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PROPOSED REVISIONS TO THE SAINT PAUL BICYCLE PLAN

This memo outlines proposed revisions to the Saint Paul Bicycle Plan (SPBP) as a result of recent planning efforts regarding the Saint Paul Grand Round as well as the Capital City Bikeway.

The SPBP was adopted by City Council in March of 2015, an ambitious master planning document that would guide implementation of bicycle facilities throughout Saint Paul. Adoption of the SPBP has allowed the Public Works Department to incorporate development of bikeways into routine projects, such as street resurfacing or reconstruction. In the two years since adoption, over 25 miles of new bikeways have been constructed throughout the city, and over 9 miles of bikeways have been improved or resurfaced.

After the SPBP was adopted, the 8-80 Vitality Fund provided an opportunity to do additional planning and visioning for two components of the SPBP, the Saint Paul Grand Round, and a network of bikeways throughout downtown, which came to be known as the Capital City Bikeway.

Those two planning efforts concluded in late 2016, and are now informing these proposed revisions to the SPBP. It is necessary to update and revise the SPBP to ensure that the recommendations of the Saint Paul Grand Round and Capital City Bikeway studies are included in adopted plans that are part of the City Comprehensive Plan. This is one of several steps to ensure they are eligible for federal funding, or other funding sources.

Saint Paul Grand Round

The SPBP adopted in 2015 recommends including both off-street paths and in-street bike lanes on streets included in the Grand Round. The Grand Round planning effort provided an opportunity to take a more holistic look at all modes using the Grand Round. The result was a vision for Saint Paul parkways to promote safety and comfort for all modes, including pedestrians, bicycles, transit, and driving. The *Grand Round Design & Implementation Plan* recommends ensuring a safe and traffic calmed environment by narrowing the street to as little as 24 feet wide, promoting slower speeds. The plan also promotes accommodating people using bicycles on off-street paths where possible, and people walking on sidewalks on both sides of the street. This proposed revision to the SPBP modifies the



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recommended bicycle facility types to be consistent with the completed *Grand Round Design & Implementation Plan*.

Capital City Bikeway

The SPBP adopted in 2015 established a bold vision to develop a network of off-street paths throughout downtown, but identified downtown as an area for additional study. The *Capital City Bikeway: Network Study and Design Guide* recommends alignments for proposed bikeways throughout the downtown area and provides design guidance to promote placemaking, economic development, and safety. This proposed revision to the SPBP incorporates the recommended Capital City Bikeway alignment and bikeway facility types into the SPBP.

Other Changes

A handful of additional miscellaneous revisions to the SPBP are also proposed at this time. These revisions are limited to the following:

- Correcting minor errors in the 2015 SPBP.
- Clarifying the conditions that will warrant future revisions to the SPBP.
- Ensuring consistency regarding regional trails with the Metropolitan Council's 2040 Regional Parks Policy Plan, which has been updated since 2015.
- Incorporating instances where new bikeways were constructed in 2015 or 2016 that were not identified in the 2015 bike plan. These include:
 - E Lafayette Frontage Road – MnDOT striped an in-street bike lane along East Lafayette Frontage Road between Plato Boulevard and Fillmore Avenue in 2015 as part of the Lafayette bridge project.
 - Otto Avenue – The City constructed an off-street path in 2016 along Otto Avenue between W 7th Street and Shepard Road.
 - Payne Avenue – The City striped in-street bike lanes on Payne Avenue from Phalen Boulevard to Hawthorne Avenue in 2016.

The attached document details all of the proposed revisions to the SPBP.

Proposed Revisions to the Saint Paul Bicycle Plan

1.0 Introduction

1.5 Future Plan Updates

As is the case with all planning documents, this plan will require future updates to remain useful and relevant. The current state of bicycle planning nationwide is rapidly evolving and U.S. cities are embarking on an age of experimentation with new bicycle facilities. Cities are beginning to design and build new types of bikeways that were relatively unknown as little as five years ago. It is anticipated that bicycle planning innovations will continue to accelerate.

It is recommended that this plan be updated approximately every 5-7 years periodically to take advantage of new opportunities, new innovations, and new trends. It is likely that over the coming years, new priorities or strategies will emerge citywide, and new initiatives and programs will be desired. This plan does not need to be updated to reflect minor deviations from the recommendations of this plan that are encountered during implementation of bikeways across the city. The primary reason to update this document is to ensure that recommendations coming out of other substantial planning efforts are incorporated into the Comprehensive Plan, to which this plan is an addendum.

2.0 Why Bicycling Matters

[No Revisions]

3.0 Bikeways Accessible to Everyone

[No Revisions]

4.0 Policy and Planning Context

[Insert two new sections as follows]

4.6 Grand Round Design & Implementation Plan (2016)

The *Grand Round Design & Implementation Plan* built on recommendations of the 2000 Grand Round Master Plan to develop a final implementation plan for the Grand Round. The plan includes details on trail alignments, information on historic significance, and style guide for street furniture, branding and public art.

4.7 Capital City Bikeway: Network Study and Design Guide (2016)

The *Capital City Bikeway: Network Study and Design Guide* identified a network of downtown bikeways called the Capital City Bikeway and recommended connections between downtown

and the surrounding neighborhoods. The Guide defines the hierarchy of the downtown bike network and the style of the Capital City Bikeway, including landscaping, street furniture, branding and public art.

5.0 Bicycle Network Framework

[No Revisions]

6.0 Expanding the Bicycle Network

The primary objective of this plan is to establish the planned bicycle network as directed by Strategy 3.4 of the Comprehensive Plan. The planned bicycle network is the result of a planning process that included substantial public input and collaboration between city staff from several departments, including Public Works, Planning & Economic Development, and Parks & Recreation. The primary objective of the planned bicycle network is to provide safe and comfortable places for people of all ages, abilities, and preferences to ride a bicycle.

6.1 Existing Bicycle Network

There are a total of 153 miles of bikeways in Saint Paul as of March 2015, including facilities owned and managed by agency partners. The network of existing bikeways is divided relatively evenly between off-street paths and on-street facilities of various types. About 48% of the existing facilities throughout the city are off-street paths, with bike lanes and shoulders composing an additional 35% of the bike network. The remaining 17% of the existing bicycle network is comprised of bicycle boulevards or enhanced shared lanes. The existing bicycle network is identified on **Figure 2**.

Table 6.1.1 Existing (March 2015) Bicycle Network

[No revisions to table]

6.2 Planned Bicycle Network

This plan identifies a full bicycle network of 350-347 miles, an increase of 197-195 miles of new bikeways. This is a 129%127% increase in bikeways, compared to the existing 153 miles of bikeways in March 2015. The planned bicycle network was designed to serve major destinations throughout the city based on the mapping criteria presented in **Appendix D**. The complete functional classification and facility types for each link in the bicycle network are shown on **Figure 3** and **Figure 4**.

This plan envisions a bikeway system based primarily on off-street paths and in-street separated lane facilities such as bike lanes or cycle tracks to appeal to the widest range of potential users.

Approximately 70% of the planned bicycle network is comprised of off-street path or in-street separated lane facilities. An additional 13%14% of the full bikeway network is comprised of bicycle boulevard facilities. Roughly 17% of the planned bicycle network are-is enhanced shared lane facilities. In many cases this facility type recommendation was made where space or traffic characteristics did not permit for the implementation of one of the other three facility types. Roughly 60% of the planned bicycle network is identified as major bikeways, 4% of which were identified as long term facilities.

In some cases, the planned bicycle network includes improvements to existing bikeways. For example, this plan recommends that the 17.9 miles of roadway with “bikeable shoulders” should be modified to

fit into one of the planned bikeway facility type groups. In many cases, the existing shoulders can be converted into bicycle lanes relatively easily, though in other cases this plan recommends development of an alternate facility type.

Table 6.2.1 Planned Bicycle Network Expansion by Facility Type

Facility Type		Existing Facilities (miles)	Planned Facilities (miles)	Total Facilities (miles)	Percent of Planned Bicycle Network
Off Street Facilities	Off-Street Paths	74	62	135	39%
	<i>Off-Street SubTotal:</i>	74	62	135	39%
On-Street Facilities	In-Street Separated Lanes*	53	53	107	31%
	Bicycle Boulevards	7	40	47	14%
	Enhanced Shared Lanes	18	39	57	17%
	<i>On-Street SubTotal:</i>	79	133	212	61%
TOTAL		153	195	347	100%

Table 6.2.2 Planned Bicycle Network by Functional Classification

Functional Class	Total Facilities* (miles)	Percent of Bicycle Network
Major	190	55%
Major Long Term	13	4%
Minor	142	41%
Minor Long Term	3	1%
TOTAL	347	100%

The major bikeway network stresses separation between motor vehicles and bicycles, while the minor bikeway network relies more heavily on shared facilities. Nearly 90% of the major bikeways are off-street paths or in-street separated lane facilities. In contrast, only 43% of the minor bikeways are off-street paths or in-street separated facilities. Nearly 25% of the minor bikeways are bicycle boulevard facilities.

