Twin Cities Regional Bicycle System Study

METROPOLITAN COUNCIL

Final Report
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1. Project Overview

The Twin Cities Regional Bicycle System Study (the "Study") is designed to deepen understanding of the bicycle component of the regional transportation system and improve the knowledge base of the role of bicycling for the region's 2040 Transportation Policy Plan (TPP) update. This includes a better understanding of how on-street bikeways and off-road trails interact to serve regional transportation trips. The Study results will inform the TPP process in setting regional priorities for planning and investments in bicycle transportation.

The current TPP addresses increasing connectivity and removing barriers for bicycle travel and has a primary focus on policy without defining a network or bicycle transportation system. This Study is the first step in defining a regional bicycle transportation system and developing a network approach to bicycling investments at the regional level.

The intent of the Regional Bicycle Transportation Network is to encourage planning and implementation of future bikeways. The result will be a seamless network of on- and off-road facilities that will improve conditions for regional bicycle transportation.

The Study will also inform aspects of MnDOT bicycle planning efforts, especially the MnDOT Metro District Bicycle System Plan to be completed in 2014. To increase coordination, MnDOT planners were a part of the Project Management Team (PWT) for the Study, and the MnDOT Bicycle and Pedestrian Coordinator had a seat on the Study's Project Advisory Committee (PAC).

1.2 Study Scope

Specifically, this Study provides a more complete understanding of how the regional bicycle transportation network functions, particularly with respect to on-road routes and facilities. The focus of this Study is to examine the transportation function of the bicycle network, with an understanding that significant segments of multi-use, recreational off-road trails in the Twin Cities can often serve purposeful transportation trips by connecting key regional destinations. This Study used local data and stakeholder input to guide a process that:

- Identified key regional bicycle destinations.
- Developed guiding principles to define the roles for regional bicycle corridors and regional critical links.
- Identified a set of regional bicycle transportation corridors.
- Proposed a framework for monitoring the performance of the regional bicycle transportation system on an ongoing basis.

1.2 Structure of this Report

This report is divided into sections as described below.

Section 1 is the Project Overview.

Section 2 describes the *existing conditions* for bicycling in the Twin Cities and the *planning environment* in which this Study is being performed.

Section 3 provides a summary of the *agency and public input* received over the course of the Study.

Section 4 provides an overview of the *process used to develop and analyze the proposed Regional Bicycle Transportation Network*. This section describes the creation of the initial network and how data and

stakeholder input were used to analyze and refine the proposed regional bicycle network. This includes the process of developing the *guiding principles* for the regional bikeway network, the *network scoring and prioritization process*, and research on network corridor spacing and refinements made to the draft network.

Section 5 presents the Study outcomes including proposed *priority corridors* for the Regional Bicycle Transportation Network. Network corridor segments were evaluated against criteria based on the guiding principles outlined in Section 4.

2. Background and Existing Conditions

2.1 Evolution of Bicycling in the Twin Cities Region

Bicycling has long been an important part of the civic culture in the Twin Cities region. Bicycles were first introduced in the late 1800s, and by the early part of the 20th century, there already were bicycle paths through several parts of the urban core of Minneapolis and Saint Paul – both within parks, and along major streets.

Minneapolis has always been a leader in providing infrastructure needed to support bicycling. As early as 1896, the city constructed on-street bicycle facilities along arterials like Lake Street. The city's Grand Rounds park system - set aside around the turn of the 20th century - has provided a perfect venue to establish and expand an attractive off-road bikeway system. In the 1970s, paved off-road trails were completed throughout the 55-mile loop. Minneapolis, along with other communities in the Twin Cities region, began to designate on-road bicycle routes.

The Twin Cities benefit from a rich history of investing in trails for both recreation and transportation.

Recent decades have seen a proliferation of new trails in the region. Abandoned railroad rights-of-way have been converted to trail use throughout the Twin Cities, starting with the Luce Line State Trail, which was constructed in 1977. In the 1990s, a number of influential rails-to-trail conversions opened, including:

- Cedar Lake Trail from downtown. Minneapolis to the west suburbs, often dubbed the first "bicycle freeway" in the US.
- U of M Transitway between the Minneapolis and Saint Paul campuses.
- Gateway State Trail from Saint Paul to the northeast suburbs.
- A multi-use trail on the historic Stone Arch Bridge over the Mississippi River in downtown Minneapolis.

Minneapolis and Saint Paul began substantial efforts to implement on-road bicycle lanes in the late 1990s, including Park and Portland Avenues south of downtown Minneapolis and Summit Avenue through Saint Paul. A number of new bicycling projects were made possible as federal transportation funding began making more funds available for bicycle infrastructure, starting with the Intermodal Surface Transportation Equity Act (ISTEA) in 1991.

By the early 2000s, the region's bicycling infrastructure became interconnected, as many cities have built out a full range of bicycling infrastructure. Minneapolis' Midtown Greenway opened in 2000, and Saint Paul's Sam Morgan trail along the downtown riverfront opened in 2002. Meanwhile, cities and counties across the Twin Cities began designating bike lanes, bike boulevards, and other bicycle-

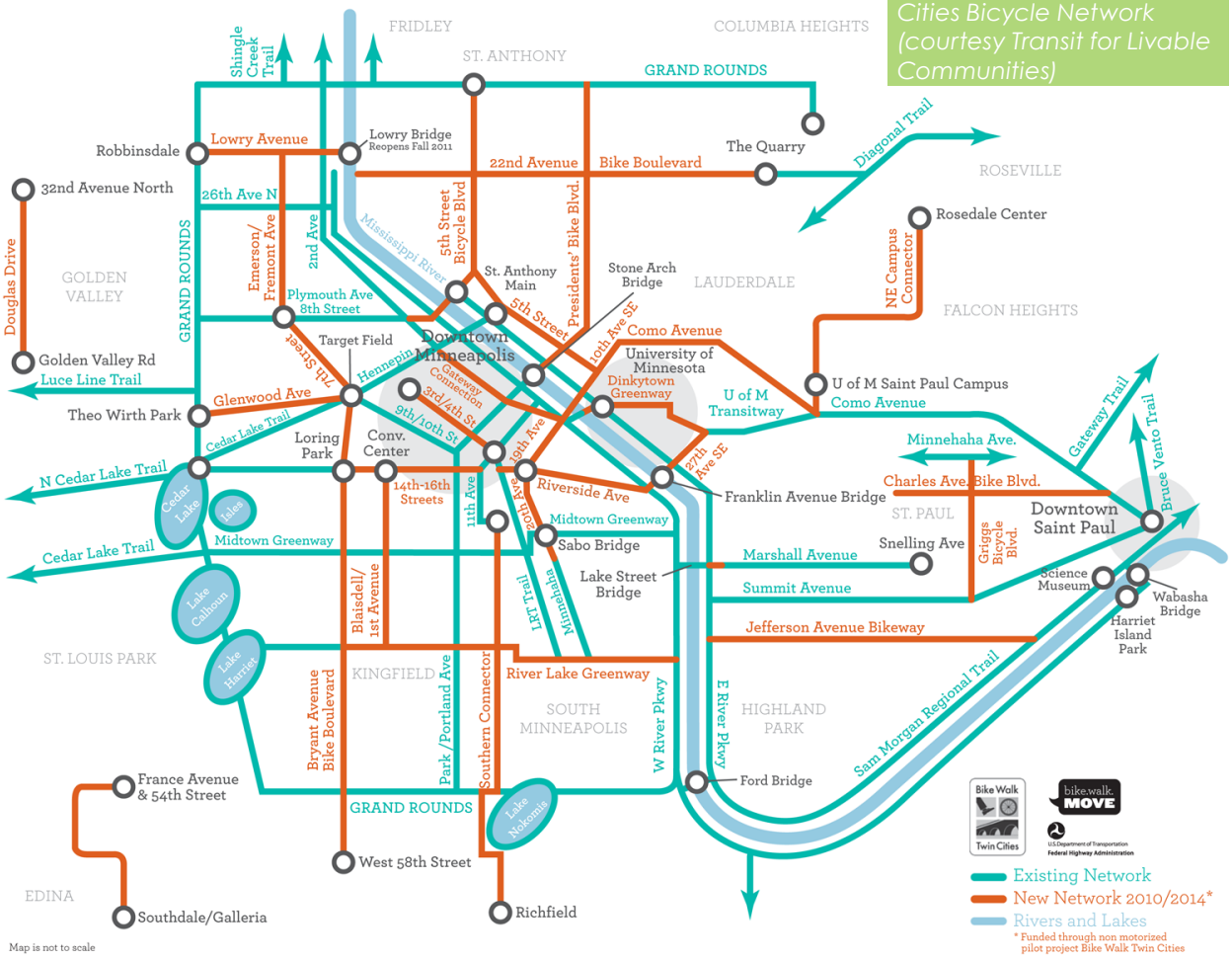


Figure 2- Bike Walk Twin Cities Bicycle Network (courtesy Transit for Livable Communities)

specific facilities to accommodate the full range of users and destinations by bicycle. Government agencies at the state and local levels have increasingly undertaken planning for new bicycle facilities, and have designated staff positions to bikeway planning and implementation.

Recent years have built on previous momentum. In 2005, Minneapolis was selected as one of four pilot communities to receive special funding through the federal Non-Motorized Transportation Pilot Program (NTPP[1]) which was known locally as Bike Walk Twin Cities and administered by Transit for Livable Communities (Figure 2). The NTPP earmarked over $25 million for bicycling and walking investments targeted at Minneapolis and adjacent communities. Full build out of the NTPP program investments have resulted

Figure 3 - The Nonmotorized Transportation Pilot Program NTPP added 75 miles of new bicycle facilities, including Franklin Avenue in Minneapolis.

