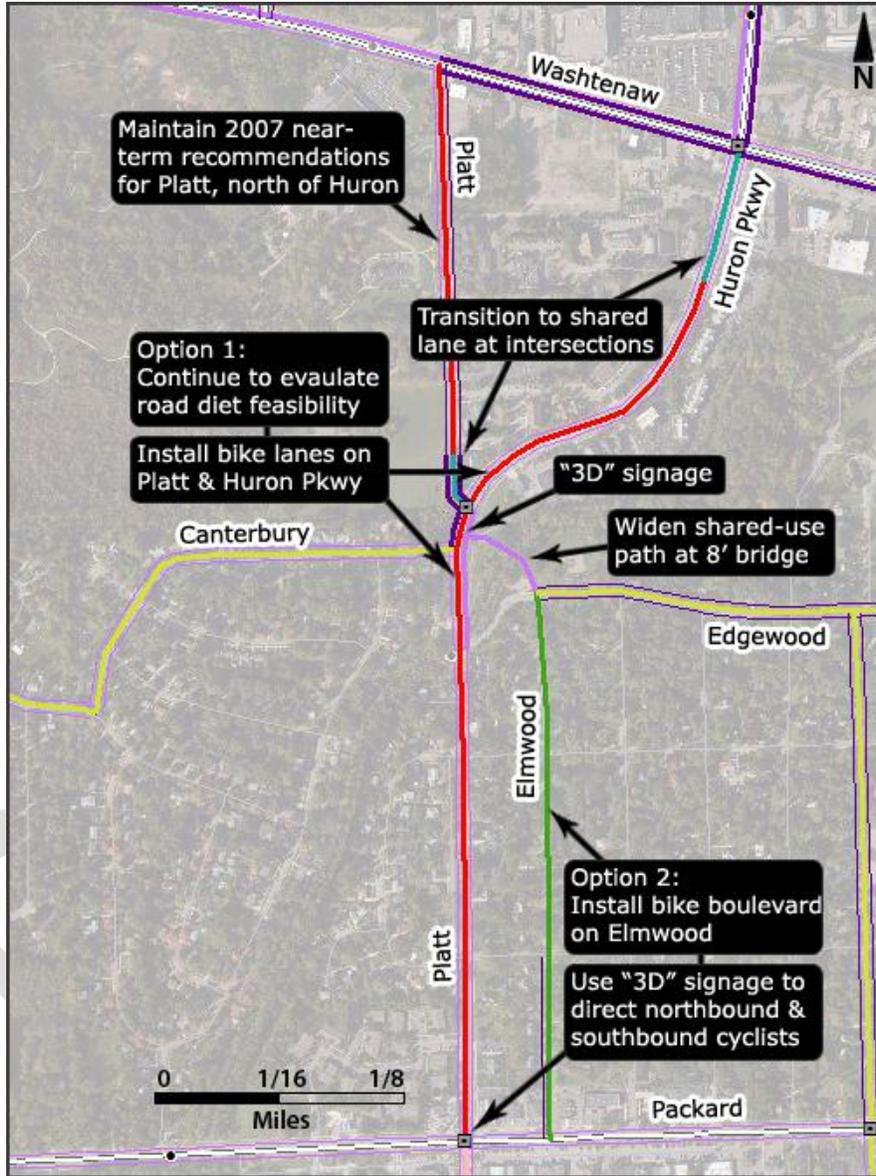


Existing	Proposed		Existing	Proposed	
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		Bike Lane, 1 side only			Sidewalk
		Bike Boulevard			Signalized Crosswalk
		Cycle Track			Major Mid-block Crossing
		Shared-use Arrow			Minor Mid-block Crossing
		Signed Bike Route			No Near-term Improvements