Table 6.2.3 Planned Bicycle Network by Facility Type & Functional Classification

Facility Type		Major Bikeways			Minor Bikeways			Total Facilities (miles)
		Near Term Facilities (miles)	Long Term Facilities (miles)	Total Major Facilities (miles)	Near Term Facilities (miles)	Long Term Facilities (miles)	Total Minor Facilities (miles)	
Off Street Facilities	Off-Street Paths	92	13	105	30	0.1	30	135
	<i>Off-Street SubTotal:</i>	92	13	105	30	0	30	135
On-Street Facilities	In-Street Separated Lanes*	74	0.1	74	30	2	33	107
	Bicycle Boulevards	12	0	12	35	0	35	47
	Enhanced Shared Lanes	11	0	11	46	0.4	47	57
	<i>On-Street SubTotal:</i>	97	0	97	112	2	115	212
TOTAL		190	13	202	142	3	145	347

6.3 Barrier Crossings

[No Revisions]

6.4 Regional Bicycle Transportation Network Refinement

[No Revisions]

6.5 Regional Trail Improvement

Regional trail corridors are intended to provide for recreational travel along linear pathways for bicyclists, pedestrians, and other users throughout the metropolitan area. Regional trails must be designated by the Metropolitan Council and are intended to pass through or provide connections between components in the Regional Parks System. Regional trails are defined in the Metropolitan Council's Regional Parks Policy Plan. Regional parks and trails identified in the Regional Parks Policy Plan are eligible for other funding sources, as described in **Appendix G**.

In urban areas such as Saint Paul, the regional trail network also plays an important function for transportation bicycling and often forms the backbone of the bicycle transportation network. Regional trail facilities are often developed along natural or linear features, which can limit the number of intersections, greatly enhancing safety and comfort for trail users.

Four facilities in Saint Paul have been designated as Regional Trails:

- Samuel Morgan Regional Trail
- Bruce Vento Regional Trail
- Trout Brook Regional Trail
- Summit Avenue
- Robert Pira Regional Trail

The Metropolitan Council generally does not designate trails that are wholly contained within regional parks as regional trails. However, many of these trails are critical in connecting the various regional trails together into a cohesive network and are eligible for the same funding sources as regional trails. In Saint Paul, these facilities are

- Mississippi River Boulevard (Mississippi Gorge) Trail
- Lilydale/Harriet Island Trail

- Cherokee Trail
- Indian Mounds Trail
- Battle Creek Trail

Figure 7 identifies the existing regional trails and other linear trails that pass through regional parks, as well as planned regional trails and regional trail search corridors. The Metropolitan Council requires the city to prepare a master plan document for all planned regional trails. Regional trail search corridors are defined by the Metropolitan Council in the Parks Policy Plan.

6.6 Grand Round

The Grand Round is an approximately 26 mile system of parkways, trails, and sidewalks. The Grand Round unifies a network of community and regional parks, parkways, neighborhood landmarks and destinations, scenic viewpoints, and public art. Its “Grandness” is evidenced by the sum of its many parks linked seamlessly together by a consistent design including wayfinding, interpretive signing, bike racks, connections to local parks, drinking fountains, appropriate lighting, historical markers and interpretive elements, landscaping, public art, street furniture, scenic overlooks, and other amenities which add to the comfort, safety, and enjoyment of visitors.

Landscape architect Horace W. S. Cleveland established the early vision for the Grand Round over 100 years ago, which led to the completion of several parkway segments in the early 1900s. By the 1930s, however, implementation of the remainder of the system had stalled. Planning for the parkways waned until the *Grand Round Master Plan* was completed in 2000, which built on the parkway system and started laying the groundwork to complete the 26-mile recreational greenway. The *Grand Round Design & Implementation Plan*, completed in 2016, further refined the vision of the Grand Round and identified trail alignments and design guidelines for the Grand Round.

While the Grand Round was initially perceived as a recreational amenity, the existing portions of the Grand Round form the backbone of the bicycle transportation network as well. The potential for high-quality parkway trails to encourage bicycle use for transportation purposes and to attract a new segment of the population to bicycles should not be underestimated.

The ideal Grand Round is comprised of low-speed scenic parkways and off-street pedestrian and bicycle paths. Wherever possible, bicycles and pedestrians should be provided with separate paths or sidewalks to minimize conflict between the two modes. The Grand Round should include bicycle and pedestrian facilities that are useable and maintained year-round, including snow removal in the winter.

The 2010 *Saint Paul Parks and Recreation System Plan* describes the desire to enhance the 26-mile Grand Round system throughout the city:

Trails are currently the most desired parks and recreation facility by Saint Paul residents. They are an important quality of life element and a factor in choosing where to locate for many residents and businesses. [...] Trails and parkways are advantageous from a fiscal and a

recreation standpoint. Trails allow self-directed recreation which is immensely popular, does not require any staffing (besides periodic maintenance) and requires less initial investment than [other types of facilities]. Due to their linear nature, they have large service areas, and can expand the service areas of parks connected by trails. [...] For these reasons, trails, especially those associated with the historic Grand Round, are a key part of the 21st Century Parks and Recreation System.

The 2010 Saint Paul Parks and Recreation System Plan describes the desire to enhance the 27-mile Grand Round system throughout the city: "Trails are currently the most desired parks and recreation facility by Saint Paul residents. They are an important quality of life element and a factor in choosing where to locate for many residents and businesses. [...] Trails and parkways are advantageous from a fiscal and a recreation standpoint. Trails allow self-directed recreation which is immensely popular, does not require any staffing (besides periodic maintenance) and requires less initial investment than [other types of facilities]. Due to their linear nature, they have large service areas, and can expand the service areas of parks connected by trails. [...] For these reasons, trails, especially those associated with the historic Grand Round, are a key part of the 21st Century Parks and Recreation System." The Grand Round is identified on **Figure 8**:

While the Grand Round was initially perceived as a recreational facility, the portions of the route that are already in place also form the backbone of the bicycle network for transportation cycling as well. The potential for high-quality parkway trails to encourage bicycle use for transportation purposes and to attract a new segment of the population to bicycles should not be underestimated.

An enhanced system of parkways and multi-use off-street paths will allow connections to and between the regional parks, downtown, and other key destinations. The Grand Round—a scenic green parkway for drivers, pedestrians, and people on bicycles around the entire city—has been a vision for Saint Paul for over 100 years.

The Saint Paul Grand Round was conceived by famed landscape architect H.W.S. Cleveland over 100 years ago. His vision led to the completion of several parkway segments in the early 1900s. By the 1930s, however, implementation of the remainder of the system was halted. Many residents are familiar with the alignment of the Grand Round through participation in the Saint Paul Classic Bike Tour, the largest annual bicycle tour in Minnesota that follows the scenic loop around the city.

The ideal Grand Round is comprised of low-speed scenic parkways and off-street pedestrian and bicycle paths. Wherever possible, bicycles and pedestrians should be provided with separate paths or sidewalks to minimize conflict between the two modes, either on the same side or opposite sides of the parkway. The Grand Round should include bicycle and pedestrian facilities that are useable and maintained year-round, including snow removal in the winter.

The Saint Paul Grand Round plays an important role in the bicycle transportation and recreation network. This plan establishes a vision for much of the Grand Round to accommodate all types of users by providing multiple facility types within the same corridor. Providing both off-street paths and on-street bike lanes along portions of the Grand Round is envisioned to attract users of all preferences.

Off-street paths will attract slower bicyclists and pedestrians, while on-street bike lanes will attract faster cyclists.

While the off-street paths attract a wider range of cyclists and are critical to establishing the inclusive nature of the Grand Round, the city should strive to provide on-street bicycle facilities where space permits as well. As many of the off-street paths will permit both bicycles and pedestrians, providing the in-street bicycle facilities will immensely help to encourage faster-moving bicyclists to use the roadway rather than the trail.

In addition, the Saint Paul Grand Round should include a number of other features, including wayfinding, interpretive signing, bike racks, connections to local parks, drinking fountains, appropriate lighting, historical markers and interpretive elements, landscaping, public art, street furniture, scenic overlooks, and other amenities that add to the comfort, safety, and enjoyment of visitors.

Some portions of the Grand Round have already been implemented with multiple facility types in the same corridor. For example, Wheelock Parkway between Arcade Street and Phalen Boulevard provides on-street and off-street bicycle facilities. This plan envisions extending these facilities to other parts of the Grand Round, including Wheelock Parkway west of Arcade Street, Johnson Parkway, and portions of Pelham Boulevard and Como Avenue.