1 *The Nonmotorized Transportation Pilot Program (NTPP) SAFEATEA-LU Section 1807* http://www.fhwa.dot.gov/environment/bicycle_pedestrian/ntpp/

Table 1- 2012 Bicycle Commute Mode Share based on American Community Survey (ACS)

American Community Survey (ACS)	Bicycle Commute Mode Share 2012	Rank	Bike Friendly Status
Minneapolis, MN	4.5%	2	Gold
Saint Paul, MN	1.4%	17	Bronze
70 largest cities average	1.2%	n/a	n/a
National Average	0.6%	n/a	n/a

in the implementation of many recognizable new bicycle innovations, including 75 new miles of bicycle facilities (almost entirely on-road) and the first large-scale urban bicycle sharing program. The program, Nice Ride Minnesota, began operations in Minneapolis in 2010, and now operates in both Minneapolis and Saint Paul with over 1,400 bicycles available at 175 locations. The Nice Ride program has served as a national model for bike sharing.

In 2011, the Minnesota segment of the Mississippi River Trail (MRT) bikeway was designated as Minnesota's first state bikeway and became the first signed and completed segment of the United States Bicycle Route System.

Despite the challenge of having a cold climate, the Twin Cities consistently ranks highly in the US for bicycling's share of travel, and for its infrastructure (Table 1). According to the League of American Bicyclists, both Minneapolis and Saint Paul rank in the top 20 among the 70 largest US cities in percentage of bicycling commuters identified in the Census Bureau's American Community Survey (Minneapolis is currently ranked 2nd behind Portland, Oregon). The League of American Bicyclists has also recognized both cities with the Bicycle Friendly Community (BCF) designation and in 2013 added the city of Richfield to the BCF list. Minneapolis is one of only four major cities in the United States to achieve Gold status (Saint Paul and Richfield have both achieved bronze).

2.2 Planning Landscape

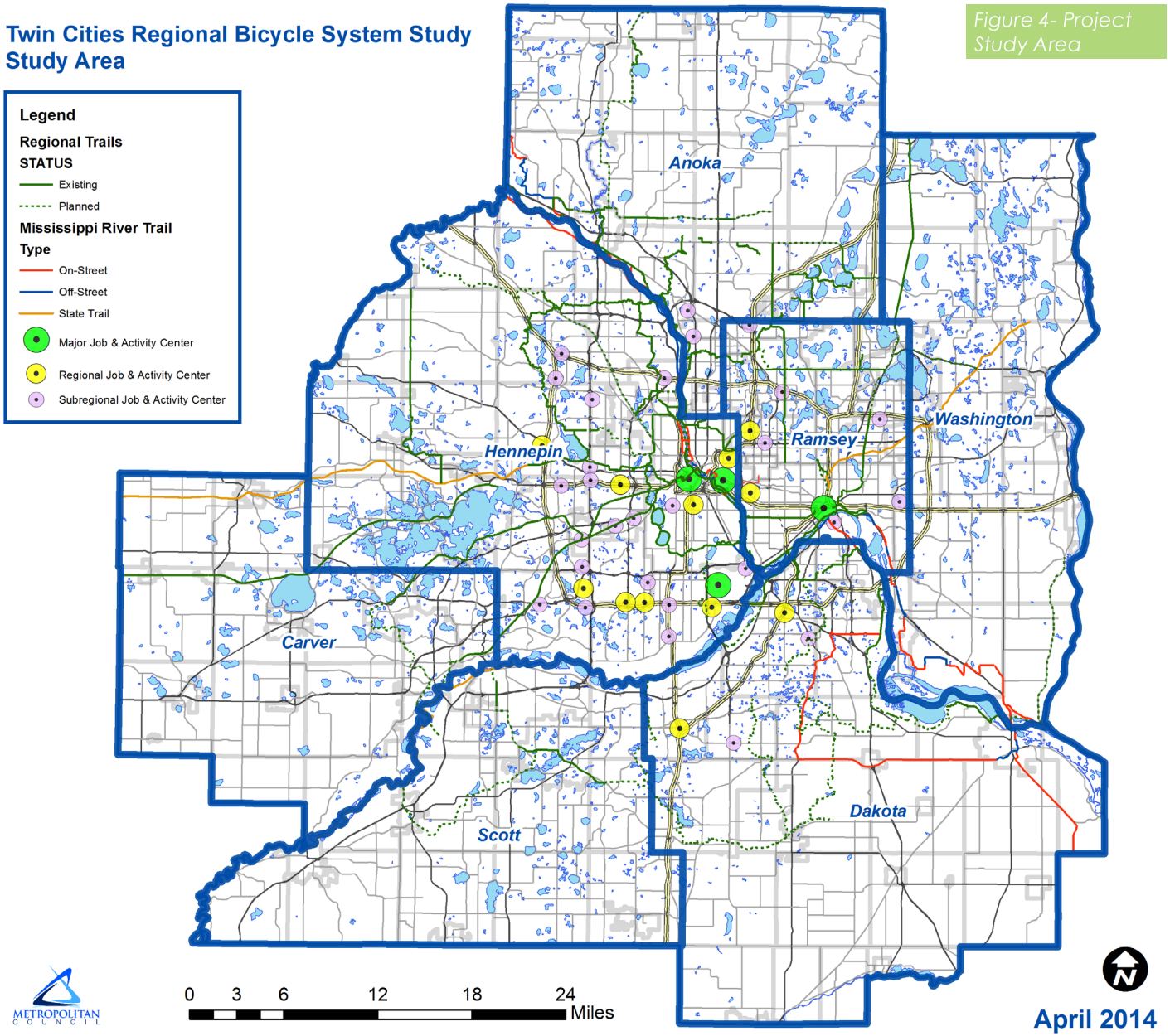
2.2.1 Transportation Policy Plan (TPP) and Other Planning Efforts

This Study is designed to help shape the future of bicycling in the seven-county metropolitan region (Figure 4) through a number of channels, but most significantly via the Twin Cities' Transportation Policy Plan (TPP). The Twin Cities' TPP guides decisions and investments in regional transportation infrastructure, including highways, transit, freight, pedestrians, bicyclists, aviation, and overall mobility. The Plan was last updated in 2010. Federal transportation policy requires that it be updated every four years.

As the federally designated Metropolitan Planning Organization for the Twin Cities metropolitan area, the Metropolitan Council, is responsible for updating the region's long-range TPP. The 2040 TPP update is being developed in conjunction with the update for the region's long-range development plan, known as Thrive MSP 2040.

The Metropolitan Council, guided by local partners on the Transportation Advisory Board, allocates federal funding for regionally significant transportation projects for all transportation modes. These projects become part of the region's four-year Transportation Improvement Program (TIP), updated at least every two years. These updates include engagement of a wide range of interested public stakeholders.

Figure 4- Project Study Area



The Regional Bicycle System Study originates from the work program adopted as part of the 2030 TPP. According to the 2030 TPP, this Study is to be "an analysis of existing conditions, connectivity and levels of use of the bikeway system with a special emphasis on connectivity to regional transitways and major travel generators" (2030 TPP, page 247). The results of this Study will provide the technical basis for updating the bicycling component of the region's TPP update, to be completed in 2014.

Several other planning efforts will help define the future of bicycling in and around the metro area, and this Study is expected to help inform these related planning efforts.

Regional Trails Planning:. Regional trails are designated by the Metropolitan Council as part of the regional parks system. The Metropolitan Council oversees long range planning and provides funding assistance for the acquisition and development of regional parks and trails. The regional parks system is owned and operated by 10 partner agencies: the counties of Anoka, Carver, Dakota, Ramsey, Scott and Washington; the cities of Bloomington and Saint Paul; the Minneapolis Park and Recreation Board and Three Rivers Park District.

Regional trails are identified in the 2030 Regional Parks Policy Plan as linking trails and destination/greenway trails. Linking regional trails are typically off-road facilities that connect regional parks and trails to one another. These trails are primarily located in the developed or developing areas of the region. Destination, or greenway, regional trails are adjacent to high quality natural areas and may follow waterways such as rivers, streams or lakes, where the trail itself is a destination.

Regional trails are an important component reviewed in this Study, since regional trails may provide both a transportation and a recreation function. The proposed regional bicycle network includes portions of the regional trail system, particularly where regional trails serve to most efficiently connect regional destinations. Although regional trails may serve recreational cyclists and commuters, they are not exclusive bikeways. The regional trail system is intended to be multi-use and is available to bicyclists, pedestrians and inline skaters. Therefore, not all regional trails are included in the regional bicycle transportation network.

Thrive MSP 2040. The Metropolitan Council's long-range regional development framework plan is updated every ten years. The Thrive MSP 2040 plan was adopted by the Metropolitan Council in the spring of 2014. Thrive MSP 2040 sets the overall policy framework for the region's three systems plans, including the Transportation Policy Plan.

Minnesota Statewide Bicycle System Plan.
In 2013-2014 MnDOT updated their plan for the statewide bicycle system as part of its Minnesota GO family of transportation plans. The Statewide Bicycle System Plan includes an inventory of existing conditions and a proposed plan for the future of the state bicycle system. Specific plans are developed for each of the eight MnDOT districts, and this Study informed the Metro District Bicycle System Plan in identifying regional priorities.

2.2.2 Primary Data Sources

This Study relied extensively on Geographic Information Systems (GIS) for mapping and analysis to develop and evaluate the proposed Regional Bicycle Transportation Network. Data from many sources were collected and assessed for potential use and analysis including data provided by the Metropolitan Council and local and state agencies. The following datasets were used in

network development:

- Metro Bikeways (2007, Metropolitan Council)
- Regional Trails, existing and planned (10/14/2013, Metropolitan Council)
- Cyclopath user request origin and destination data (12/2012, University of Minnesota)
- Planned Land Use 2030 (2010, Metropolitan Council)
- Regional job and activity centers (2010, Metropolitan Council)
- Metro Transit Transitways and Stations (2013, Metropolitan Council)
- Other key destinations such as regional parks, colleges and universities and major sports and entertainment destinations (various existing data sources)

Additionally, new data was generated during the Study process reflecting public input from the focus groups, workshops and on-line mapping tool. A list of all data sets available, as well as more specific information and descriptions of each of the data sets are provided in Appendix A.