**Near-term Opportunities Update
– Map Detail**

Geographic Area Recommendations

Platt Rd



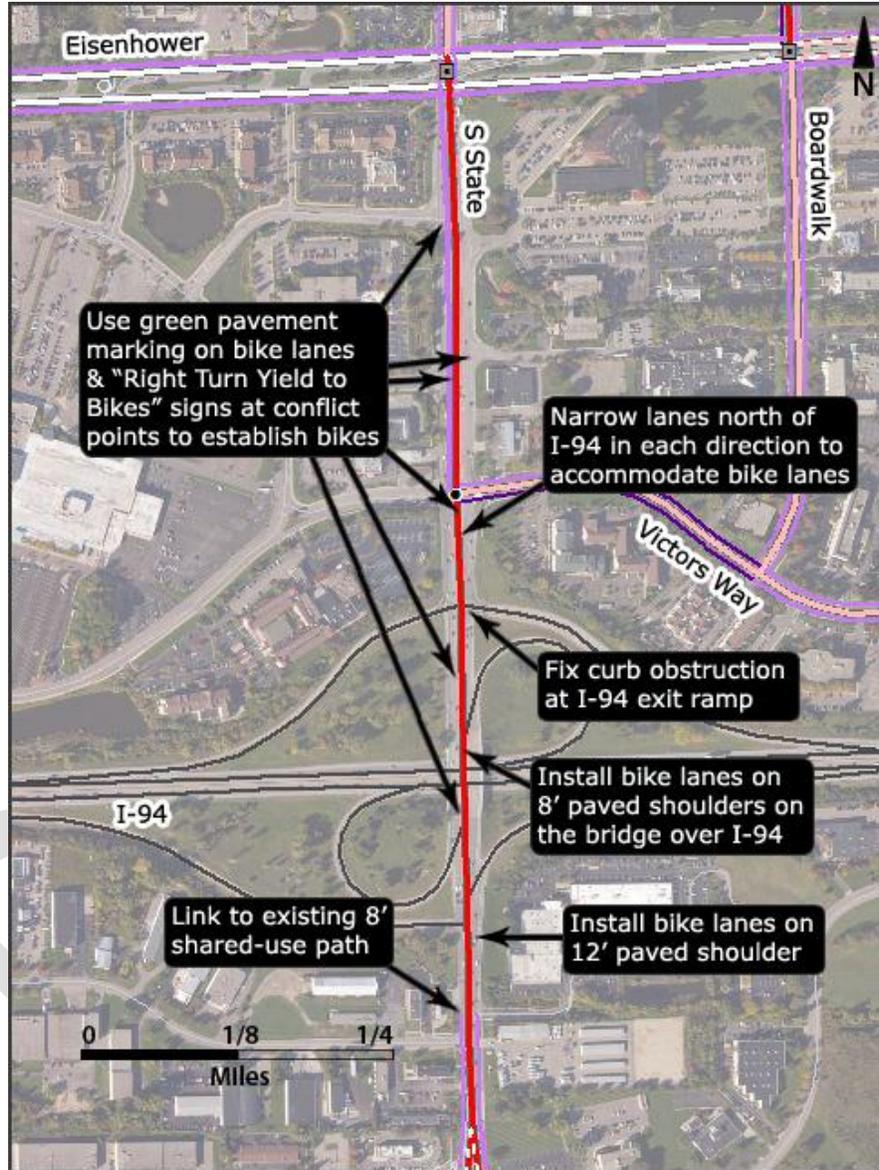
Existing	Proposed	
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		Bike Boulevard
		Cycle Track
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		Signed Bike Route

Existing	Proposed	
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		Sidewalk
		Signalized Crosswalk
		Major Mid-block Crossing
		Minor Mid-block Crossing
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**Near-term Opportunities Update
– Map Detail**