However, this plan does not present a singular vision for the Grand Round, and the planned improvements must be guided by existing constraints. This vision does not propose in-street facilities where the Grand Round follows the Sam Morgan Regional Trail. On-street bicycle facilities are not recommended for Shepard Road or Warner Road. This vision also does not propose off-street path facilities along Raymond Avenue and portions of Como Avenue where right-of-way is limited. In-street bicycle facilities are recommended in these locations:¹

6.7 State Trails

[No Revisions]

6.8 Mississippi River Trail (MRT) - U.S. Bike Route (USBR) 45

MnDOT has been the lead agency on the development of the Mississippi River Trail (MRT), also known as U.S. Bike Route (USBR) 45, which is a 3,000 mile long planned bikeway from the Mississippi River headwaters to the Gulf of Mexico. The U.S. Bike Route System is a national effort to establish a network of numbered interstate bicycle routes across the nation. Approximately five numbered routes have been identified at a conceptual level that pass through Minnesota. One of these, the MRT, passes through Saint Paul. MnDOT has been the lead agency in identifying the specific alignment of the MRT, and is the lead agency in establishing all signage designating the route.

In Saint Paul, the MRT is established entirely on existing bikeway corridors through signage and wayfinding. The MRT is identified on **Figure 98**.

6.9 Ford Site

The 125-acre Ford Motor Company Twin Cities Assembly Plant is currently in the process of undergoing a major transformation. The former assembly plant has been removed and the city is currently in the process of planning for future redevelopment. The city has established a vision for a “21st Century Community,” and the site will be a livable, mixed use neighborhood that looks to the future with clean technologies and high-quality design for energy, buildings, and infrastructure. The site will place a high priority on encouraging walking, biking, and transit.

The city is currently in the process of setting a vision for new roadways, transit access, walkways, and bikeways throughout the site, ~~and planning should be complete in 2016~~. This ongoing planning process should include establishing a plan for bikeways to be developed throughout the site. Special care should be taken to identify bikeways that both serve the planned development site as well as facilitate bicycle passage through the site. At a minimum, the following bikeway priorities should be set for the Ford Site and the surrounding areas:

- **Dedicated Bicycle Infrastructure** - Off-street and in-street bikeways, as well as support facilities such as bicycle parking, should be incorporated to the fullest extent possible within the Ford site redevelopment, to provide a strong network of bicycle connections to, from, and within the site for all types of users.
- **Improvements to the existing facilities along Mississippi River Boulevard** – The existing trails adjacent to the Ford Site along the west side of Mississippi River Boulevard are not of sufficient width to accommodate existing users, and space to expand the trails is limited given the current location of Mississippi River Boulevard. Improvements to Mississippi River Boulevard that result in additional space to develop higher quality off-street trail facilities along the west side of Mississippi River Boulevard adjacent to the Ford Site should be considered, including the existing trail bottleneck where Mississippi River Boulevard passes underneath Ford Parkway.
- **Improved connections between Mississippi River Boulevard and Ford Parkway** – The existing connections between Mississippi River Boulevard and the Ford Parkway bridge are insufficient and opportunities to improve these connections should be explored.
- **Ford Rail Spur** – Ford site planning should anticipate reuse of the freight railroad spur as a public transportation opportunity and include off-street paths for walking and biking, in addition to other potential modes such as transit. Ford site planning efforts should develop a plan to connect trail users to both Mississippi River Boulevard and the Ford Parkway bridge.
- **Montreal Avenue Extension** – Montreal Avenue is an important existing east/west bicycle route. Concepts should be developed that facilitate east/west travel between the current western terminus of Montreal Avenue and Mississippi River Boulevard.
- **Ford Parkway Improvements** – This plan identifies an enhanced shared lane strategy for a portion of Ford Parkway adjacent to the Ford site. However, this is not an optimal solution given the traffic volumes and speeds on Ford Parkway. Ford site planning efforts should consider alternative options to accommodate east/west bicycle travel on Ford Parkway.

6.10 ~~Downtown Trail Loop & Shared Lanes~~Capital City Bikeway

The primary objective of the Capital City Bikeway is to provide safe and comfortable places for people of all ages, abilities, and preferences to ride a bicycle in downtown Saint Paul. The project will spearhead a transformational change to downtown Saint Paul by increasing activity in the streets, enhancing the vitality of sidewalks and public spaces, and stimulating investment and fostering economic development. When implemented, the Capital City Bikeway will be an enjoyable,

comfortable, and safe experience that appeals to a wide range of people. Design standards are essential to creating a consistent experience on this new bikeway system. Similarly, the elements of the bikeway such as wayfinding, site furnishings, and plantings contribute to a legible, memorable experience unique to the Capital City Bikeway.

Planning for the bikeway was completed in 2016 with the publication of the *Capital City Bikeway: Network Study and Design Guide*, which identified the routes and design guidelines. The bikeways are to be off-street path type facilities that accommodate two-way bicycle traffic, even when adjacent to one-way streets. The Capital City Bikeway will be a connected network of protected bikeways throughout the heart of downtown Saint Paul. When implemented, the Capital City Bikeway will be an enjoyable, comfortable, and safe experience that appeals to a wide range of people. The bikeway design standards as well as the elements of the bikeway such as wayfinding, site furnishings, and plantings are essential to creating a consistent experience on this new bikeway system. Despite the different look and feel of these urban trails, they will share similar operational characteristics with other popular off-street trails throughout the city. People who are comfortable riding a bicycle on off-street paths in other contexts will find these facilities familiar and attractive.

The Capital City Bikeway will connect popular attractions such as the Xcel Center, the Ordway Theater, the Science Museum of Minnesota, the Minnesota History Center, the Union Depot, the Farmers Market, the Lowertown Ballpark, the Landmark Center, the Minnesota Children's Museum, and other institutions and businesses throughout downtown.

Major routes of the Capital City Bikeway are anticipated to attract the largest number of users, and form the backbone of the bikeway network in downtown Saint Paul. These routes include a sidewalk-level two-way bikeway that is physically separated from motor vehicles and pedestrians with landscaping where possible. Major routes feature protected intersections which helps to clearly define spaces for all users, and improve the safety at potential places of conflict among people walking, biking and driving. Major routes include:

- Jackson Street – The bikeway will be located on the west side of the street.
- 9th Street (east of Jackson St) – The bikeway will be located on the south side of the street.
- 10th Street (west of Jackson St)– The bikeway will be located on the north side of the street east of Cedar St and on the south side of the street west of Cedar Street.
- St. Peter Street – The bikeway will be located on the west side of the street.
- Kellogg Boulevard – The bikeway will be located on the east/north side of the street.

Additionally, 4th Street is recommended to be a significant biking and walking corridor in downtown that will complement the Capital City Bikeway. The vision for 4th Street is a “shared street” between transit, bicyclists, pedestrians, and motor vehicles. More study is needed on 4th Street to evaluate operations, parking ramp access, and potential impacts of future rail alignments.

The recommendation to develop a network of off-street trails throughout the downtown has larger objectives than simply accommodating bicycle transportation. At a basic level, this is a recommendation to develop vibrant urban spaces that encourage city residents and visitors to enjoy

being outdoors whether or not they are using a bicycle. This strategy is best implemented within the context of full reconstruction of adjacent sidewalks (if not the full right-of-way), when the needs of pedestrians and ground floor activity in adjacent buildings can be enhanced.

This recommendation is designed to be an economic development catalyst for downtown businesses. Companies that choose to locate in downtown must be confident that downtown is a place where employees will want to work and spend time. Businesses must be confident that the downtown built environment will help them attract top talent from across the nation, in addition to encouraging graduates from the many colleges and universities in Saint Paul to want to stay and work locally. Businesses of all types will flourish as downtown becomes a place where people want to spend time outdoors.