2.2.3 Existing Plan Review Findings

The plan review documented criteria used to define existing bicycle corridors within the region. Existing plans reviewed included the Metropolitan Council's 2030 Transportation Policy Plan, bicycle and/or transportation plans from each of the seven metro counties, various metro area cities, and MnDOT's Statewide Bicycle Planning Study (completed in 2013) that laid the ground work for their twenty-year Statewide Bicycle System Plan.

Overall, the criteria documented in the plans include:

- Qualitative measures for defining trail and bikeway corridors, (e.g., links between origins and destinations, improved access to transit, continuous connections between communities, connections between on-road bikeways and off-road trails, removal of barriers and gaps, and directness of routes).
- Quantitative measures regarding the type and spacing of bikeway facilities, as identified in both the Minneapolis Bicycle Master Plan and the Saint Paul Transportation Plan. Bloomington's Alternative Transportation Plan strongly advocates that the quality of bicycle facilities should take precedence over quantity.
- Geographic considerations based on roadway function, jurisdiction, and ownership (e.g., principal or minor arterials, public rights-of-way along roadways and rail corridors, high use corridors, and parallel local streets).
- Trip purpose (e.g., purposeful transportation including commute and errand trips or recreational trips).

Appendix A provides a comprehensive list of all the major criteria used in defining bicycle corridors that were documented in these plans.

3. Agency and Public Input

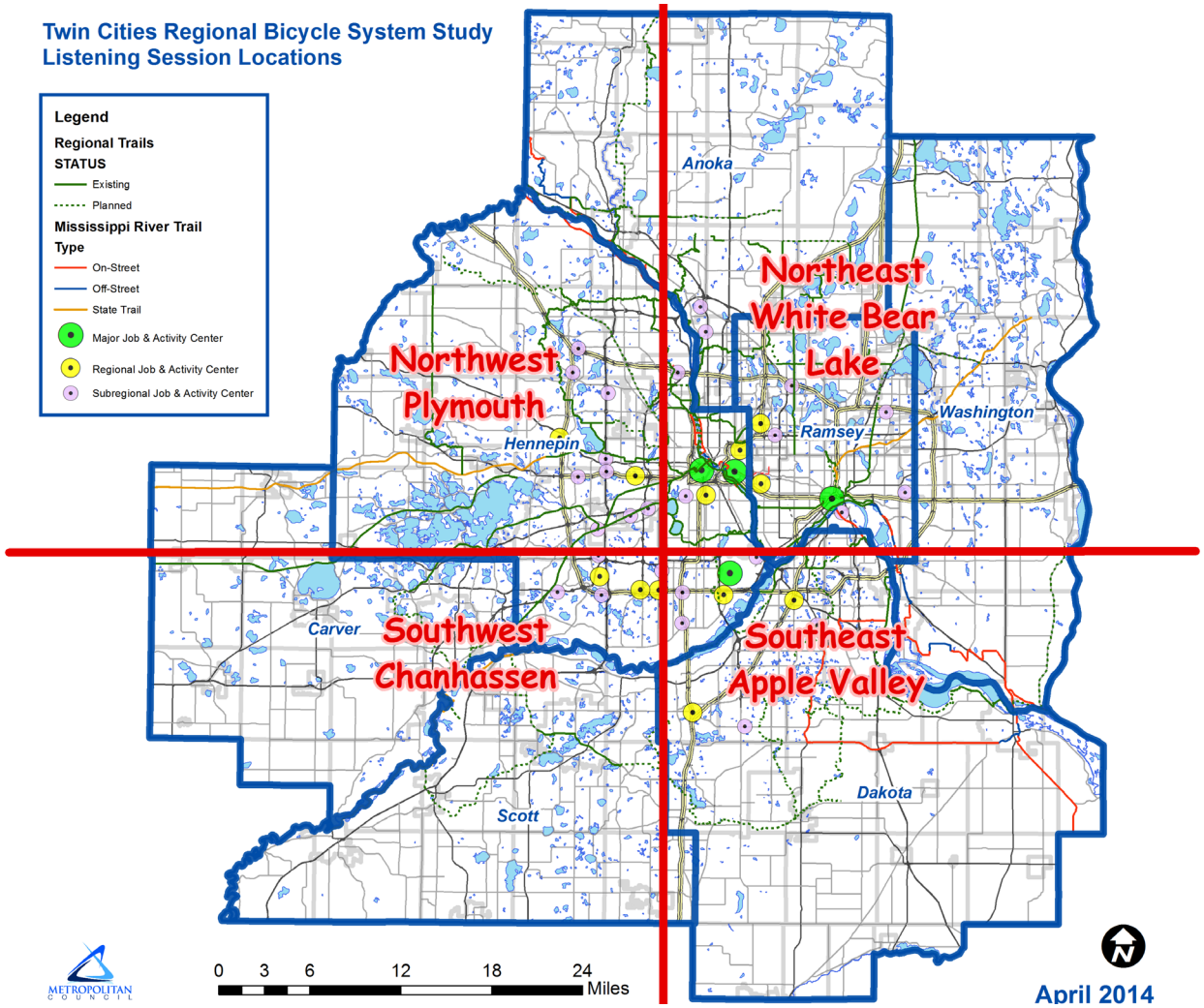
This Study was conducted under the direction of the Metropolitan Council and in collaboration with MnDOT. It was informed by a number of stakeholders as well as existing plans for the region.

3.1 Agency Input

The work effort included a Project Management Team (PMT) and a Project Advisory Committee (PAC). The PMT was comprised of staff representing several departments of the Metropolitan Council, Metro Transit, and MnDOT. This team provided ongoing direction to the consultant team throughout its duration. The PAC was comprised of agency staff from cities, counties, regional and state government, as well as key stakeholders with bicycling

Figure 5 - Listening Session Participants identify regional destinations on a map

Figure 6 - Four Region Quadrants for Listening Sessions



Twin Cities Regional Bicycle System Study
Mapped Public Feedback

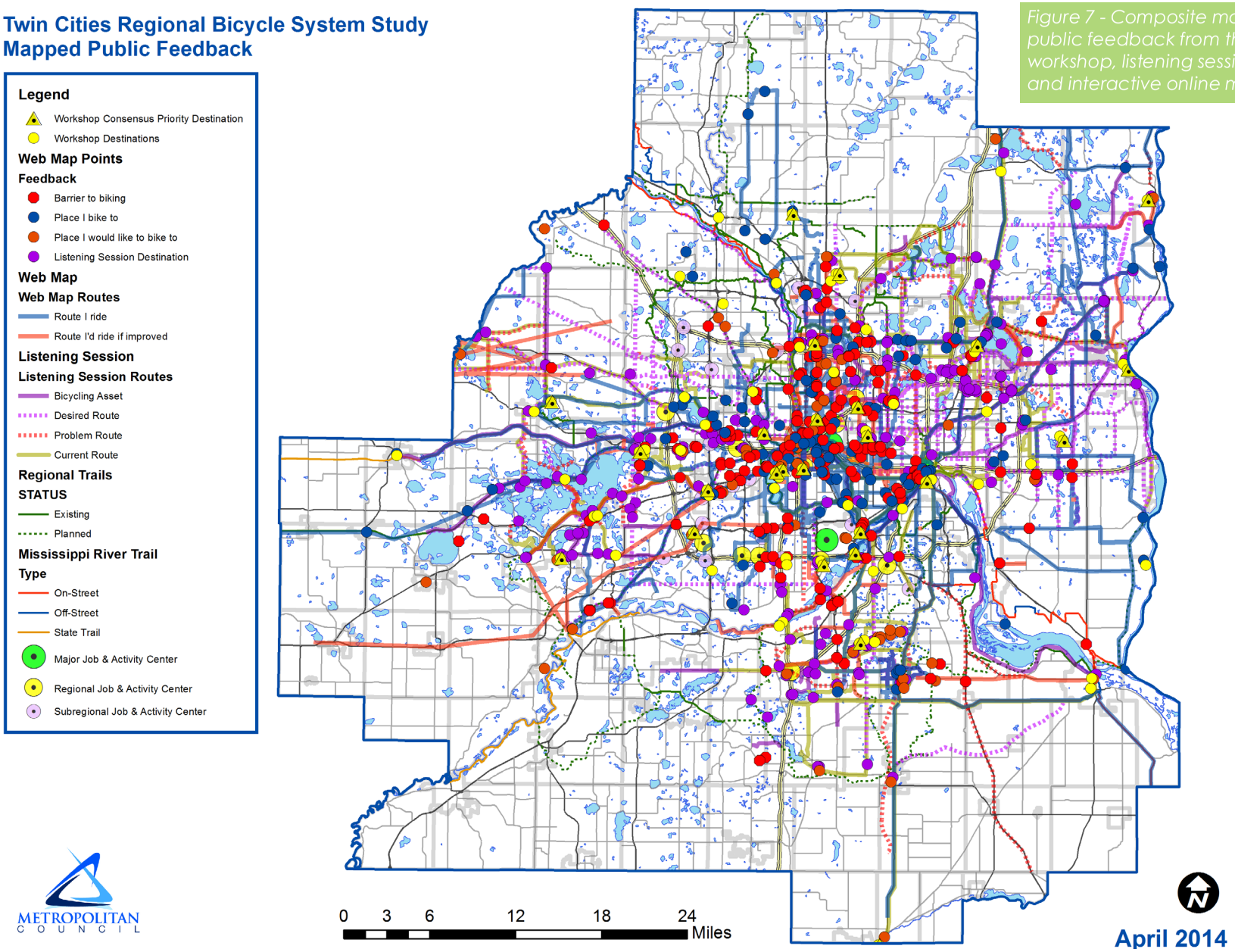


Figure 7 - Composite map of public feedback from the workshop, listening sessions and interactive online map

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interests or expertise. The PAC met five times during the Study's duration and played a valuable role in providing essential feedback to the project at critical junctures. Agencies represented on the PAC are listed in Appendix D.

3.2 Public Engagement

Members of the public were engaged in a number of ways, including focus group listening sessions and public workshops. On-line engagement included an interactive mapping tool that allowed the public to provide input on specific destinations and routes across the region from those who may not attend a meeting or workshop.