Geographic Area Recommendations

S State St

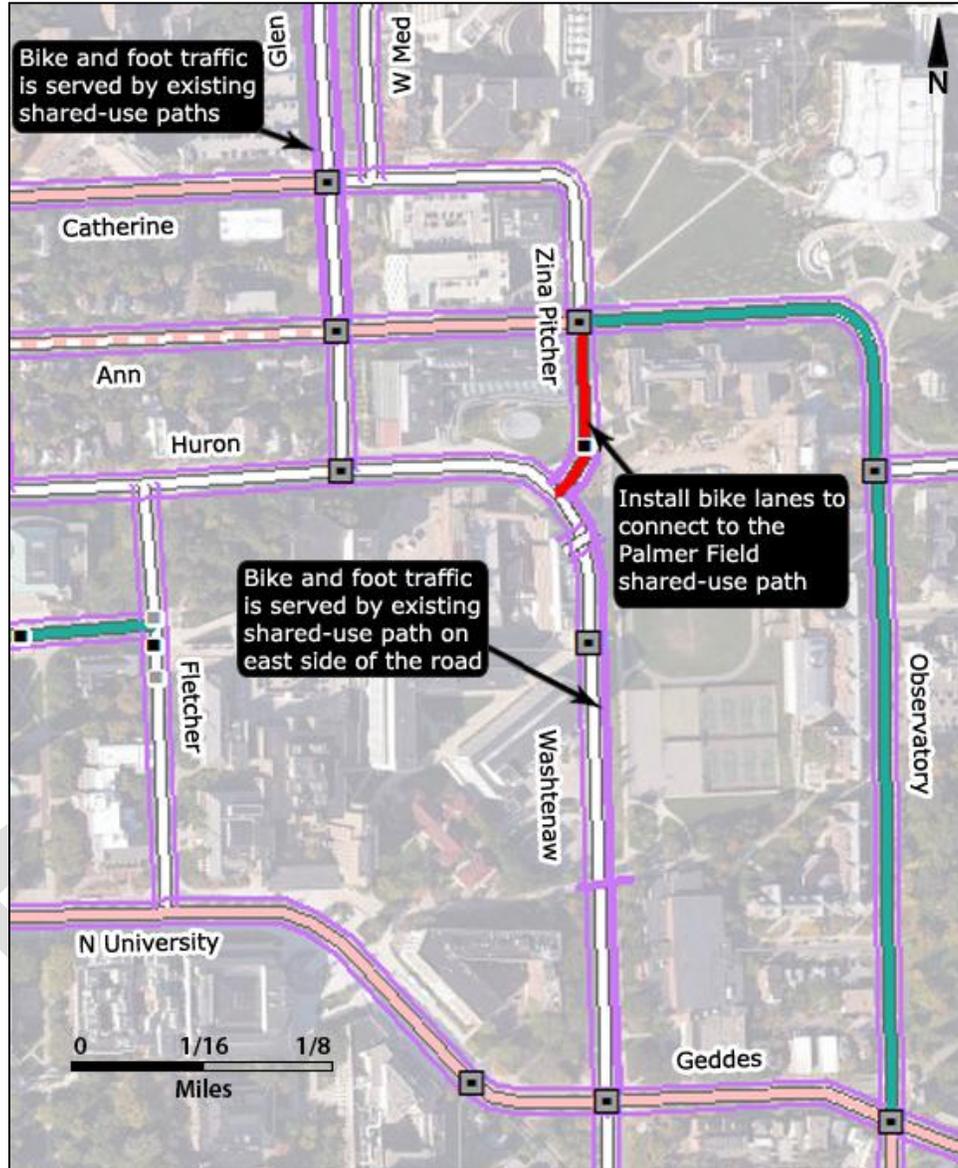


Existing	Proposed		Existing	Proposed	
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		Bike Lane, 1 side only			Sidewalk
		Bike Boulevard			Signalized Crosswalk
		Cycle Track			Major Mid-block Crossing
		Shared-use Arrow			Minor Mid-block Crossing
		Signed Bike Route			No Near-term Improvements