~~This plan recommends the development of a unique off-street trail network throughout the downtown area as well as enhanced shared lanes on most downtown streets. This strategy is designed to make downtown a hub in the city bicycle network and to effectively and safely accommodate cyclists of all preferences. The trails are designed to accommodate slower bicyclists and to encourage new or casual cyclists to visit downtown. The enhanced shared lanes throughout downtown will accommodate faster cyclists who are seeking the operational and speed benefits of integrating with motorized traffic.~~

~~The planned downtown trail network can be described as a loop alignment as well as connections between the loop and the existing bikeways approaching downtown. The loop trail will effectively place a majority of downtown within two or three blocks of the trail. Connections between the loop and other existing and planned routes into and out of downtown will be developed prior to or in concurrence with the loop to ensure connectivity to the surrounding bicycle network.~~

~~The trails are planned to be off-street path type facilities that accommodate two-way bicycle traffic, even when adjacent to one-way streets. The trails throughout downtown will be of a different aesthetic character than other trails throughout the city. Generally off-street path facilities are constructed using asphalt, and are surrounded by turf, landscaping, or other boulevards on both sides where space permits. The downtown trails will take on more of an urban character and may be constructed out of a number of different materials, including concrete to provide a distinctive appearance. Despite the different look and feel of these urban trails, they will share similar operational characteristics with other popular off-street trails throughout the city. People who are comfortable riding a bicycle on off-street paths in other contexts will find these facilities familiar and attractive.~~

~~The downtown trail network is a unique recommendation that places Saint Paul at the forefront of bicycle planning in the U.S. Very few other cities have developed similar facilities. Saint Paul may look to the Indianapolis Cultural Trail for design inspiration. The Indianapolis Cultural Trail is a similar eight-mile network of off-street paths through downtown Indianapolis connecting the major cultural institutions throughout the city. In Saint Paul, the off-street trail network would connect popular attractions such as the Xcel Center, the Ordway Theater, the Science Museum of Minnesota, the Minnesota History Center, the Union Depot, the Farmers Market, the Lowertown Ballpark, the Landmark Center, the Minnesota Children's Museum, and other institutions and businesses throughout downtown.~~

The recommendation to develop a network of off-street trails throughout the downtown has larger objectives than simply accommodating bicycle transportation. At a basic level, this is a recommendation to develop vibrant urban spaces that encourage city residents and visitors to enjoy being outdoors whether or not they are using a bicycle. This strategy is best implemented within the context of full reconstruction of adjacent sidewalks (if not the full right-of-way), when the needs of pedestrians and ground floor activity in adjacent buildings can be enhanced. The call for utilizing unique and innovative design features extends beyond the bicycle facilities to the sidewalks, plazas, and other public spaces.

This recommendation is designed to be an economic development catalyst for downtown businesses. Companies that choose to locate in downtown must be confident that downtown is a place where employees will want to work and spend time. Businesses must be confident that the downtown built environment will help them attract top talent from across the nation, in addition to encouraging graduates from the many colleges and universities in Saint Paul to want to stay and work locally. Businesses of all types will flourish as downtown becomes a place where people want to spend time outdoors.

Phase I—Jackson Street

The first phase of the downtown bicycle facilities will be developed on Jackson Street, from Shepard Road to 11th Street. Jackson Street is a logical choice to be developed as phase one of the downtown trail loop because of the wide right-of-way, and the need to invest in the corridor to correct other deficiencies such as poor pavement quality. In addition, development of this first phase of the loop will help make the connection between the Gateway State Trail and the Sam Morgan Regional Trail, a critical missing link in the regional trail network. The trail is initially envisioned to be along the west side of Jackson Street, though this recommendation should be confirmed as detailed design progresses.

Additional Trail Alignments

As work progresses on developing a trail along Jackson Street, further study is needed to determine the final alignment of the loop trail network as well as connections between the loop and the existing bikeways that approach downtown. The following corridors should be evaluated to determine the most appropriate final alignment for the remaining three sides of the loop:

- Saint Peter Street or Wabasha Street
- Kellogg Boulevard or 4th Street
- 10th Street or 11th Street

Connections between the loop and other existing and planned routes into and out of downtown will be developed to ensure connectivity to the surrounding bicycle network. The following corridors should be evaluated to determine the most appropriate connections between the loop and the surrounding areas:

- West along Kellogg Boulevard or 5th Street to connect to the bikeways on Summit Avenue, Marshall Avenue, and Eagle Parkway.
- East on Kellogg Boulevard or 4th Street to connect to the Union Depot Trail, Bruce Vento Regional Trail, Trout Brook Regional Trail, and Indian Mounds Trail.
- Northwest on Saint Peter Street or Wabasha Street to connect to the existing bike lanes on John Ireland Boulevard, Park Street, and Como Avenue, as well as the Charles Avenue Bikeway.
- South on Sibley Street to connect to the Sam Morgan Regional Trail.
- The alignment should include a connection to the Wabasha Bridge.

6.11 Interim Facilities & Other Notes

7.0 End of Trip Facilities

[No Revisions]

8.0 Bicycle Programs and Other Topics

[No Revisions]

9.0 Implementation

[Update tables 9.6.1 and 9.6.2 as follows]

Table 9.6.1 Planning Level Implementation Cost

Bikeway Facility Type	Existing Facilities	Planned Facilities	Estimated Implementation Cost	Planned Facilities Estimated Implementation Cost
	(miles)	(miles)	(per mile)	(total)
Off-Street Paths	74	62	\$ 1,500,000	\$ 92,296,271
In-Street Separated Lanes	53	53	\$ 30,000	\$ 1,604,939
Bicycle Boulevards	7	40	\$ 500,000	\$ 20,090,233
Enhanced Shared Lanes	18	39	\$ 21,000	\$ 825,462
TOTAL	153	195		\$ 114,816,904

NOTE: All costs are presented in 2015 dollars.

Table 9.6.2 Planning Level Annual Maintenance Cost

Bikeway Facility Type	Existing Facilities	Planned Facilities	Estimated Annual Maintenance Cost	Existing Facilities Annual Maintenance Cost	Planned Facilities Annual Maintenance Cost	Full Network Annual Maintenance Cost
	(miles)	(miles)	(per mile)	(total)	(total)	(total)
Off-Street Paths	74	62	\$ 12,000	\$ 886,728	\$ 738,370	\$ 1,625,098
In-Street Separated Lanes	53	53	\$ 8,000	\$ 426,266	\$ 427,984	\$ 854,249
Bicycle Boulevards	7	40	\$ 16,000	\$ 117,005	\$ 642,887	\$ 759,892
Enhanced Shared Lanes	18	39	\$ 6,000	\$ 109,039	\$ 235,846	\$ 344,885
TOTAL	153	195		\$ 1,539,037	\$ 2,045,087	\$ 3,584,125

NOTE: All costs are presented in 2015 dollars.

Figure 1: Bicycle Base Map

- Clarify that the figure depicts the March 2015 existing trail network

Figure 2: Existing Bicycle Network

- Clarify that the figure depicts the March 2015 existing bikeway network

Figure 3: Planned Bicycle Network Functional Classification and Figure 4: Planned Bicycle Network Facility Type Group

- Incorporate Grand Round and Capital City Bikeway recommendations
- Remove reference to Ford Site planning completion date

Figure 5: Planned Bicycle Network Barrier Crossings

- Incorporate barrier crossings related to Capital City Bikeway recommendations
- Correct mapping error to identify location of planned bridge between the Bruce Vento Nature Sanctuary and the Samuel Morgan Regional Trail

Figure 6: Regional Bicycle Transportation Network

[No Revisions]

Figure 7: Existing and Planned Regional and State Trails

- Modify text to ensure consistency with Metropolitan Council 2040 Regional Parks Policy Plan
- Remove construction completion date of Harriet Island to South Saint Paul Regional Trail and indicate that it has a Metropolitan Council approved master plan
- Modify Summit Avenue alignment to be a Regional Trail Search Corridor

Figure 8: Planned Grand Round Improvements

This Figure will be eliminated. The recommendations for the Grand Round have been simplified as a result of the Grand Round study, and the information on this figure is duplicative of the information in Figure 4. A graphic from the Grand Round study will be incorporated into Chapter 6 of the bike plan identifying the Grand Round alignment.

Figure 9: Mississippi River Trail (U.S. Bike Route 45)

- Update name of Harriet Island to South Saint Paul Regional Trail to Robert Pira Regional Trail
- Remove outdated construction timelines

- Change figure number

Legend

- Roadway - bicycles permitted
- Roadway - bicycles prohibited
- Off-Street Path*
- Freight Railroad

*This figure depicts the March 2015 off-street path network.

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The Base Map

This figure identifies all roadways that permit bicycle use, whether or not any bicycle-specific improvements have been made to those roadways, as well as all off-street paths that permit bicycle use.