Listening Sessions. Four listening sessions were hosted in outlying suburban areas of the metropolitan area (Figure 5 and Figure 6) in April 2013 with a geographically targeted list of invitees. The outreach effort focused on reaching members of cycling clubs and residents with significant local knowledge of cycling conditions, routes, and barriers throughout the local area.

On-line feedback. Public feedback was collected on-line through a project page on the Metropolitan Council website[2]. The page included an interactive map that allowed people to document regional bicycle destinations and routes they currently use, or identify barriers to bicycling and/or routes that would be used if conditions were improved (Figure 7).

Public workshops. Two sets of public workshops were held during the project.

The first round of workshops were held in June/July of 2013 in Saint Paul and St. Louis Park, respectively. These workshops focused on prioritizing guiding principles for the regional bikeway system, and gathering input on significant regional destinations. The guiding principles are discussed in detail in Section 4.

The second round of workshops were held in October 2013 in Saint Paul and Minneapolis. These workshops provided an opportunity for stakeholders to review preliminary findings and provide feedback on the draft Regional Bicycle Transportation Network and Priority Regional Bicycle Transportation Corridors discussed in Section 4 (Figure 8).

A full summary of the public engagement process can be found in the Community Engagement Report (Appendix B).

Figure 8 – Workshop participants review draft recommended corridors

2 http://www.metrocouncil.org/Transportation/Planning/Transportation-Resources/Regional-Bicycle-Master-Study-Introduction.aspx

4. Development of Proposed Regional Bicycle Transportation Network

The development of a Regional Bicycle Transportation Network was a central focus of this Study. The project team conducted an extensive review of major bicycle plans already adopted by local governments to gather input on local definitions and categories for bicycle corridors at the community level.

4.1 Defining the Regional Bicycle Transportation Network and Priority Regional Bicycle Transportation Corridors

The Regional Bicycle Transportation Network is intended to act as an arterial system for bicycling in the region and is composed of two network tiers (defined below) that are supplemented by Critical Bicycle Transportation Links (defined in Section 4.2).

The Regional Bicycle Transportation Network is intended to represent a specified set of bicycle corridors and existing and planned alignments, but not specific facility types. In some cases corridors are identified along a known existing or planned alignment; however, the corridors are intended to be conceptual bands varying in width from a ½-mile in the core cities to 1-mile in the surrounding suburbs and outlying rural areas. They are not intended to reflect specific alignments or facility types as they offer local planners flexibility to determine what will work best from a context-sensitive perspective.

Ultimately, within each corridor, there are a range of facilities that can be constructed to meet the goals of the Regional Bicycle Transportation Network. The Metropolitan Council conducted a series of corridor refinement meetings with agency staff from each of the seven counties in early 2014 with the aim of identifying specific alignments where consensus could be reached about planned or existing bicycle routes within the network. These specific alignments are identified along with bandwidth corridors in the final proposed network in Section 5 of this Study report.

Definition: Regional Bicycle Transportation Network and Priority Regional Bicycle Transportation Corridors

Regional Bicycle Transportation Network. The entire set of proposed network corridors or facilities that serve as the "backbone" arterial system that will connect city and county bikeways with regional destinations.

Priority Regional Bicycle Transportation Corridors. A subset of the Regional Bicycle Transportation Network that have been identified as high priority based on the network scoring (described in Section 5.3) and the degree to which the corridors connect population centers with key regional destinations and the regional transit system. The "priority" corridors or designated alignments are intended to serve the highest potential bicycle demand based on the Met Council's urban/suburban development context reflecting the existing and planned population and employment densities in the region.

4.2 Defining Critical Bicycle Transportation Links

The Regional Bicycle Transportation Network proposed in this Study is not designed to be an all-inclusive bicycle transportation system. The regional system will only maximize its potential if it is built out as planned, and if the local bicycle infrastructure provides strong and seamless connections to the regional network.

There are several types of barriers that can disrupt the connectivity of the Regional Bicycle Transportation Network and isolate communities and key destinations. The links to overcome these barriers are referred to as *Critical Bicycle Transportation Links* for this Study. Defining these critical links may help to facilitate the assessment of project proposals seeking regional funding through the regional solicitation process as directed by the Transportation Advisory Board.

Through the Study process the following definition was developed to provide solid direction for communities to identify and address system gaps where project solutions could be characterized as critical linkages.

Critical Bicycle Transportation Links
Perform one or more of the following functions:

- Serve to close a gap in the regional network
- Improve continuity and connections between jurisdictions (on or off-network)
- Remove a physical barrier (on or off-network)

Serve to close a gap in the regional network. This Study includes a regional network of bikeway corridors and alignments that are proposed for inclusion in the TPP. Gaps in the existing regional network could be addressed in two ways:

- Improving bikeability within a Regional Bicycle Transportation Network corridor to better serve all bicycling skill and the wide variety of experience levels within the corridor.
- Building a short (up to a 1/4-mile) but critical local link to or within a major regional destination, or to a major transit-oriented development on the regional transit system, or to a large transit center.

Improve continuity and connections between jurisdictions. To some extent, each local government in the Twin Cities has employed their own approach to the provision of bicycle infrastructure. In some cases, a bikeway may extend to one city's border, and not carry through into the next city or county. Creating a more consistent, continuous and connected set of bicycle facilities will improve access to, and the overall bikeability of, the regional network.

Removing a physical barrier. Crossing major physical barriers are a significant challenge in providing bicycle infrastructure. These barriers can be both natural and man-made such as major railway corridors, rivers and waterways, freeways and multi-lane arterials.

Projects that remove or provide more bikeable options around physical barriers can arise in a number of ways. Planning work may underscore the need for a bikeway to cross a major barrier. Additionally, other infrastructure projects such as roadway bridges over rivers or freeways can provide opportunities to create bicycle connections across one or several barriers, particularly in instances where there is not a useful parallel alternative within a reasonable biking distance.

By their nature, projects to remove physical barriers can prove costly, and opportunities to enhance such connections may be opportunity driven with respect to major highway improvement projects. Given the significant expense of building connections like

bridges or underpasses and their anticipated long design lives, it is advantageous to consider the inclusion of bicycle infrastructure in all projects that improve options to cross or get around these physical barriers, even if the full potential of the bicycle connection is not evident at the time of construction.

4.3 Guiding Principles for Regional Bicycle Corridors

From the onset of the Study, the project team sought to develop a common understanding of the role and function of the Regional Bicycle Transportation Network. To this end the Study identified a set of Guiding Principles that helped steer direction of the analysis and eventual recommendations presented in this Study report. These are described in the green sidebar on this page.

The draft guiding principles were based on guidance received from the PAC early in the process, the input received from the public at four listening sessions, and a review of principles included in adopted regional and local transportation and bicycle plans. During the initial PAC meeting and the listening sessions, participants were asked to work individually and then in small groups to describe potential roles for a Regional Bicycle Transportation Network.

The following guiding principles were shaped largely by the existing plan review, public input, and PAC discussions. These guiding principles were the basis for the identification and placement of bikeway corridors on a Regional Bicycle Transportation Network (as further described in Sections 5 and 6).

Items in **bold** represent the principles that were ranked as the *six most important* principles *by majority consensus* of public workshops attendees**.** The percentage of public attendees identifying an item as one of the six priorities for the network is also provided.

Regional Bicycle Corridors Should….

- **Overcome physical barriers and eliminate critical system gaps (85%)**
- **Facilitate safe and continuous trips to regional destinations in urban/suburb/rural areas (69%)**
- **Function as arteries to connect regional destinations and the transit system year-round (62%)**
- **Accommodate a broad range of cyclist abilities/preferences to attract variety of users (62%)**
- **Integrate and/or supplement existing and planned infrastructure (roads and trails) (54%)**
- **Provide improved opportunities to increase the share of trips made by bicycle (46%)**
- Connect to local, state and national bikeway networks (31%)
- Consider opportunities to enhance economic development (23%)
- Be equitably distributed throughout the region (15%)
- Follow spacing guidelines to reflect established development and transportation patterns (0%)
- Consider regional priorities reflected in adopted bicycle plans (0%)

4.4 Corridor Spacing

Another consideration in the design of the bikeway network is the spacing of regional bikeway corridors. Regional bikeway corridors perform a different function than local bike routes, or community bike routes that provide key connections within parts of a city, but do not necessarily extend or function at a regional level. As noted in the guiding principles for regional bikeways, regional bikeways "function as arteries to connect regional destinations and the transit system year-round." They also "facilitate safe and continuous bicycle travel to and between regional destinations." Research on corridor

spacing from local and national plans and peer regions was conducted to compare and validate the spacing for the proposed Regional Bicycle Transportation Network corridors for the Twin Cities region.

4.4.1 Corridor Spacing Research

National research into regional bikeway spacing guidelines did not uncover any substantive existing research or state-of-practice documentation with an explicit focus on bikeway spacing at the regional level. Traditionally, spacing guidelines were developed by transportation agencies to establish a functional classification system across a roadway network to handle projected volumes of motor vehicle traffic across a network. The spacing of higher level roadways (collectors and arterials) are closely tied to population and trip generation factors that increase significantly within developed areas.

The focus of bicycle network planning is typically access to the system with an emphasis on increasing network density in more developed urban areas. There are no defined standards for level of access to the network at the regional level. However, it is useful to examine the regional efforts of peer systems as a consideration of addressing the needs of the Twin Cities.

Three approaches to bikeway spacing were researched.

Guidance from Local Plans. Important guidance is offered by spacing guidelines already in use by local municipalities, and certainly any regional spacing guidelines should consider local spacing guidance. The following bicycle facility spacing guidelines are used by local cities in the Twin Cities region:

- Principal arterial bikeways should be spaced about 2 miles apart with minor arterial bikeways spaced 1 mile apart (Minneapolis Bicycle Master Plan, page 179)
- Generally, bikeways should be no more than a half-mile apart, and arterial striped bike lanes and/or off-street trails should be no more than one mile apart (*Saint Paul Transportation Plan*, page 16)

While these guidelines provide context, they should be considered in light of the regional context of this study.