**Near-term Opportunities Update
- Map Detail**

Geographic Area Recommendations

University of Michigan Campus Connection

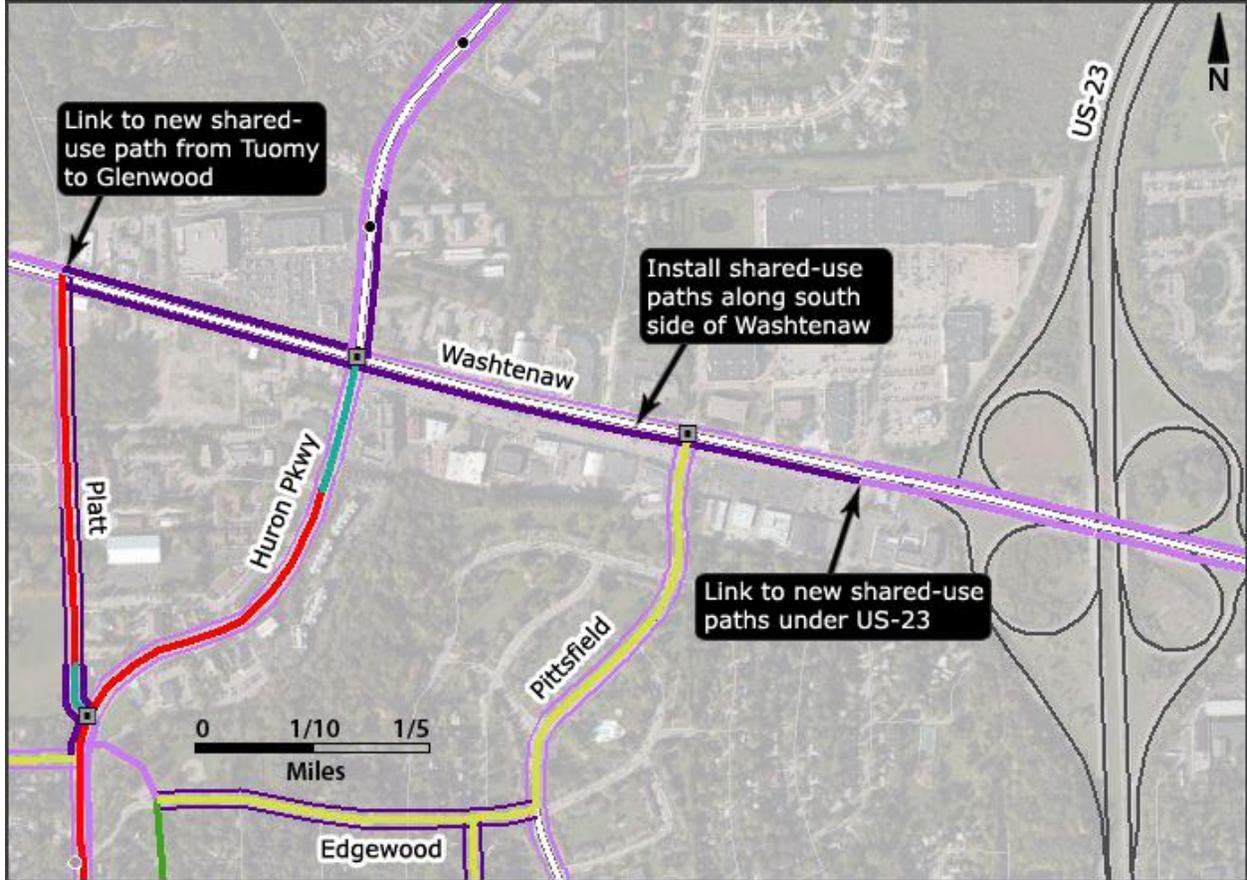


Existing	Proposed		Existing	Proposed	
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		Bike Lane, 1 side only			Sidewalk
		Bike Boulevard			Signalized Crosswalk
		Cycle Track			Major Mid-block Crossing
		Shared-use Arrow			Minor Mid-block Crossing
		Signed Bike Route			No Near-term Improvements

Near-term Opportunities Update – Map Detail

Geographic Area Recommendations

Washtenaw Ave



Existing	Proposed	
		Bike Lanes
		Bike Lane, 1 side only
		Bike Boulevard
		Cycle Track
		Shared-use Arrow
		Signed Bike Route

Existing	Proposed	
		Shared-use Path
		Sidewalk
		Signalized Crosswalk
		Major Mid-block Crossing
		Minor Mid-block Crossing
		No Near-term Improvements