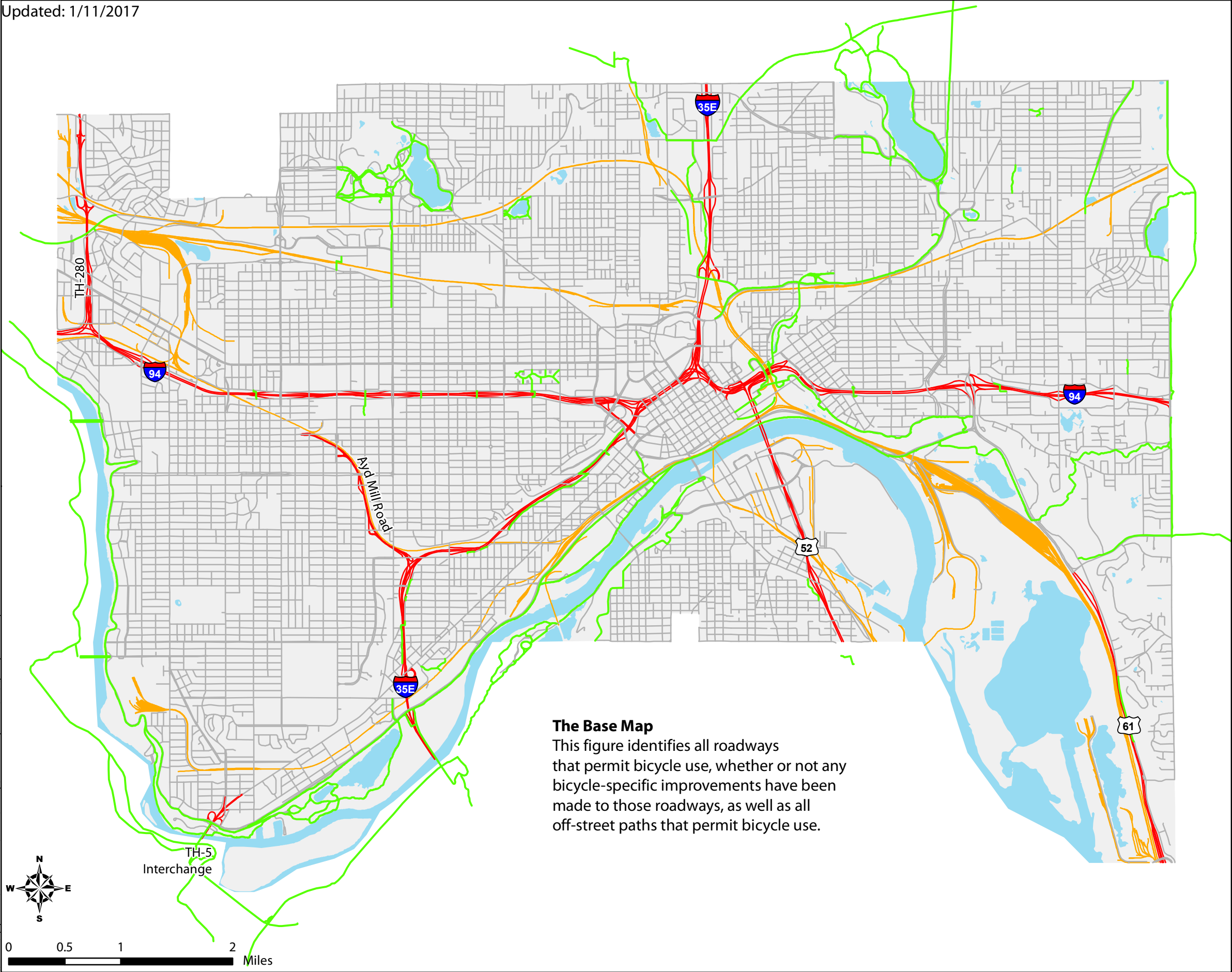
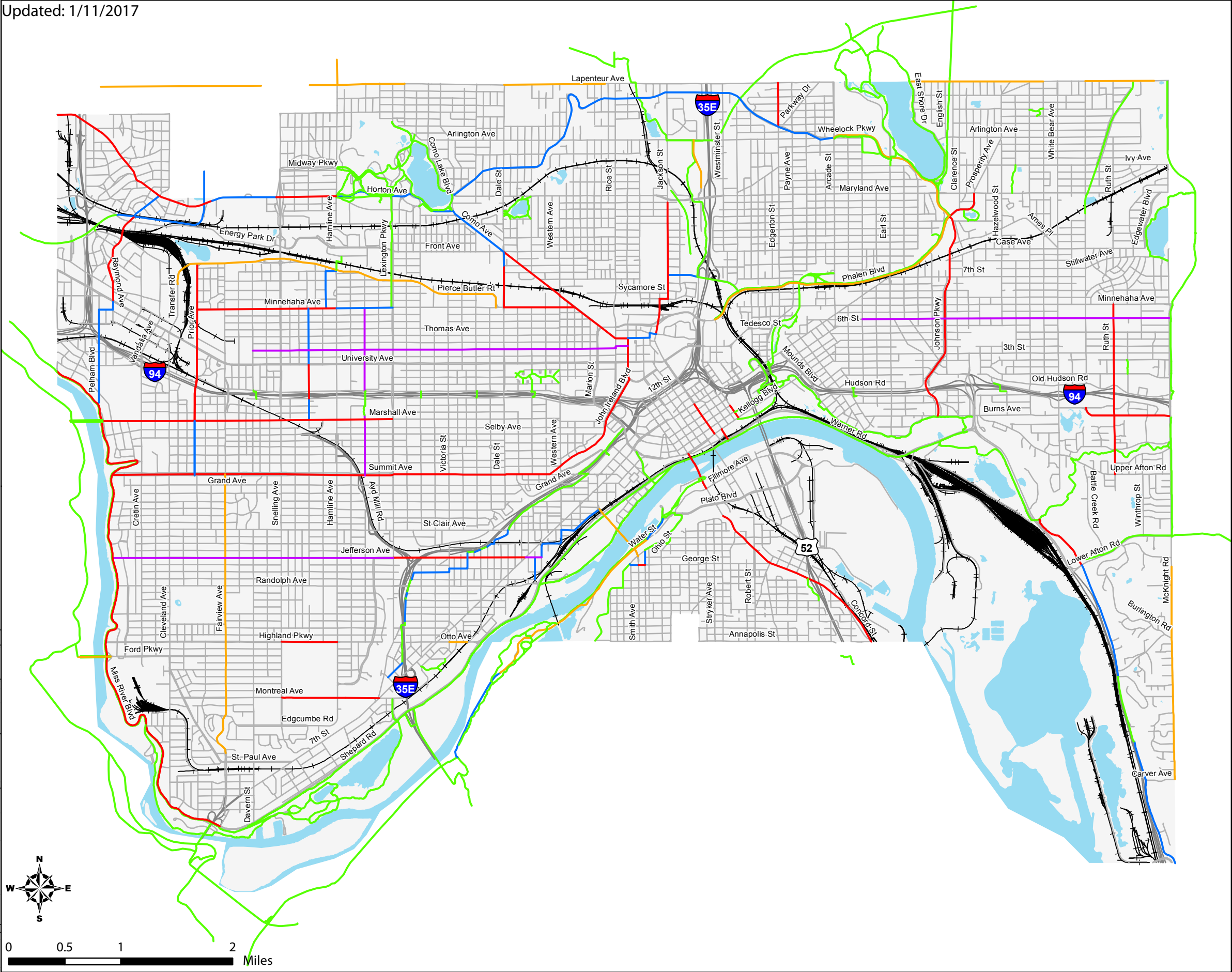