Guidance from Roadway Spacing. Guidance for the spacing of regional bicycle corridors could also be tied to roadway spacing. In reviewing the existing 2010 TPP, minor arterials may provide an analogous spacing of the roadway network that could be relevant to a regional bikeway system. Appendix D of the 2010 TPP specifies four levels of spacing for minor arterial roadways:

- Metro centers and regional business concentrations: ¼ mile to ¾ mile spacing
- Developed areas of the region: ½ to 1 mile
- Developing areas of the region: 1 to 2 miles
- Rural areas: As needed, in conjunction with the major collectors, provide adequate interconnection to cities and towns outside the Twin Cities region.

Guidance from Peer Regions. Research on spacing guidelines included three peer regions across the country – the metropolitan areas of Atlanta, Denver and Nashville. These regions were selected based on similarities in metropolitan scale and general approach to identifying a regional bicycle network. None of the plans for these regions included specific reference to spacing guidelines, but the team was able to analyze the networks using GIS to develop general spacing comparisons based on distance from the urban core.

The results of the analysis are shown in Table 2, with spacing from peer areas evaluated

at five mile increments from the urban core of each city. A more detailed review of the methodology behind this comparison can be found in Appendix C.

Table 2 - Regional bicycle corridor spacing in peer regions

Peer Region	Distance from Center of Primary Business District		
	5 miles	10 miles	15 miles
Atlanta	3.4 mi	3.1 mi	6.6 mi
Denver	4.2 mi	4.7 mi	5.0 mi
Nashville	2.6 mi	4.3 mi	3.9 mi
Peer average	**3.4 mi**	**4.0 mi**	**5.2 mi**

4.4.2 Spacing of Proposed Network

Table 3 shows how the proposed Regional Bicycle Transportation Network developed for this study (shown in the map on page 26) compares to the findings from the other regions.

Table 3 - Analysis of Peer Region Bikeway Corridor Spacing

Region	Distance from Center of Primary Business District		
	5 miles	10 miles	15 miles
Peer average (Table 4)	3.4 mi	4.0 mi	5.2 mi
Proposed Regional Bicycle Transportation Network	1.1 mi	1.7 mi	2.7 mi
Difference	-2.3 mi	-2.3 mi	-2.5 mi

The results of the analysis show the proposed Regional Bicycle Transportation Network corridors have a spacing density that exceeds those found in the peer regions, especially in relation to the core urban areas at 5 and 10 miles. This is due, in large part, to the mature network of existing bicycle facilities found in the Twin Cities region, which provides a more robust framework for a bicycle transportation system.

The results at the 10 to 15 mile distance suggest that the spacing of the proposed Regional Bicycle Transportation Network is twice as dense as the average of the three metro areas researched. However, this seems reasonable given the fact that the downtowns of Minneapolis and Saint Paul are spaced 10 miles apart and that development densities would be higher at greater distances from the combined core, (or at the 10 and even 15 mile range) based on the natural overlap of dense urban form extending outward from both downtowns.

4.5 Network Scoring and Prioritization

The methodology and approach for scoring and prioritizing the proposed network is a direct reflection of the guiding principles presented earlier in this section. Each corridor within the proposed network was scored on ten key factors that reflect regional bicycle demand, for which there was available data.

Emphasis on Regional Destinations. A key function of the network is connecting regional destinations.

For purposes of the Study, Regional Destinations were defined as being: Regionally-recognized activity nodes or corridors where people work, shop, recreate, or are entertained. These may be further defined by one or more activity thresholds. Regional Destinations will typically be centers where multiple transportation modal options, such as high-level transit service, are provided.

Regional Employment and Activity Centers. Metropolitan Council staff, as part of the Thrive MSP 2040 development process, used employment data to identify job and activity clusters across the region. These centers

constitute many of the primary destination points within the region. It will be important to provide access to them via the bicycle transportation system. The threshold set for any area to be recognized as a regional or sub-regional center is at least 7,000 jobs at a density of at least 10 jobs per acre of developable land. There are three intensities of job and activity centers included in the analysis – metropolitan, regional, and sub-regional.

Other Destinations of Regional Significance. Because the list of job and activity centers used to define the Regional Employment and Activity Centers was not all-inclusive, the project team worked with the PMT and PAC to identify several other destination categories. Such as major sports and entertainment complexes, large high schools, and regional parks that attract heavy use.

Feedback Destinations and Feedback Priority Destinations. Public input regarding important regional destinations was gathered during the planning process and was mapped in GIS. These data points represent individual and group consensus input about important bicycling destinations.

Bicycle Travel Demand. Cyclopath is a local on-line mapping-based bicycle route identification utility built and hosted by the University of Minnesota. This web-based "geowiki" application assists the general public in finding suitable bicycle routes and providing feedback about the quality of the bicycle experience along facilities. This on-line routing tool has the ability to capture a unique data set containing every route request from the website's growing user audience. This includes both origin and destination data for every request since the website's inception. While these requests do not necessarily represent actual trips, they provide a very useful surrogate for bicycle demand across and beyond the seven-county region.

Connecting with Transit. One of the stated goals of this Study is to better integrate the region's bicycle infrastructure with the region's transit infrastructure. The most meaningful connections will occur primarily at stations on regional transitways. These locations offer the highest frequency of transit service and the greatest capacity for the transfer and storage of bicycles.

Future Population. Projected population densities across the region were used to ensure the Regional Bicycle Transportation Network will serve long range transportation needs that are closely matched to future population growth in the region.

System Equity. As part of the Thrive MSP 2040 effort, the Metropolitan Council identified Racially Concentrated Areas of Poverty (RCAP). Given the diminished economic opportunity present in these areas, it was particularly important to ensure that the proposed bicycle network provides equitable service to these communities.

4.5.1 10 Key Factors for Network Scoring

After the draft network was identified, the corridors were scored based on ten key factors that address the guiding principles. A description of these factors and the total points possible for each is included in Table 4. Appendix E includes the mapped scoring results for each factor along with detailed descriptions of the data, total possible score and percent contribution to cumulative corridor score for each category.

Table 4 - Key Factors for Network Scoring and Prioritization

Factor	Description	Maximum Points Possible
Metropolitan centers	Centers holding at least 50,000 jobs at a density of at least 50 jobs per acre.	4.5
Regional job and activity centers	Centers holding 15,000 to 49,999 jobs at a density of 10 to 49 jobs per acre.	2
Sub-regional job and activity centers	Centers holding 7,000 to 14,999 jobs, at a density of 10 to 49 jobs per acre.	1
Selected other destinations	Major sports and entertainment complexes, high schools with 2000+ students, regional parks exceeding 400,000 visitors per year.	1
Feedback destinations	Destinations identified during the listening sessions, through the interactive web-mapping tool, and at the public workshops.	1
Feedback priority destinations	Destinations from priority lists developed at public workshops.	1
Cyclopath origin and destination requests	Unique origin and destination requests (both number and density along corridor).	2
Transitways and transit stations	Existing stations on the Northstar Commuter Rail Line, the Blue Line (Hiawatha LRT), the Red Line (Cedar Avenue BRT), planned and proposed stations along the Green Line (Central Corridor LRT and Southwest LRT), Gateway Corridor and Bottineau LRT.	1
Projected 2030 population density	Areas with population densities equal to or greater than 10 people per acre.	1
Racially concentrated areas of poverty (RCAP)	Areas where more than 50 percent of the residents are people of color and more than 40 percent of the residents have incomes less than or equal to 185 percent of the Federal poverty line.	1

4.5.2 Scoring Methodology

For purposes of evaluating the Regional Bicycle Transportation Network corridors, a one-mile bandwidth was selected as the extent of analysis across the region. The analysis was conducted by evaluating features within the one-mile area. If, for example, a major destination fell within a corridor's bandwidth, that was presumed to be a corridor asset and contributed to its overall score.

The draft network corridors were also divided into segments of varying length, with an average corridor segment length of about 5 miles. Starting and ending points for these segments were established based on logical termini or transitions in development/ land use intensity.

Each corridor segment received a total cumulative score based on the sum of

points received for the ten factors. The final scores allowed for a more meaningful comparison of potential importance of each corridor in addressing regional bicycle transportation demand.

4.5.3 Prioritization

Based on the corridor scoring, a priority corridor subset was identified within the larger proposed regional network. In addition, other refinements were made such as realigning, removing, or adding corridors, where appropriate, based on stakeholder input.

Several considerations went into the prioritization of corridors. Higher-scoring corridors were generally determined to be priority corridors, based on their ability to connect regional destinations. To address the general guiding principle of regional geographic equity, care was taken to distribute the priority corridors around the region rather than identifying multiple priority corridors that served similar destinations. Finally, the placement and extent of priority corridors were based on how well they serve developed and developing areas as shown in Metropolitan Council's 2030 Development Framework Planning Areas map (see Figure 9).

In the Development Framework, *developed areas* are those where most of the land has been developed and infrastructure is well established. Because the developed area for the region is quite large, the urban core of Minneapolis and Saint Paul were treated as a subset of the developed areas for the Study analysis.