Geographic Area Recommendations

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Long-term Recommendations

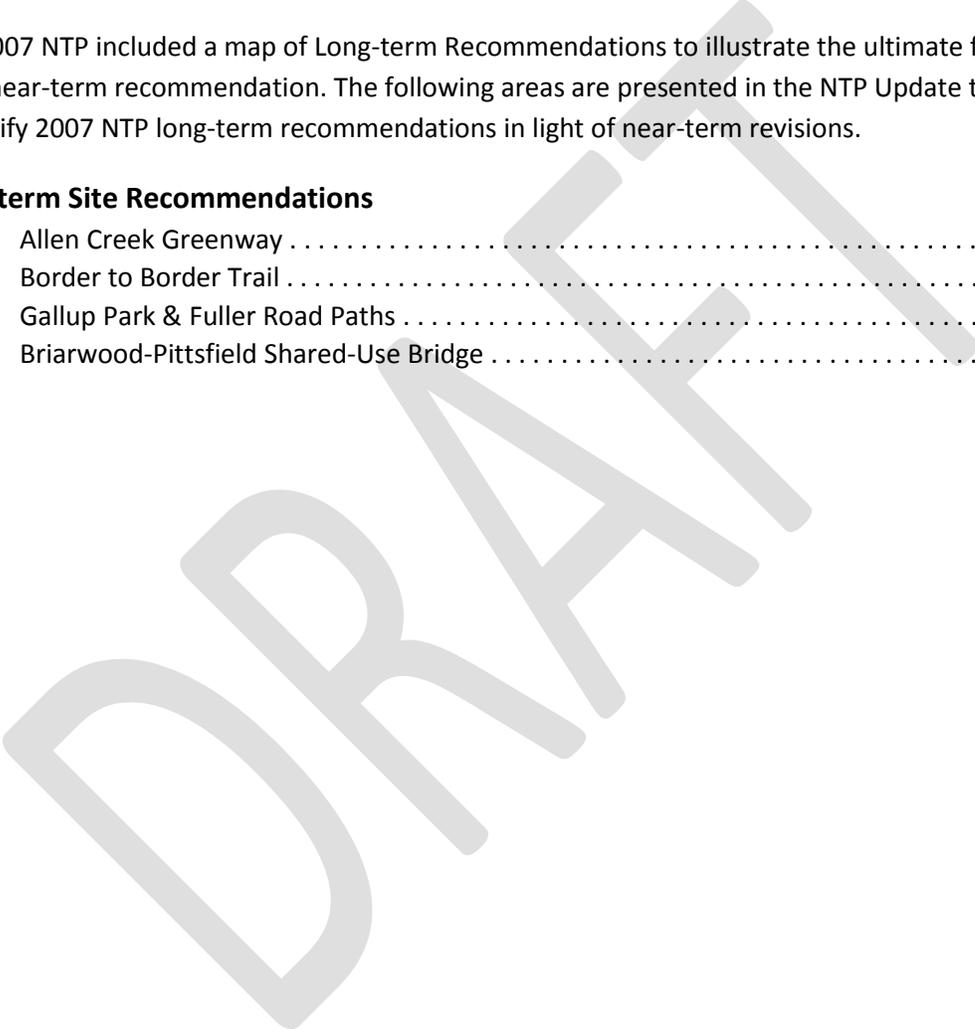
Geographic Area Recommendations

The 2013 Plan Update focuses on near-term recommendation updates and revisions, but through the review process, long-term recommendations were brought to staff’s attention for review. The 2007 Long-term recommendations were often the same as near-term opportunities; those that were different were meant as implementations to be made along with new or reconstructed major facilities. Long-term recommendations are major capital improvements that will be implemented over an extended period of time as funding becomes available or they are integrated into other major construction projects.

The 2007 NTP included a map of Long-term Recommendations to illustrate the ultimate facility goal for each near-term recommendation. The following areas are presented in the NTP Update to reemphasize or clarify 2007 NTP long-term recommendations in light of near-term revisions.

Long-term Site Recommendations

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Allen Creek Greenway

Geographic Area Recommendations

South Ann Arbor to N Main St | 2.3 miles

2007 NTP: Pages 167, 181

The Allen Creek Greenway is a proposed “green walking and bicycle pathway located in the Ann Arbor Railroad right-of-way, running from the University of Michigan athletic complex to Argo Dam and the Huron River” that will establish a link between residential, commercial, retail, and cultural development in Ann Arbor with the open space and natural areas along the river (acgreenwayconservancy.org). The Greenway will provide non-motorized access from the University of Michigan’s South Campus to west of Downtown and the B2B Trail’s shared-use path along the west bank of the Huron River.

Detailed analysis of the route and opportunities is provided with the 2008 Proposed Route of the Allen Creek Greenway: Essential Route and Future Opportunities Draft from the Allen Creek Greenway Conservancy. The guide displays overhead satellite images with the route and other features overlaid on top of the image. It also shows many photos of current conditions along the railroad and describes the property information for adjacent parcels.