Figure 1
Bicycle Base Map



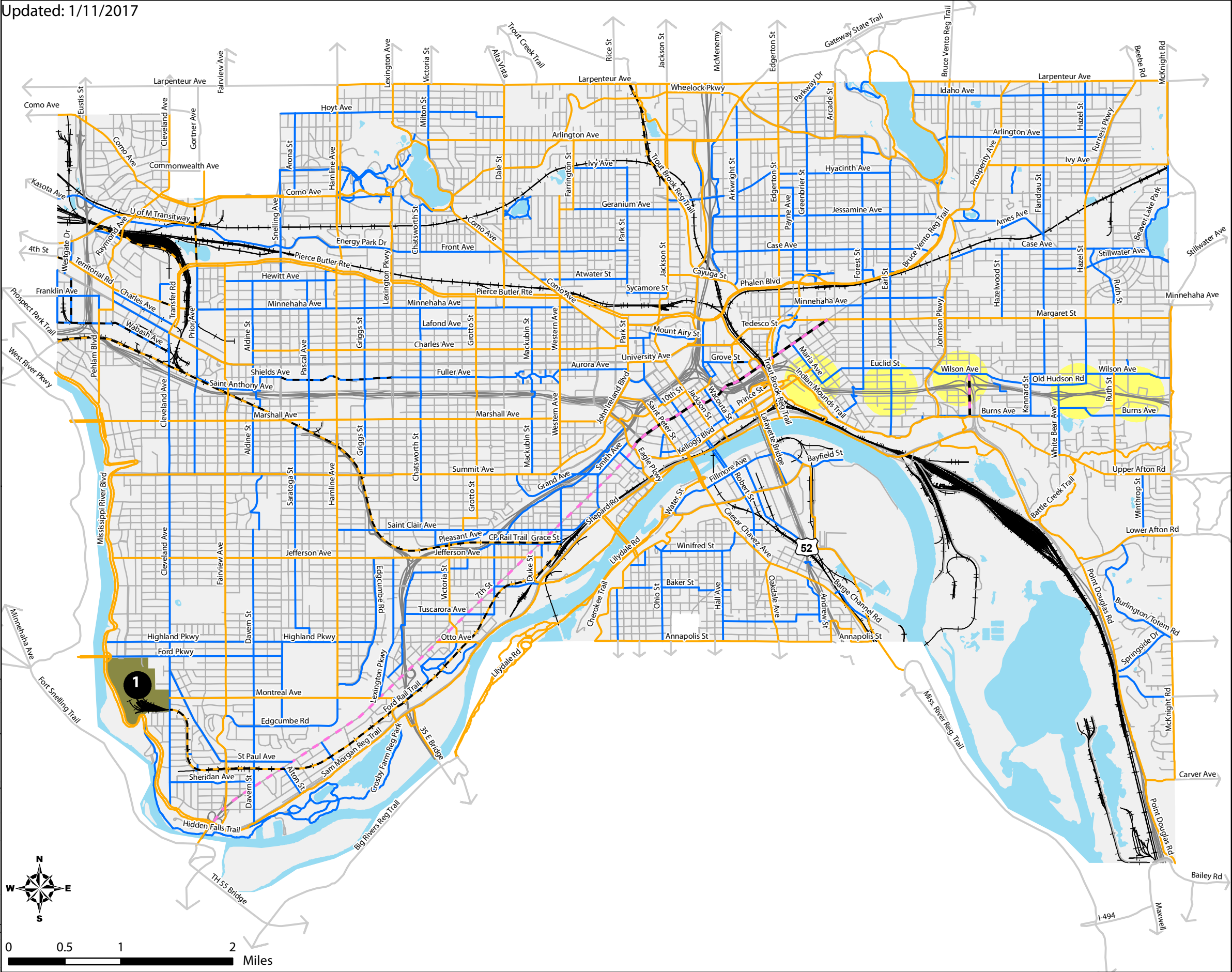
Legend

- Off-Street Path
- Bike Lane
- Shoulder
- Enhanced Shared Lane
- Bicycle Boulevard
- Freight Railroad

Note: This figure depicts the existing bicycle network as of March 2015.

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Figure 2
Existing (2015)
Bicycle Network



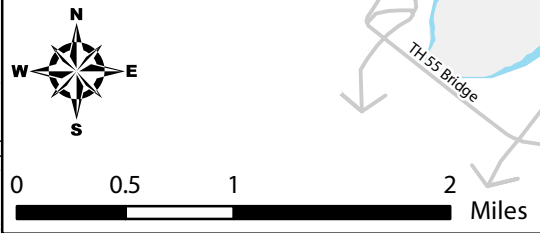
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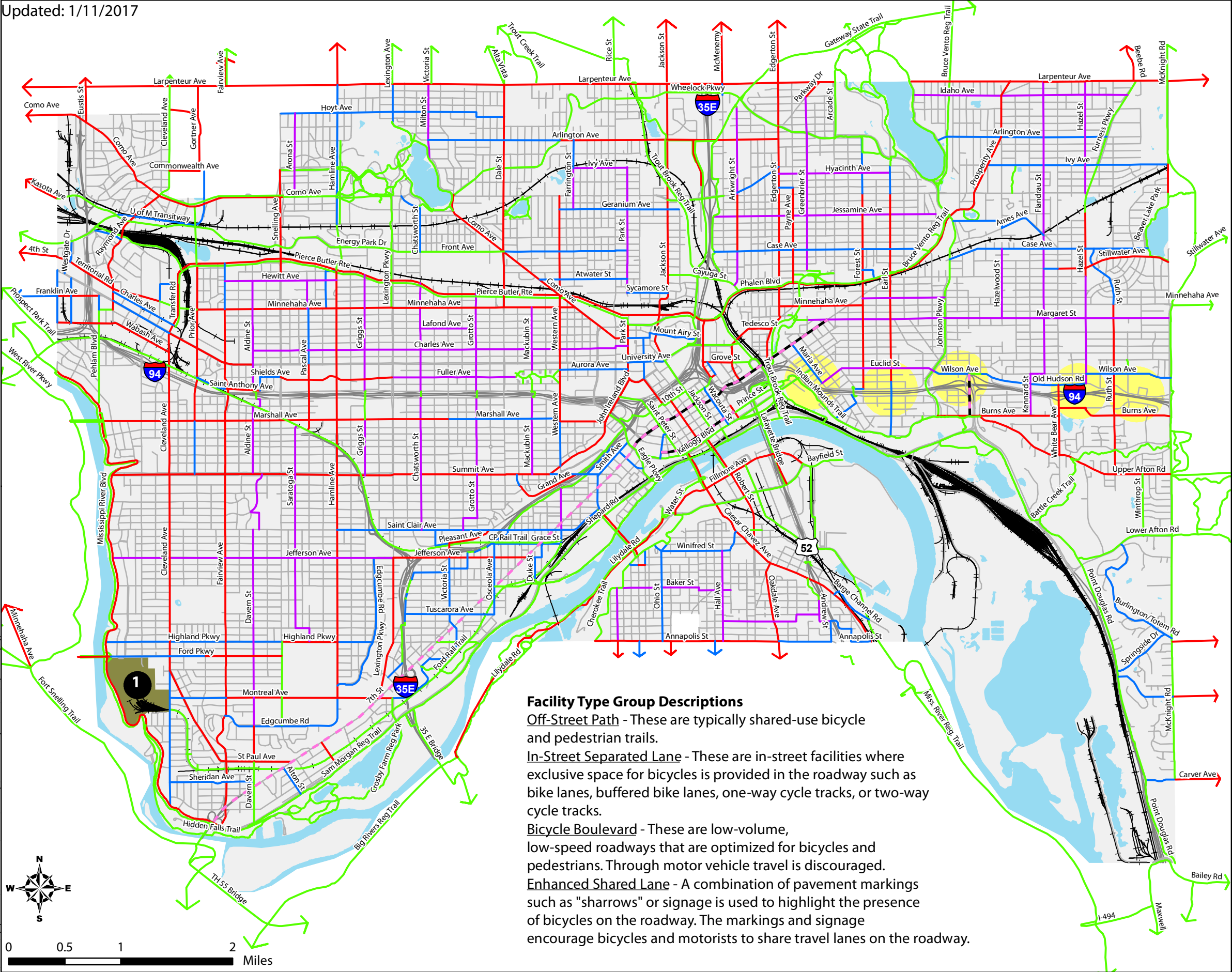
- Bicycle Network Functional Classification**
- Major Bikeway
 - Major Long Term Bikeway
 - Minor Bikeway
 - Minor Long Term Bikeway
 - Corridor for Additional Study
 - Corridor for Additional Study of Enhanced Shared Lanes
 - Area for Additional Study
 - Transit Station Connections
 - Freight Railroad

1 Ford Site - Bicycle facilities are to be planned in conjunction with other site planning related to anticipated redevelopment.

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Figure 3
Planned Bicycle Network Functional Classification





Legend

- Facility Type**
- Off-Street Path
 - In-Street Separated Lane
 - Bicycle Boulevard
 - Enhanced Shared Lane
 - Corridor for Additional Study
 - Corridor for Additional Study of Enhanced Shared Lanes
 - Area for Additional Study
 - Transit Station Connectors
 - Freight Railroad

1 Ford Site - Bicycle facilities are to be planned in conjunction with other site planning related to anticipated redevelopment.

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Facility Type Group Descriptions

Off-Street Path - These are typically shared-use bicycle and pedestrian trails.

In-Street Separated Lane - These are in-street facilities where exclusive space for bicycles is provided in the roadway such as bike lanes, buffered bike lanes, one-way cycle tracks, or two-way cycle tracks.

Bicycle Boulevard - These are low-volume, low-speed roadways that are optimized for bicycles and pedestrians. Through motor vehicle travel is discouraged.

Enhanced Shared Lane - A combination of pavement markings such as "sharrows" or signage is used to highlight the presence of bicycles on the roadway. The markings and signage encourage bicycles and motorists to share travel lanes on the roadway.