Developing areas are those where the most substantial amount of new growth is expected to occur in the coming decades. *Rural areas* are those that are dominated by cultivated farmland, nurseries, tree farms, orchards and vineyards, scattered individual home sites or clusters of houses, hobby farms,

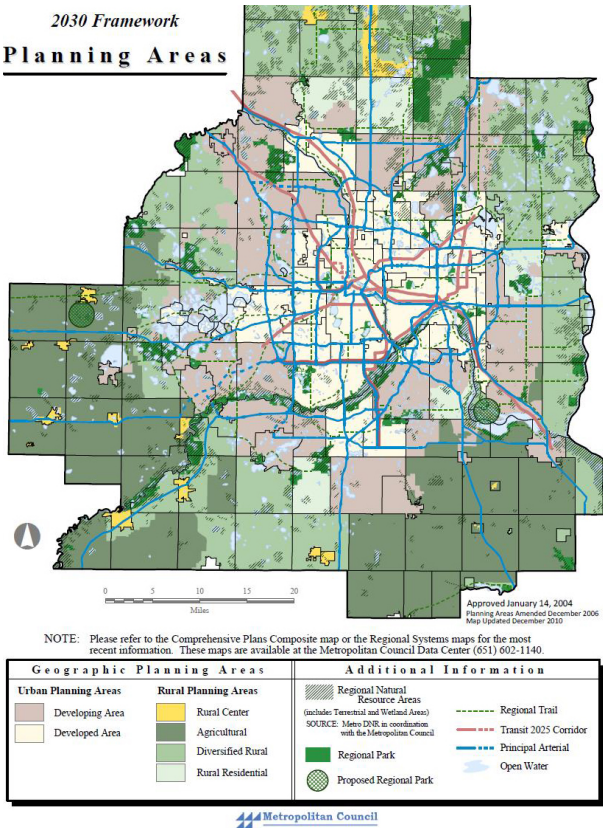

Figure 9 - Map of the 2030 Development Framework Planning Areas

small towns, gravel mines, and woodlands and are not expected to change significantly in the foreseeable future.

Based on this information, the network was adjusted so that the priority corridors better serve the developed areas of the region in order to reach the highest density of potential bicyclists. The priority corridors were generally terminated at the border between developing and developed areas, with some exceptions to allow them to serve isolated urban areas (e.g., Hastings and Stillwater). The final analysis and development of draft Priority Regional Bicycle Transportation Corridors reflected a comparison of corridors based on development context zones as follows:

- Zone 1 – Urban Core of Minneapolis and Saint Paul (subset of the Developed Urban Area)

- Zone 2 – Remaining Urban Areas that are currently developed
- Zone 3 – Developing Urban Areas
- Zone 4 – Rural Planning Areas

Figure 10 shows a map of the corridors based on these four context zones.

4.6 Regional Bicycle Transportation Network Scoring Map

The Regional Bicycle Transportation Network with cumulative scoring results is presented in Figure 11. Because of the iterative process, the final proposed network contains a number of changes from the network that was scored in October 2013, which is presented in Section 6.2.

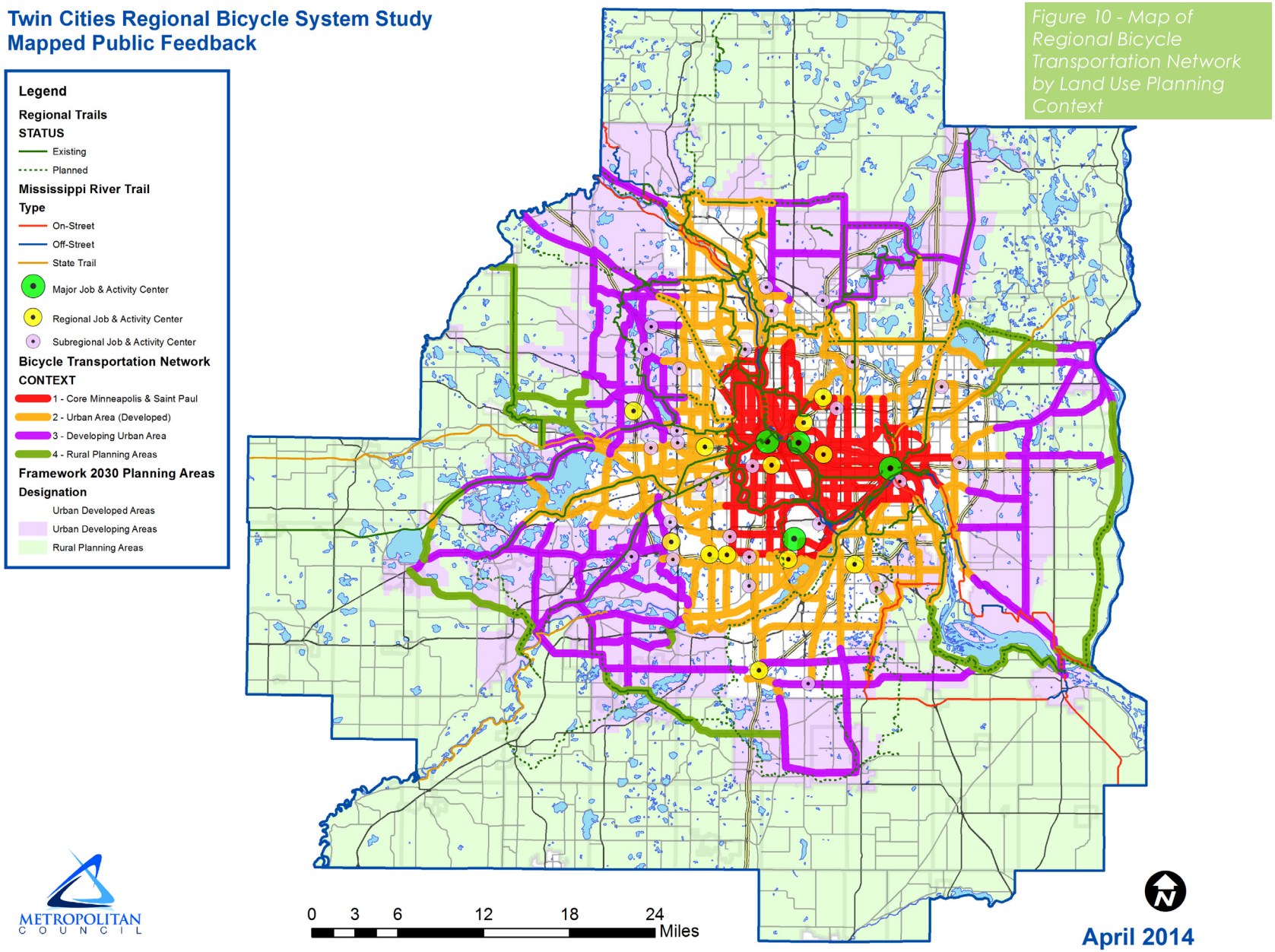

Figure 10 - Map of Regional Bicycle Transportation Network by Land Use Planning Context

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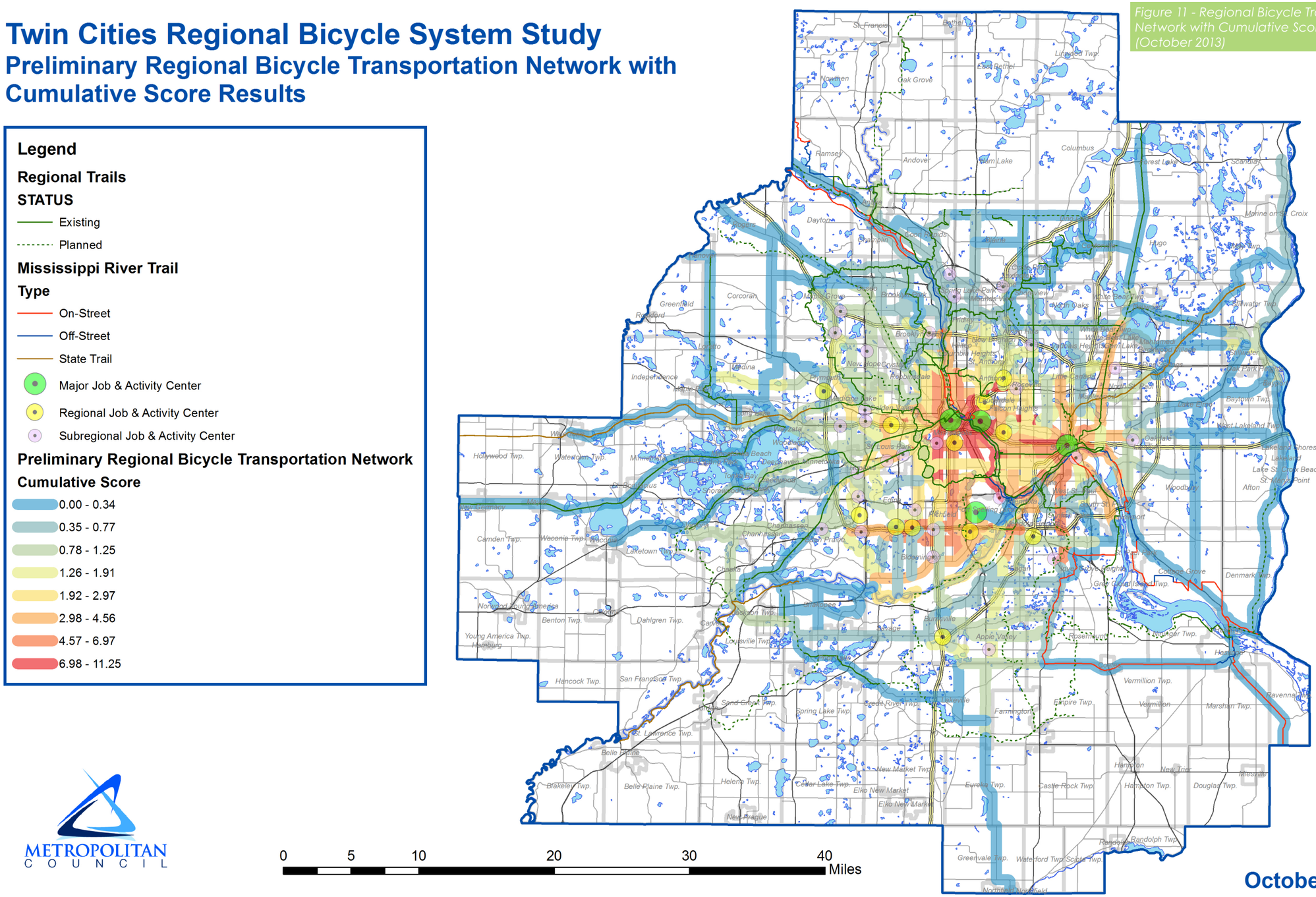
Preliminary Regional Bicycle Transportation Network with Cumulative Score Results

Figure 11 - Regional Bicycle Transportation Network with Cumulative Score Results (October 2013)



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5. Study Outcomes

There are four major outcomes of this Study:

1) Regional Bicycle Transportation Network;
2) Priority Regional Bicycle Transportation Corridors;
3) Criteria definitions for identifying Critical Bicycle Transportation Links; and
4) a Framework for Evaluation and Performance Measures.