The 2007 NTP identifies the Greenway as a long-term opportunity due to its extent and cost. Although the Greenway remains a long-term opportunity in the 2013 Update, staff will continue looking for opportunities to advance the project according to City Council direction. Key elements of the Allen Creek Greenway will be implemented as funding opportunities become available.

The N Main St area is being reviewed by the North Main Taskforce for recommendations to address multiple parcels in the area. The Taskforce may include non-motorized recommendations relevant to the Greenway and the Non-motorized Transportation Program. As with the Taskforce’s non-motorized recommendations, the implementation designs of the Allen Creek Greenway will be made with careful attention to other projects and planning documents. Such planning documents include the City of Ann Arbor Parks & Recreation Open Space Plan (PROS Plan) and South State Street Corridor Plan.

Border to Border Trail

Geographic Area Recommendations

North Ann Arbor

2007 NTP: Page 181 Map

The Border-to-Border Trail (B2B) is a system of shared-use paths, bike lanes, bike routes, and other facilities that winds along the Huron River in Washtenaw County. It is designed to link communities and preserve open space along the river. The B2B Trail is an ongoing project, and the ultimate goal is a 35-mile trail that completely follows the Huron River through Washtenaw County.

In Ann Arbor, the B2B Trail winds from East Ann Arbor to the Argo Dam and up into the northwest corner of the city, but the trail is not continuous, due to multiple railroad and river crossing obstacles. Although the B2B Trail is not presented as a near-term opportunity, the NTP proposed a number of long-term shared-use path additions and multiple railroad and river crossings to link existing segments of the trail.

The need to connect existing B2B Trail segments was a common theme from public comment received in the review process, and is also identified in the Parks & Recreation Open Space (PROS) Plan. Also, recommendations from the North Main Taskforce will consider a number of alternatives for facilitating non-motorized use in the North Main St area. Additionally, a stormwater management study is in progress for a tunnel project under the railroad where Fourth Ave meets Depot, which may find an opportunity for simultaneously establishing a non-motorized connection. The stormwater management study is working with property owners in considering preferred non-motorized connections in the area.

This Plan Update and its progress will benefit from the products of ongoing planning processes. Therefore, the updated recommendation is to maintain the long-term plan for B2B connections while monitoring concurrent planning projects. However, if new concepts emerge, the next update should incorporate new opportunities as appropriate.

Gallup Park & Fuller Road Paths

Geographic Area Recommendations

Location Varies

2007 NTP: Page 181 Map

The Gallup Park & Fuller Road shared-use paths are some of the most heavily used paths in the city. According to the PROS Plan, Gallup Park is the most popular park in the city. The shared-use paths along Fuller Road are the most direct non-motorized link between Central Campus and North Campus for University of Michigan students. Both parks contain the B2B Trail.

The Gallup Park & Fuller Road Paths are not a near-term opportunity in the 2007 NTP. However, staff identified the need to widen some segments of each park's shared-use paths to 10' wide, which is the AASHTO standard minimum width for heavily utilized shared-use facilities. Where possible, paths should be improved to achieve 12' or 14' width.

Environmental issues need to be assessed to define opportunities to widen facilities. The NTP Update recommends that the addition of impervious surfaces be made with considerations to possible impacts to runoff and stormwater services. This area is not a near-term opportunity.

Briarwood-Pittsfield Shared-Use Bridge **Geographic Area Recommendations**
Over I-94 **2007 NTP: Page 181**

A non-motorized bridge over I-94 would provide improved linkages between the communities of Ann Arbor and Pittsfield Township. This link should be evaluated in context of the State Street Corridor Plan.

The possible linking of Ann Arbor and Pittsfield Township can improve access to the various employment, recreational, residential and shopping opportunities on either side of I-94. Coordination between Pittsfield Township, the Road Commission, MDOT and the City will be essential in planning for this long term non-motorized improvement.

The link is proposed from Briarwood Mall, near the Towne Place Suites Hotel, to near the water tower on the south side of I-94. This recommendation would take advantage of the existing low traffic density and speed limits on Briarwood Circle, on the north side of I-94, and the existing path on the south side of I-94 which connects to Oak Valley Dr.