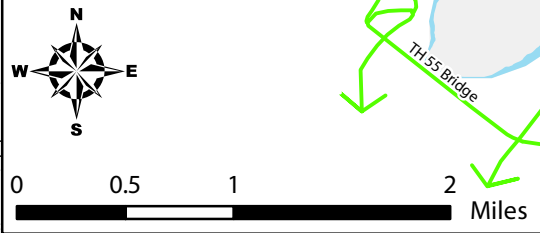
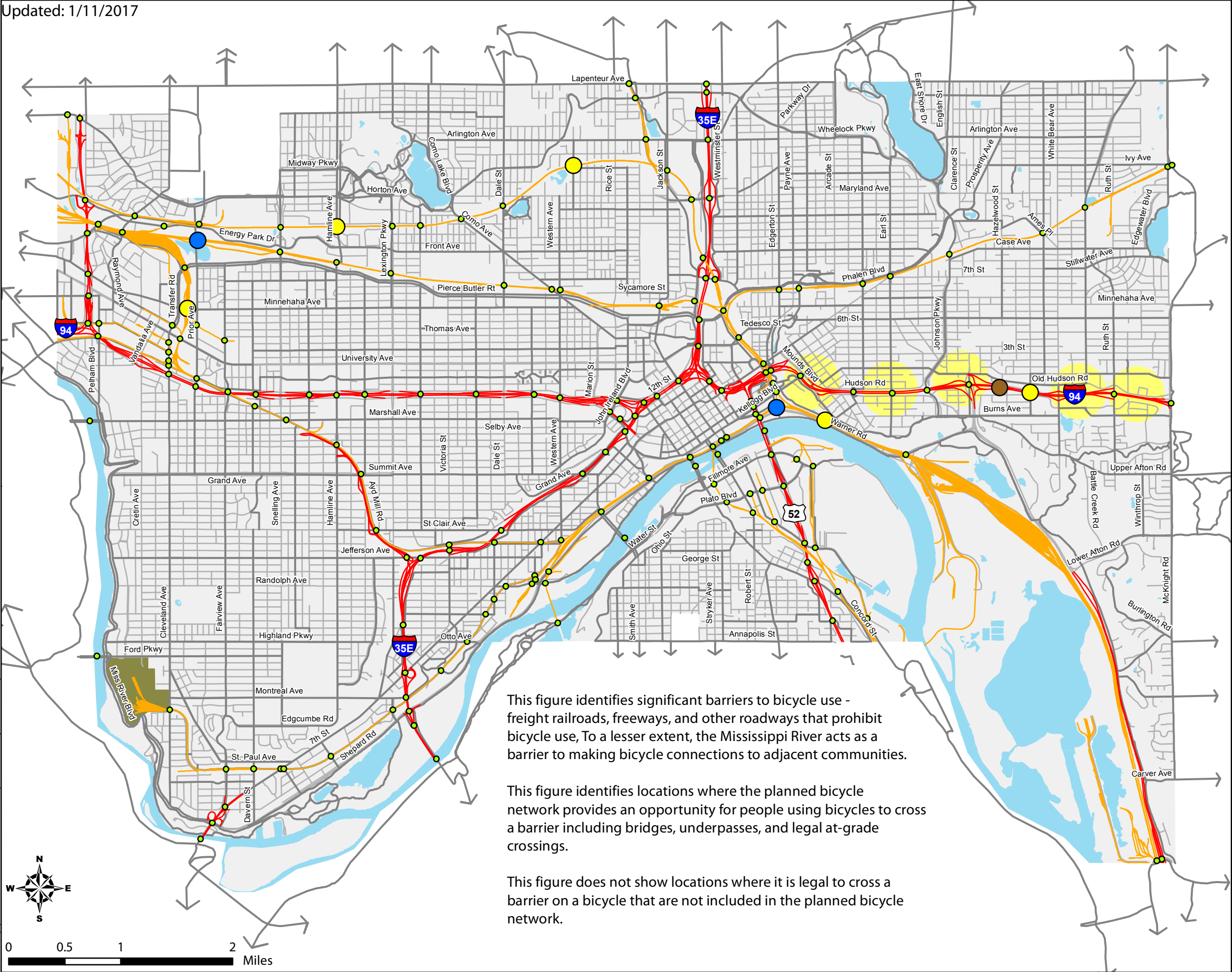


Figure 4
Planned Bicycle Network
Facility Type Group



Legend

Barrier Type

- Roadway - bicycles prohibited
- Freight Railroad
- Planned Bicycle Network
- Area for Additional Study
- Transit Station Connections

Crossing Type Description

- Existing Crossing
 - located on the existing or planned bicycle network
- Existing Crossing (1)
 - Crossing will be relocated
- Planned Barrier Crossing (5)
 - A new bicycle and pedestrian bridge or underpass will be developed
- Planned Barrier Crossing (2)
 - A new roadway bridge will be developed that will include an adjacent off-street path

This figure identifies significant barriers to bicycle use - freight railroads, freeways, and other roadways that prohibit bicycle use. To a lesser extent, the Mississippi River acts as a barrier to making bicycle connections to adjacent communities.

This figure identifies locations where the planned bicycle network provides an opportunity for people using bicycles to cross a barrier including bridges, underpasses, and legal at-grade crossings.

This figure does not show locations where it is legal to cross a barrier on a bicycle that are not included in the planned bicycle network.

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**Figure 5
Planned Bicycle Network
Barrier Crossings**

Legend

Regional Bicycle Transportation Network

- Tier 1 Alignment
- Tier 2 Alignment
- Tier 1 Corridor
- Tier 2 Corridor

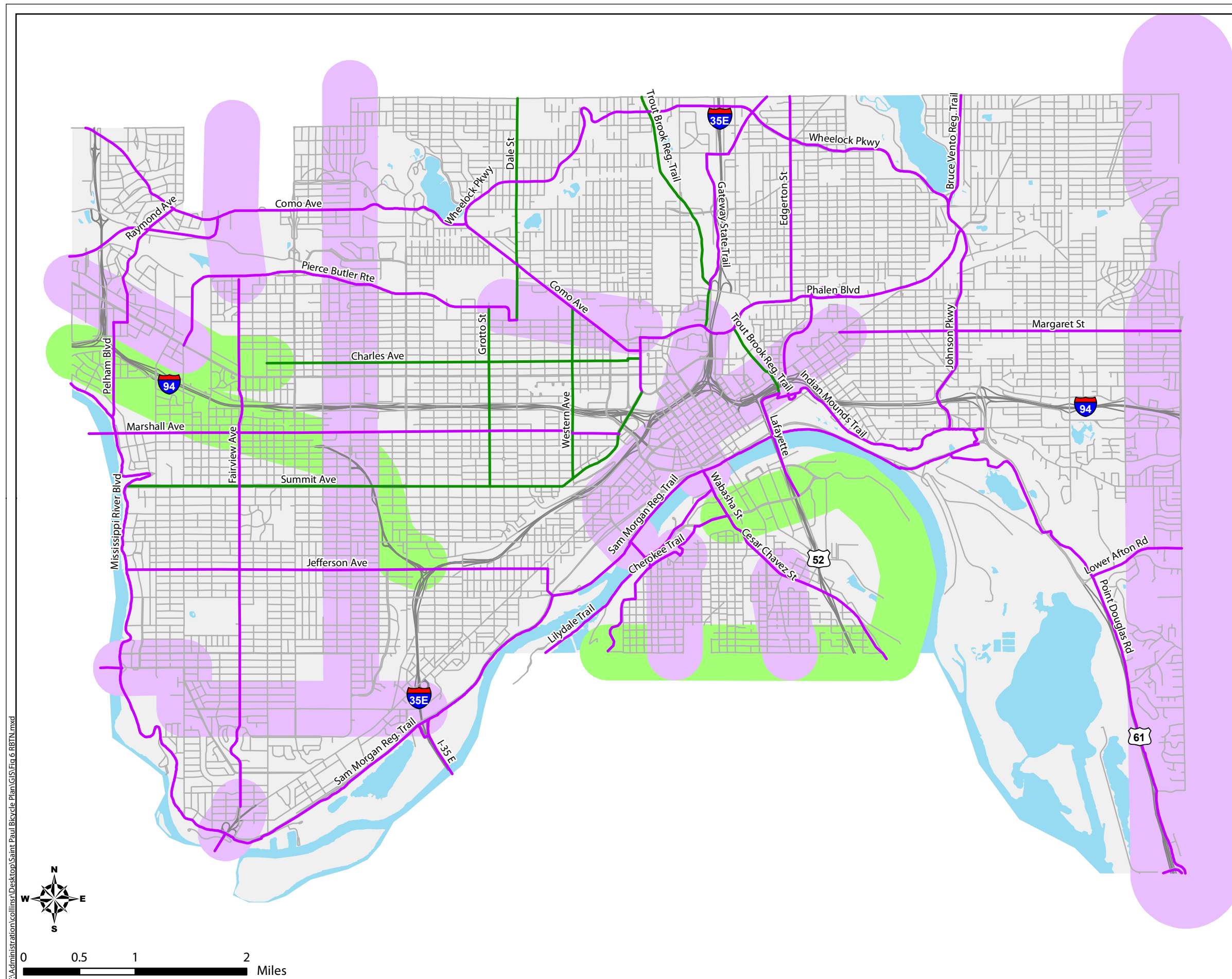
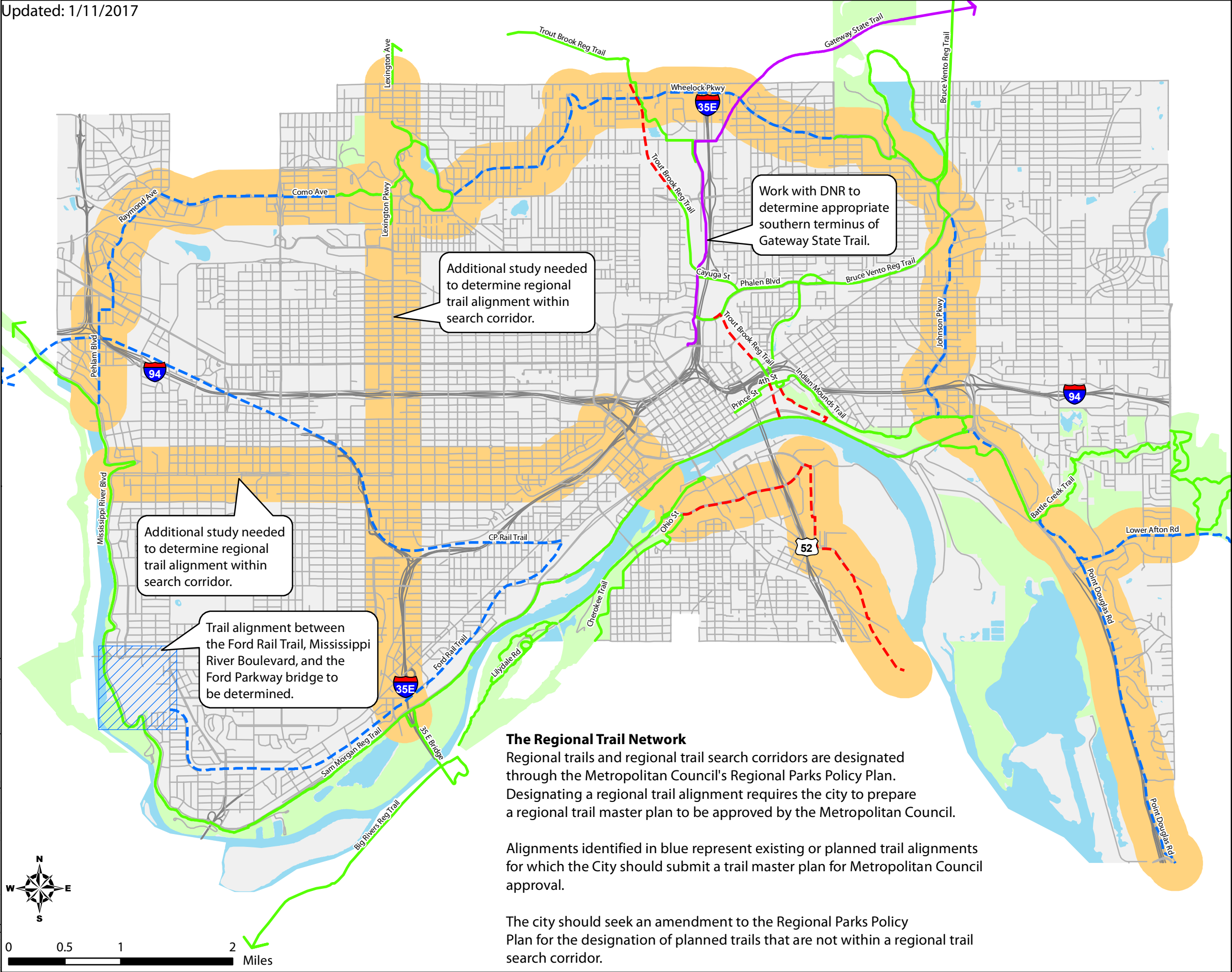