The guiding principles, introduced in Section 4, have provided the lens for evaluating the work as it progressed through the Study. Changes to the network and driven by stakeholder conversations, where the guiding principles provided a framework for appropriate choices for defining the Regional Bicycle Transportation Network and Priority Regional Bicycle Transportation Corridors. The resulting Regional Bicycle Transportation Network (Figure 12) is a product of significant stakeholder input. It will be viewed as an initial framework for a regional bicycle transportation system that should evolve over time with future updates to the TPP.

5.1 Proposed Network

The Proposed Regional Bicycle Transportation Network serves the urban and growing suburban communities in the region. These corridors are not intended to define specific alignments facility alignments, but rather to identify the general corridors for implementation of a regional bicycle network. Corridors generally represent one mile-wide bandwidths, and 1/2 mile bandwiths in the urban core. Existing or planned alignments may or may not be known and identifiable in these corridors. In cases where there is no existing or planned alignment within a network corridor, the Metropolitan Council will continue to work with local partners to identify appropriate routes and alignments.

The proposed Regional Bicycle Transportation Network including the Priority Regional Bicycle Transportation Corridors is shown in Figure 12.

The Proposed Regional Bicycle Transportation Network includes 1,270 miles of proposed network corridors. Within the overall network there are 579 miles proposed as Priority

Key Definitions:

Regional Bicycle Transportation Network. The entire set of proposed network corridors that serves as the "backbone" arterial system, connecting the county and local systems with regional destinations.

Priority Regional Bicycle Transportation Corridors. A subset of the Regional Bicycle Transportation Network that have been identified as high priority based on the network scoring (described in Section 5.3) and degree to which the corridors connect population centers with key regional destinations and the regional transit system. The "priority" corridors represent the highest potential bicycle demand corridors based on urban/suburban development context and reflecting the existing and planned population and employment densities in the region.

Critical Bicycle Transportation Links. Perform one or more of the following functions:

- Serve to close a gap in the regional network
- Improve continuity and connections between jurisdictions (on or off-network)
- Remove a physical barrier (on or off-network)

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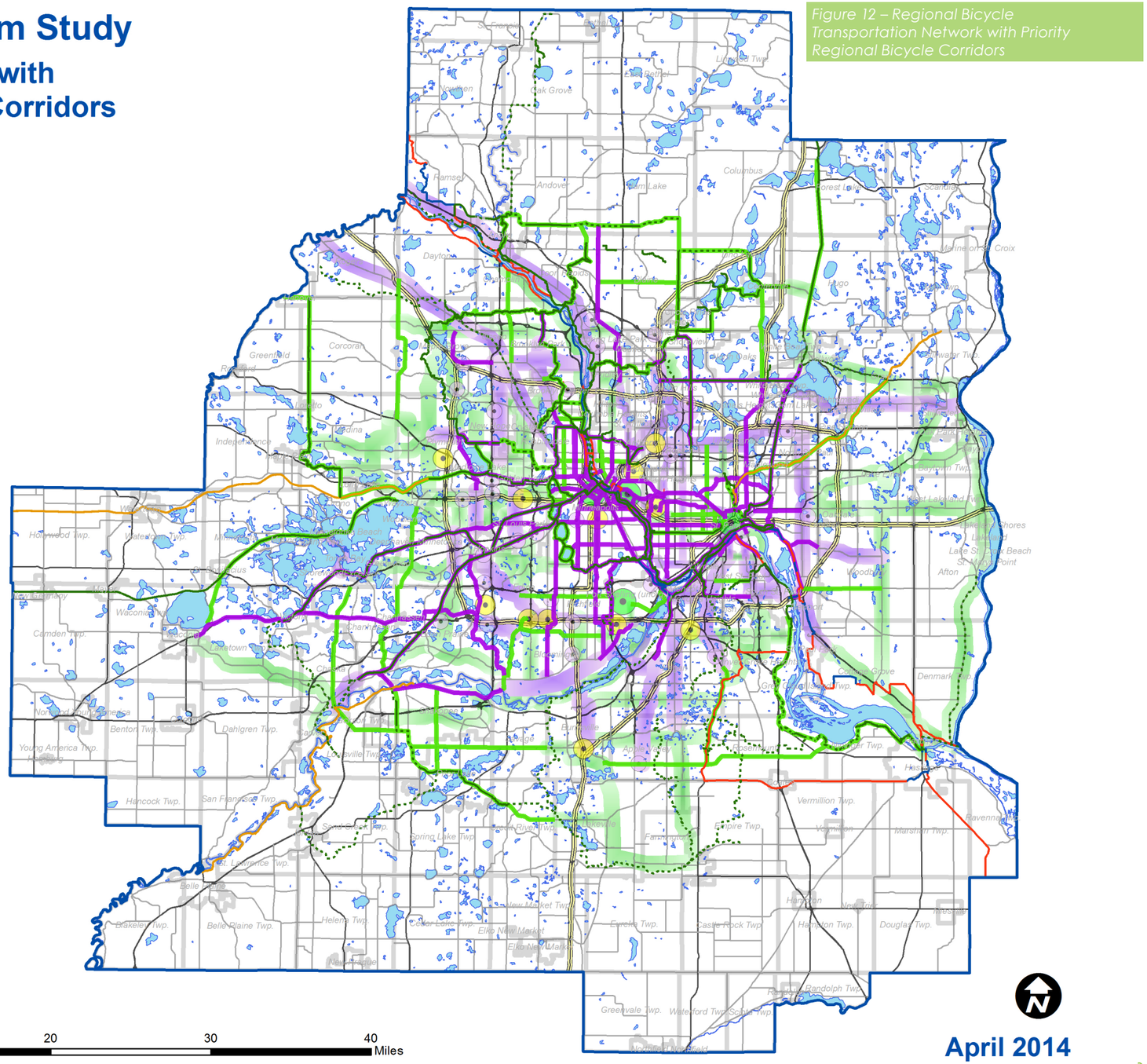
Regional Bicycle Transportation Network with Priority Regional Bicycle Transportation Corridors

Figure 12 – Regional Bicycle Transportation Network with Priority Regional Bicycle Corridors



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Regional Bicycle Transportation Corridors, or about 46% of the proposed overall network.

5.1.1 Addressing Agency and Public Input on Draft Network

Arriving at the final Regional Bicycle Transportation Network shown in Figure 10 involved an iterative process of analysis and refinement of the proposed network between August and December of 2013 guided by extensive feedback from the PMT and the PAC.

In early 2014, the Metropolitan Council conducted a series of network refinement meetings with agency staff at each of the seven counties to review corridor alignments and to identify specific existing or planned facility alignments within the corridors where consensus could be reached. As a result of these refinement meetings, specific alignments for 689 miles, or more than half (54%) of the entire network, were identified and mapped. The remaining 581 miles of network are shown as one-mile wide corridors (1/2 mile in the core cities) with specific alignments yet to be determined (see Figure 10).

Figure 13 - The Project Advisory Group (PAG) met five times over the course of the study.

5.1.2 How the Network Addresses the Guiding Principles

The creation of the proposed bikeway network was informed by the guiding principles for regional bicycle corridors as developed by the PAC and refined by the PMT. Below is a brief summary of how each guiding principle is reflected in the Study results.

Regional bikeway corridors should…

Overcome physical barriers and eliminate critical system gaps.

Much of the Study effort and analysis focused on barriers to bicycling in the region such as bridges, freeways, and rivers. The establishment of criteria defining Critical Bicycle Transportation Links specifically addresses gaps and barriers for future network implementation. Bridging these gaps will create a more convenient and continuous bikeway system.

Facilitate safe and continuous trips to regional destinations in urban, suburban and rural areas.

Building out and upgrading bicycle facilities along the proposed Regional Bicycle Transportation Network will improve the convenience and safety of bicycling along these facilities. Addressing Critical Bicycle Transportation Links that improve the connections and continuity of routes between cities or between counties will provide for easier and more bike-friendly travel and reduce the need for users to follow less safe routes to reach their destinations.

Function as arteries to connect regional destinations and the transit system year round.

Both the scoring of the network and identification of Priority Bicycle Transportation Corridors emphasized connections to regional destinations as well as connections to the regional transit system.

Accommodate a broad range of cyclist abilities and preferences to attract a wide variety of users.

The network was developed to help facilitate bicycle access to key regional destinations. Bicyclists experience varying levels of comfort based on facility type (on-road facility or off-road trail), roadway characteristics, and personal level of experience and ability. Establishing broad corridors for planning the bicycle network may allow locals to develop both an on-street facility and an off-road trail or barrier-separated facility in some high demand corridors; dual facility types in these corridors would serve to accommodate the full range of cyclist preferences.

Integrate and/or supplement existing and planned infrastructure (roads and trails).

The identification and refinement of the Regional Bicycle Transportation Network placed emphasis on alignments that take advantage of existing and planned facilities. Meetings with the agency staff in early 2014 provided additional opportunities to specify alignments based on existing and planned facilities.

Provide improved opportunities to increase the share of trips made by bicycle.

Implementing a complete Regional Bicycle Transportation Network that is designed to serve key regional destinations will provide more convenient connections to places people want to go, increasing the likelihood of choosing bicycling for transportation trips within the region.

Connect to local, state and national bikeway networks.

Identification and refinement of the Regional Bicycle Transportation Network relied heavily on knowledge of the existing local, state, and national systems. Placement of network corridors were based in part by how they connected to other systems.

Consider opportunities to enhance economic development.

Economic development impacts are accounted for in the heavy emphasis on connecting Regional Job and Activity Centers. Additionally, much of the network was developed to address existing and planned growth in the region. As evidenced by the high level of development that has followed the Midtown Greenway, it can be anticipated that new bicycling investments will have a positive impact on creating local economic development opportunities and foster the Twin Cities' image as highly livable region with many bikeable destinations.

Be equitably distributed throughout the region.

There was an emphasis on both geographic balance and social equity in developing the Regional Bicycle Transportation Network. This included a focus on where people live, work and recreate, but also emphasized equitable access to bicycling opportunities by including the Metropolitan Council's identified Racially Concentrated Areas of Poverty (RCAP) as an explicit analysis factor.

Follow spacing guidelines that reflect the established development and transportation patterns.

Both local and national practices related to regional bikeway spacing were analyzed (see Section 4.4). The Regional Bicycle Transportation Network was developed and refined in a manner such that the average spacing for the regional bicycle corridors was closer, and therefore representative of a more accessible network, compared to regional bikeway networks found in other regions.

Consider regional priorities reflected in adopted plans.

Local bicycle plans and policies related to bicycling were analyzed and those relevant to the region's priorities were incorporated in the development of the Regional Bicycle Transportation Network.

6. Moving Forward

6.1 Next Steps for the Network

The Regional Bicycle Transportation Network and Priority Regional Bicycle Transportation Corridors developed through this Study will be proposed in the forthcoming 2040 TPP. The draft TPP, including a bicycle/pedestrian section describing planning strategies and funding priorities for the region, will be released in Summer 2014 for public review. After a public comment period, the TPP will be reviewed and finalized by the Metropolitan Council for final adoption in late 2014. Further information on the overall process for TPP development and public review can be found here: http://www.metrocouncil.org/Transportation/Planning/2030-Transportation-Policy-Plan/TPPupdate.aspx.

The TPP is one of three regional systems plans that will take policy direction from Thrive MSP 2040, the Council's update to its long range comprehensive development guide. Once adopted, local units of government in the region will be required to review their local comprehensive plans in their next round of legislatively required 10-year updates (to be completed by 2018) to conform with Thrive MSP 2040 policies. Further information about Thrive MSP 2040 can be found here: http://metrocouncil.org/Planning/Projects/Thrive-2040.aspx.

6.2 Framework for Evaluation and Performance Measures

This section incudes background on the policy environment and need for performance measures, a summary of performance measure recommendations from MnDOT, and recommendations for performance measures for use by the Metropolitan Council in evaluating the success of the Twin Cities Regional Bicycle Transportation Network. Recommendations on performance measures are split into two categories for consideration, near-term and long-term measures. Within each category, consideration is given both to performance measures that would be most appropriate for use by the Metropolitan Council, along with performance measures that local governments might develop themselves to complement regional indicators. Performance measures used in other systems around the country were assembled and considered. A list of these measures can be found in Appendix F.

The current federal transportation law, Moving Ahead for Progress in the 21st Century (MAP-21) was signed into law in 2012, and authorizes federal transportation programs for Federal Fiscal Years 2013 and 2014. MAP-21 includes an increased emphasis on performance-based transportation planning over previous federal laws. *Under MAP-21, long-range transportation plans such as the Metropolitan Council's TPP must include a description of the performance measures and targets used to address the transportation system.* The TPP must also include a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the established performance targets. While these target requirements currently do not apply to the non-motorized system, this Study recommends a range of performance measures that the Metropolitan Council could apply to measure the performance of the region's bicycle system.

6.2.1 Performance Based Planning

The central defining feature of performance-based planning is that it moves beyond simple measurement, and instead deliberately links performance to planning and programming. Quality data is essential to implement the performance measures. Performance measures and data collection

strategies can evolve in tandem over time to more accurately assess progress toward goals and objectives.

6.2.2 MnDOT Statewide Bicycle Planning Study Recommended Performance Measures

In order to meet the intent of MAP-21's requirements around performance measures, it is recommended that the Metropolitan Council coordinate with state measures and targets. Below is a summary of the performance measures recommended in the MnDOT Statewide Bicycle Planning Study, which was completed in March 2013. While MnDOT's study did not provide specific targets, it did establish a general format for performance measures focused around three core areas of interest: usage, safety, and assets.

Usage. It is important to understand the degree to which the bicycle system invites regular use by providing potential bicyclists with an attractive choice for transportation. There are many ways to measure usage, such as the number of daily bicycle commuters, number of miles travelled on bicycles, and number of trips made by bicycles.

In the past, MnDOT has relied on the American Community Survey (ACS) report of bicycle usage. However, ACS data on bicycling is based on a limited sample size, which can often make it challenging to track increases in mode share. Change from year to year can sometimes be lower than the margin of error for the sample population. To improve upon this, MnDOT is undertaking a statewide data collection study to evaluate the effectiveness of both permanent and temporary portable counters capable of monitoring bicycle travel throughout the state. MDOT is partnering with the University of Minnesota to develop a systematic approach to counting bicycle trips. That methodology will allow MnDOT to infer overall bicycle counts from a sample of data collected in the field.

Safety. Safety is another core measure of system performance. Reducing bicycle crashes to zero is always the goal, but understanding improvements in the rate of crashes, as the total number of trips taken by bicycle increases (or decreases) is critical to better understanding safety trends. This metric requires detailed data collection and is based on the total number of crashes involving bicyclists and the total number of bicycle trips. MnDOT's recent research on usage will contribute to a better measure of safety.

Assets. The third measure of system performance identified in the MnDOT study is to better understand the physical infrastructure in the bicycle system. The assets of the regional bicycle system can be measured in a number of ways, including miles of bikeways and number of local governments with bicycle plans. Another consideration is how well-placed the bikeway facilities are – do bikeways connect people effectively to things like goods and services, employment, recreational destinations and transit service? The state network MnDOT recommends in its upcoming Bicycle System Plan for the Metro District will be informed by the results of this Study, which has considered connections between destinations in detail. Thus, measuring the progress toward network completion will help to address systme performance.

This measure requires an understanding of the existing system. MnDOT has made improvements to its data collection methods for bicycling infrastructure assets as a result of the Statewide Bicycle Planning Study. MnDOT continues to refine its data collection and storage while also looking at how to best

measure quality, quantity or access to the state's bicycling assets. Some of this work will be through research projects and some will be through the Statewide Bicycle System Plan.

6.2.3 Twin Cities Region Performance Measures – Near Term

The three MnDOT-proposed performance measures – usage, safety, and assets – may represent the three top-level measures of performance of the regional bicycle network as well. MAP-21 recommends coordination between MPOs and state transportation agencies conducting this research, and this is an opportunity for the Metropolitan Council to align its practices with those of MnDOT.

MnDOT's implementation of these performance measures would be phased in over time as robust data collection is not immediately available for all measures. The Metropolitan Council may wish to evaluate local roles in data collection based on the outcome of the MnDOT study and examine existing manual count programs being undertaken by the Cities of Minneapolis and Saint Paul and Transit for Livable Communities that have grown out of the Non-Motorized Transportation Pilot Program (NTPP) program.

Performance measures applicable to the Metropolitan Council's efforts may differ from MnDOT's performance measures. In particular, the Metropolitan Council may wish to focus analysis only on the regional corridors ultimately adopted from this Study into the final TPP. Thus, as the process for data collection becomes clearer, the Metropolitan Council may determine that MnDOT's data need to be supplemented with more local data for a finer-grained analysis of the Twin Cities region.

Safety or bicycle crash data, where available and reliable, could be more easily tailored to particular corridors, but given the low numbers of bicycle crashes at any single location, these data may not provide a clear picture or even mask potential safety issues. Providing improved bicycle facilities within a corridor should improve bicycling safety within that corridor. But such improvements are also likely to change trip patterns in the region, making it difficult to maintain comparable sets of data as facilities change over time. Thus, safety data may be most meaningful at a broad regional scale and tracked annually over time.

Unlike safety and usage data, data on assets are particularly easy to collect specifically for the regional bicycle network. However, before such measures can be taken, the definition of what kinds of facilities qualify as meeting the intent of a regional bicycle corridor must be refined. Once that definition is established, existing facilities must be inventoried to identify facilities that meet the definition. Collection of this data may take longer, as it requires more unique local effort. Collecting this data may make more sense on a longer-term schedule.

6.2.4 Twin Cities Region Performance Measures – Long Term

Quantifying progress toward building out the Regional Bicycle Transportation Network is an important long-term performance measure for the Metropolitan Council. This performance measure assumes that the regional bicycle corridors identified by this Study adequately respond to regional bicycling demand and regional destinations. To account for changing conditions as the Twin Cities region continues to grow, it is appropriate to develop a performance measure that evaluates how well the bicycle network serves regional destinations.

It is recommended that the Metropolitan Council further develop two additional interrelated performance measures. The first would measure the percentage of regional destinations that are within a mile of a constructed regional bicycle corridor. This requires a definition of regional destination (see Section 4 for the definition of regional destinations).

The second performance measure would measure the percentage of the region's population within one mile of a constructed regional bicycle corridor. This would be a relatively simple calculation, and would utilize GIS data to analyze the proportion of the region's population, based on the latest block-level Census data, that lies within one mile of a constructed regional bicycle corridor.

The Metropolitan Council should continue to have a meaningful dialog about performance measures in conjunction with the TPP process to further refine and select the metrics that best reflect the agency goals for system performance. As part of this Study, the project team reviewed a number of existing performance measures being used by other transportation agencies across the country. A summary of select performance measures identified can be found in Appendix F.

6.3 Conclusion

The Twin Cities Regional Bicycle System Study is the first step in defining the Regional Bicycle Transportation Network and establishing Priority Bicycle Transportation Corridors. The intent of the Regional Bicycle Transportation Network is to encourage more consistent planning and implementation of future bikeways with the goal of establishing a seamless network of on- and off-road facilities that will optimize the potential for bicycle transportation across the region.

Moving forward the study recommendations will inform the forthcoming 2040 TPP that will include more opportunity for public comment before final adoption in late 2014. Further information on the overall process for TPP development and public review can be found here: http://www.metrocouncil.org/Transportation/Planning/2030-Transportation-Policy-Plan/TPPupdate.aspx.