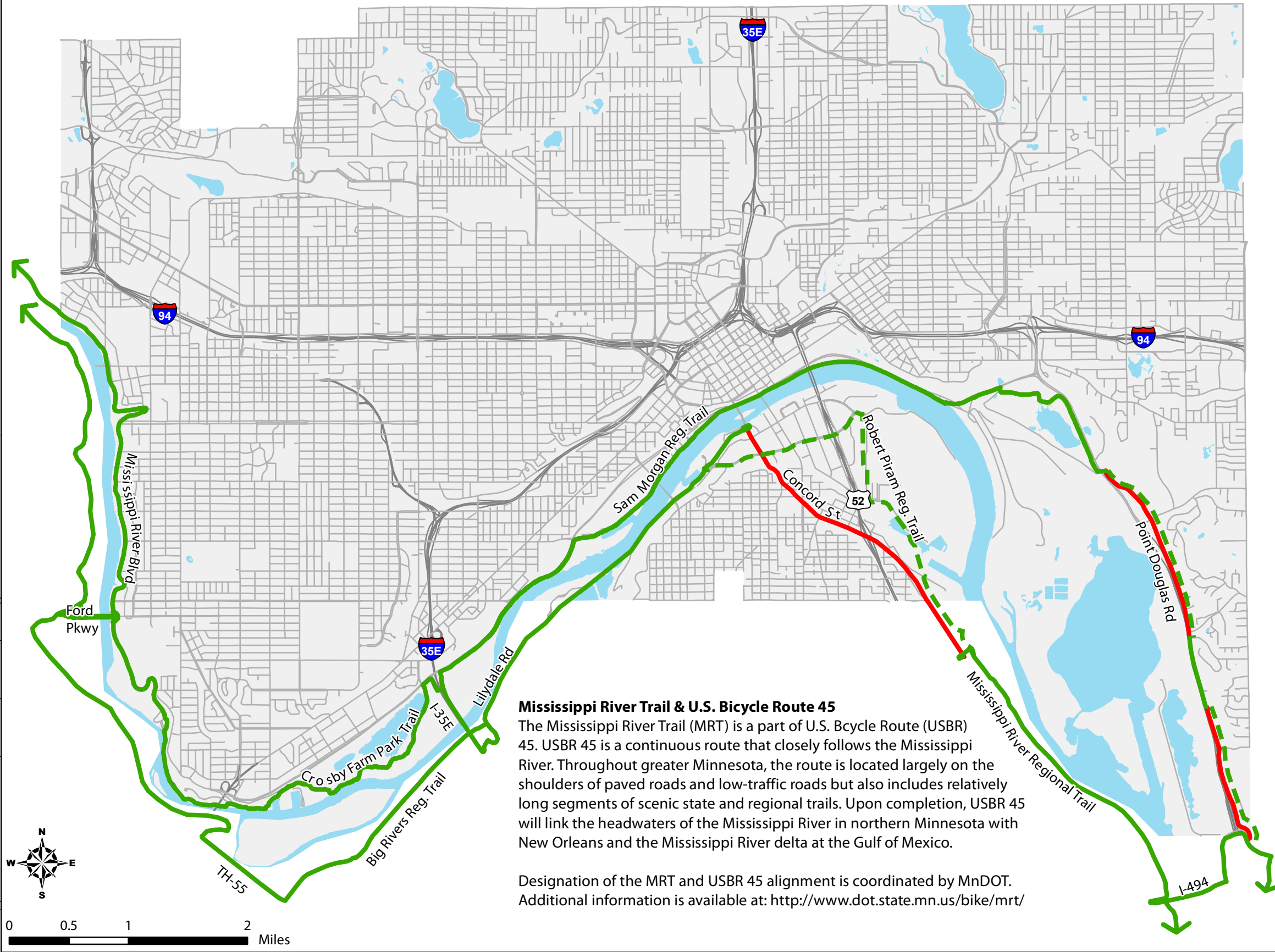
Figure 6
Regional Bicycle
Transportation Network



- Legend**
- Regional Trail Search Corridor
 - Regional Park
 - Existing Regional Trail or other Off-Street Path within a Regional Park
 - Planned Regional Trail with an approved Master Plan
 - Alignment to seek Regional Trail Designation through Master Plan Process
 - Gateway State Trail

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Figure 7
Existing and Planned
Regional & State Trails



Mississippi River Trail & U.S. Bicycle Route 45
The Mississippi River Trail (MRT) is a part of U.S. Bicycle Route (USBR) 45. USBR 45 is a continuous route that closely follows the Mississippi River. Throughout greater Minnesota, the route is located largely on the shoulders of paved roads and low-traffic roads but also includes relatively long segments of scenic state and regional trails. Upon completion, USBR 45 will link the headwaters of the Mississippi River in northern Minnesota with New Orleans and the Mississippi River delta at the Gulf of Mexico.

Designation of the MRT and USBR 45 alignment is coordinated by MnDOT.
Additional information is available at: <http://www.dot.state.mn.us/bike/mrt/>

- Legend**
- Off-Street Path
 - In-Street Route
 - Planned Off-Street Path

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Figure 8
Mississippi River Trail
(U.S. Bicycle Route 45)